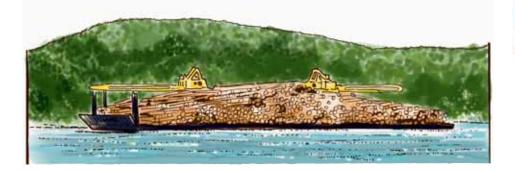


Understanding forest tenure in South and Southeast Asia

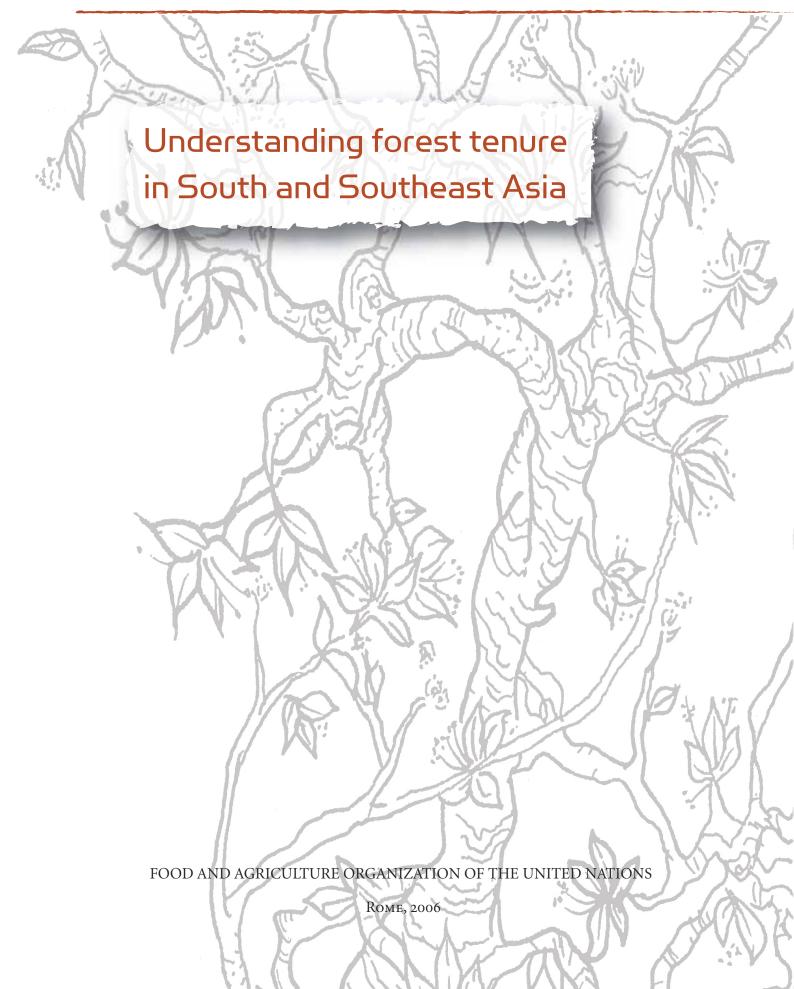








Forestry Policy and Institutions Working Paper



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¹A complete list of the papers is included in the References.

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Foreword

Does forest tenure matter? In what way does it matter? What are the links among tenure, sustainable forest management (SFM) and poverty alleviation (PA)?

This paper presents the main findings of research that was conducted by FAO and partners from the Asia Forest Partnership with the aim of analysing and understanding the role of tenure arrangements, their enabling impacts and their limitations. The paper presents a summary of different tenure instruments' performance in supporting SFM and PA, and provides recommendations for more effective forest tenure systems.



Acronyms

1 acre	0.405 ha
1 foot	30.48 cm
1 inch	25.4 mm
1 mu	approximately 0.07 ha.
1 rai	0.16 ha
5MHRP	5 Million Hectare Reforestation Program
AAC	annual allowable cut
ADB	Asian Development Bank
AHRS	agricultural household responsibility system
AJK	Azad Jammu and Kashmir
asl	above sea level
AusAid	Australian Agency for International Development
CADC	certificate of ancestral domain claim
CADT	certificate of ancestral domain title
CALC	certificate of ancestral land claim
CARE	Cooperative for Assistance and Relief Everywhere
CBFM	community-based forest management
CBFMA	community-based forest management agreement
CBS	Central Bureau of Statistics
CCF	Chief Conservator of Forests
CDS-YASS	Centre for Community Development Studies, Yunnan Academy of Social Sciences
CF	community forestry
CFLUP	Consensus Forest Land-Use Plan
CFM	community forest management
CFUG	community forest user group
CFUG	Community Forest User Group (Nepal)
CFWG	Community Forestry Working Group

CIFOR	Center for International Forestry Research
CPC	communal people's committee
CSC	certificate of stewardship contract
D	Vietnamese dong
DAI	Development Alternatives Inc.
DANIDA	Danish International Development Agency
DAO	department administrative order
DCC	District Coordination Committee
DENR	Department of Environment and Natural Resources
DFCC	District Forestry Coordination Committee
DFID	Department for International Development (United Kingdom)
DFO	divisional forest officer
DILG	Department of the Interior and Local Government
DNP	Department of National Parks, Wildlife and Plant Conservation
DOE	Department of Energy
DPC	District People's Committee
EcoGov	Philippine Environment Governance Project
FAO	Food and Agriculture Organization
FD	Forest Department
FDA	forest development agency
FECOFUN	Federation of Community Forest User Groups in Nepal
FFI	Flora and Fauna International
FINNIDA	Finnish International Development Agency
FIO	Forest Industry Organization
FIPI	Forest Inventory and Planning Institute
FLA	fishpond lease agreement
FMB	Forest Management Bureau
FMU	forest management unit
FPC	forest protection committee
FPD	Forest Protection Department

- FPE Foundation for the Philippine Environment
- FRA Forest Resources Assessment (Global)
- FSC Forest Stewardship Council
- FSMP Forestry Sector Master Plan
- FUC Forest User Committee
- FUP forest use permit
- FVDP Forest Village Development Programme
- FWI Forest Watch Indonesia
- GDP gross domestic product
- GEF Global Environment Facility
- GFW Global Forest Watch
- GIS Geographic Information System
- GP Gram Panchayat (local governing body)
- GTZ German Agency for Technical Cooperation
- GTZ German Agency for Technical Cooperation
- GTZ German Agency for Technical Cooperation
- ha hectare
- IDS Institute for Development Studies
- IFAD International Fund for Agricultural Development
- IFMA industrial forest management agreement
- IGF Inspector General Forests
- IPF Intergovernmental Panel on Forests
- IRA internal revenue allotment
- IRRs implementing rules and regulations
- ITE industrial timber estate
- ITPLA industrial tree plantation lease agreement
- ITTO International Tropical Timber Organization
- IUCN World Conservation Union
- JBIC Japan Bank for International Cooperation
- JFM joint forest management

JFMC	Joint Forest Management Committee
LEAD	Leadership for the Environment and Development
LGU	local government unit
LHF	leasehold forests
M&E	monitoring and evaluation
MARD	Ministry of Agriculture and Rural Development
MBPF	management board for protection forest
MBSF	management board for special-use forest
MDG	Millennium Development Goal
MPFS	Master Plan for the Forestry Sector
MPSA	mineral production sharing agreement
NCIP	National Commission on Indigenous Peoples
NEFUG	National Federation of User Groups
NESDP	National Economic and Social Development Plan
NFP	National Forestry Programme (FAO)
NGO	non-governmental organization
NIA	National Irrigation Administration
NPC	National Power Cooperation
NR	Nepalese rupee (US\$ 1 = NR70)
NTFP	non-timber forest product
NWFP	North West Frontier Province
OFD	Orissa Forest Department
OP	Occupation Permit
PA	poverty alleviation
PACOS	Partners of Community Organizations
PAMB	Protected Area Management Board
PAS	protected area system
PASU	protected area supervisor
РС	people's committee
PCCCP	Provincial Committee of the Chinese Communist Party

PER	Project for Ecological Recovery
PES	payment(s) for environmental services
PF	Panchayat forest
PFD	Punjab Forest Department
PNOC	Philippine National Oil Company
РО	people's organization
РРС	Provincial People's Committee
PPF	Panchayat-protected forest
PSP	provincial spatial planning
RBC	Red Book Certificate
RECOFTC	Regional Community Forestry Training Centre for Asia and the Pacific
RFD	Royal Forest Department
RMP	resource management plan
SDC	Swiss Development Cooperation
SFD	Sabah Forestry Department
SFDP	Small Farmers Development Project
SFE	State forest enterprise
SFM	sustainable forest management
SFMLA	Sustainable Forest Management Licence Agreement
SIDA	Swedish International Development Agency
SIFMA	socialized industrial forest management agreement
SLUP	sustainable land-use planning
STK	Sor Tor Kor (national forest land allotment)
SWOT	strengths, weaknesses, opportunities and threats
TAO	Tambon Administrative Organization
TFPUK	timber forest product use permit
TFSMP	Thai Forestry Sector Master Plan
TLA	timber licence agreement
TNC	The Nature Conservancy
TUP	timber use permit

UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
VFC	village forest committee
VSS	Van Samrakshan Sammittee
WSC	watershed class

WWF World Wide Fund for Nature

Part 1 OVERVIEW

7.

Y

Introduction

Worldwide, about 1.6 billion people rely heavily on forest resources for their livelihoods, and an estimated 400 million are directly dependent on forest resources (World Bank, 2002). At the same time, the 2005 Forestry Resources Assessment (FAO, 2006) reports that deforestation is continuing at an alarmingly high rate, mainly through the conversion of forests into agricultural land. The net reduction in forest area for the period 2000 to 2005 is estimated at 7.3 million ha per year, with forests disappearing particularly rapidly in Africa and Latin America.

While the causes of deforestation are certainly multiple, there is increasing recognition that tenure of forest resources and forest land plays a role in sustainable forest management (SFM) (UNDP/UNEP/World Bank/WRI, 2005), and that security of tenure is one of the most important mechanisms to ensure accountability and control of forestry operations at the local level (FAO, 2005).

Current trends in privatization and community involvement in forest management are leading to rapid changes in resource tenure patterns and increasingly complex stakeholder relations. These changes have social, political and economic implications, which need to be monitored and assessed. To what extent does forest tenure – particularly recent tenure arrangements – influence land and resource use? Are secure tenure arrangements part of the solution to forest degradation and destruction?

According to work carried out by Forest Trends, the area of forests owned and administered by communities doubled in developing countries between 1985 and 2000, reaching 22 percent; this figure is expected to increase further (White and Martin, 2002). Although these estimates are the best so far, and are often adopted by the international community (e.g., the Center for International Forestry Research [CIFOR], Forest Trends 2003), the limited availability of appropriate and reliable data calls for careful interpretation and further work. Current forest laws still provide little scope for local people to play a meaningful part in the planning, management and allocation of forest resources (FAO, 2005).

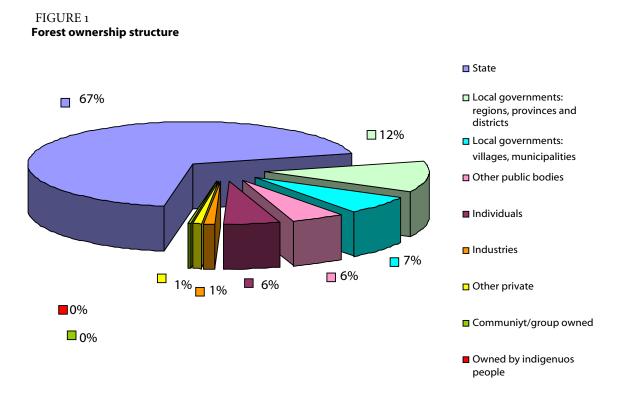
It is in this context that FAO, in collaboration with four partners2 in the Asia Forest Partnership, has developed a pilot study covering 17 countries in South and Southeast Asia. A number of initiatives to empower local communities, decentralize decision-making to local government units and increase private sector involvement in forest management have been taking place in this region. The aim of this study is to shape a clearer understanding of these trends and their impact on SFM and poverty alleviation (PA).

² The Nature Conservancy (TNC), Tropenbos, the Regional Community Forestry Training Centre for Asia and the Pacific (RECOFTC) and CIFOR.

Facts and figures about forest tenure in South and Southeast Asia

The study conducted by FAO and partners in South and Southeast Asia was based on an analysis of forest tenure according to two variables: the type of ownership, and the level of control of and access to resources. It aimed to take into account the complex combination of forest ownership – whether legally or customarily defined – and arrangements for the management and use of forest resources (see Annex 1 for definitions of the terminology used). Forest tenure determines who can use what resources, for how long and under what conditions.

The results of the survey of 17 countries3 confirm that the tenure system in forestry remains largely dominated by State control, although some important trends are emerging, albeit in limited areas.



Regarding different types of *forest ownership* (Figure 1), at least 92 percent of a total of about 365 million ha of forest is publicly owned, the majority of which (67 percent) is under the direct control of central governments. Private forests, which are mainly in Japan and the Republic of Korea, are more likely to be owned by individuals (accounting for 6 percent of total forest area) than by private industries (1 percent of the total). An insignificant percentage of forests is owned by local communities, groups and indigenous people.

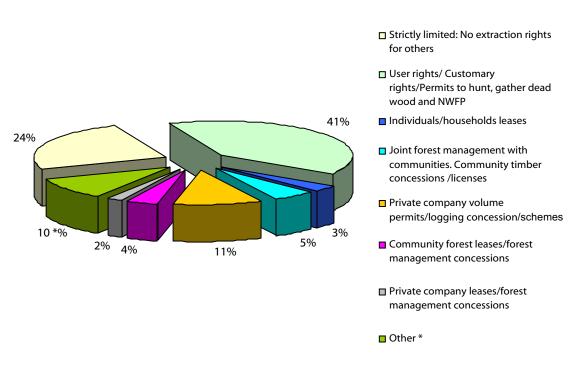
Regarding different *management categories* (Figure 2), 65 percent of publicly owned forests are managed directly and exclusively by the owner (central or local government). Although user rights for home consumption are granted in most (41 percent) of these forests, this category comprises

³ Brunei, Bhutan, Cambodia, China (Yunnan), India, Indonesia, Japan, Republic of Korea, Lao People's Democratic Republic, Malaysia (Sabah), Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand and Viet Nam.

mainly open-access, non-protected forests that are often left unmanaged owing to lack of government capacity. In Nepal, for example, government-managed forests administered by district forest offices (about 80 percent of total forests) are *de facto* not managed (Singh, Singh and Sinha, 2006).

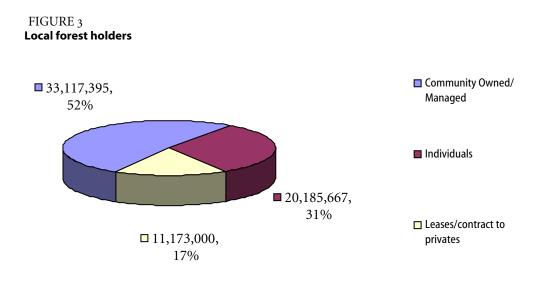
Figure 2 shows how agreements with limited devolution of management rights and responsibilities (such as joint forest management [JFM], community timber and private logging concessions) are prevailing over longer, more secure, tenure agreements (such as community forest management and private forest management concessions), regardless of whether they involve local communities, individual households or private companies. Local communities manage about 12 percent of public forests through either JFM agreements, longer-term community forestry (CF) agreements or individual/household leases, while 13 percent are granted to private companies, mainly through logging concessions. This percentage increases significantly if it includes about 30 million ha of production forest in Indonesia for which the status is not defined. This forest is likely to be assigned to new timber concessions.

FIGURE 2 Forest management categories in public forests



* About 30 million ha of production forest in Indonesia for which the status is not defined.

The forest area managed by local users increases to 18 percent of the total when all the forest that is either owned or managed by local forest holders, communities, user groups or individuals (about 65 million ha, see Figure 3) is included.



Total surface: 65 million ha

The survey highlighted two innovative trends: the allocation of forest land to private households in China and Viet Nam through modalities that are very close to a privatization process; and the establishment of long-term (100-year) forest management concessions – called Sustainable Forest Management License Agreements (SFMLAs) – in Sabah, Malaysia. Detailed data by country are available on the FAO forestry Web site.4

The significant role of local forest holders in forest management is confirmed by the figures presented by each country, even though it remains somewhat limited, fragile and variable among countries.

In order to understand the implications that different tenure systems have on SFM and PA, related mechanisms and issues have to be analysed, and the roles that these might play in enabling or preventing the effectiveness of a given tenure system have to be identified.

The transfer of rights and responsibilities needs to be qualified in terms of the accompanying security of tenure and management capacity in order fully to understand its impact. For example, private property might not necessarily entail the right to manage or even use resources (e.g., Pakistan), while some well-established long-term exclusive use rights (individual or communal) might be as secure as private, individually titled property (e.g., Viet Nam) (UNDP/UNEP/World Bank/WRI, 2005).

⁴ www.fao.org/forestry/site/33848/en.

The challenges of secure tenure

Security of tenure is recognized as a fundamental requirement to ensuring that resources are managed sustainably. Duration, assurance, robustness and exclusivity have been identified as the main legal elements for secure tenure arrangements. This implies that tenure holders should have assurance that they will be able to benefit from the returns on their investments without interference. Any strategy to support SFM and enhance the PA role of forests should prioritize the clarification of tenure rights and mitigate factors that impinge on poor people's access to forest resources (Wiersum and Ros-Tonen, 2005).

Evaluation of the effectiveness of various tenure systems in South and Southeast Asia identified numerous constraints that undermine the security of forest tenure. Although situations and contexts differ from country to country, these constraints are related to the main issues described in the following subsections.

FRAGILITY OF GRANTED RIGHTS

Forest tenure reforms are often implemented when overall State management has failed. Such reforms aim to reverse the results of unsuccessful forest management by increasing the participation of local populations or the private sector, recognizing local customary law and allocating management responsibilities to local holders. However, for various reasons, the reforms are often not accompanied by adequate security of tenure, such as clear, formal and long-term recognition of rights and responsibilities in legislation and regulations.

In spite of their achievements, some of the most promising tenure models – such as CF in India-Orissa and the Adat (customary law) system in Indonesia – are not formally recognized and supported by legislation. This lack of institutionalization makes these approaches very vulnerable to policy changes.

The two hills system, which has characterized land reform in China since the 1980s, has contributed a lot to both SFM and PA for local communities, especially in comparison with the prereform situation. However, it has been unable to improve local conditions further because of confusions regarding ownership and responsibilities (Box 1). As a result, some of the forestry sector's important potential remains untapped.

Long-standing lack of clarity over ownership and rights over land, particularly regarding the traditional rights of local communities over land and natural resources, has caused the escalation of conflicts in Indonesia, especially since decentralization (Simorangkir and Sardjono, 2006).

Rights also become fragile when they are subject to restrictive time limits or the decision-making power of administrations. The sudden and indefinite suspension of harvesting rights for community-based management agreements in the Philippines, and the introduction of quota systems in China are good examples of governments making unilateral and indiscriminate (in that no distinction is made between managed and non-managed forests) decisions in response to forest degradation. Recent logging bans in South and Southeast Asia have shown the forestry sector's tendency to react to shocks in extreme ways, thereby weakening tenure rights further.

BOX 1 China's two hills system: who is the real owner?

Since the early 1980s, China's forestry reforms – known as the two hills system – aim to define and clarify forest ownership rights, among other objectives. The system involves contracts for forestry land under three new management arrangements: household, collective and contracted. Recent research on forest tenure has highlighted some important shortcomings of this reform, including increased deforestation and illegal cutting, and these can be attributed to the frequent shifting of forest policies and a lack of tenure security. Laws regarding forest tenure do not distinguish between forest land and forests, so ownership remains ambiguous. The unclear definition leads to conflicts over benefit sharing, particularly in household-managed forests, and farmers frequently complain that "they have no right to decide how to dispose of their land", including forests, and that they lack proper access to information.

The responsibilities of collective ownership are also unclear, because the definition of collective varies over time and among provinces.

Lesson: Unclear and unstable rights lead to unsustainable forest management.

STATE CONTROL IN DISGUISE

Despite the official transfer of tenure rights to other stakeholders, in some cases the State retains predominant or even overall control of forest management activities, including harvesting and marketing. This can happen not only when forests are managed through JFM agreements, and therefore remain public, but also in privately owned forests, which can be sold and transferred by the owner(s).

In India-Orissa the Forestry Department retains substantial control over JFM forestry activities and benefit sharing, so the impact of JFM on PA and empowerment are very limited.

In Thailand, the government, through the Royal Forest Department and the Department of National Parks, Wildlife and Plant Conservation, retains its legislative control over community forests, although some community forests have been managed by villagers for more than 15 years.

In Nepal, Community Forest User Groups (CFUGs) are required to prepare forest inventories of the growing stock, standing forest and allowable cut before the forest is handed over to them and when their management agreements are being renewed (every five years). This is a technically demanding and time-consuming job that the CFUGs cannot do themselves and often cannot afford to pay for, creating delays in the handing-over process and the renewal of existing agreements. This has direct negative impacts on harvesting, extraction and the sale of forest products, which ultimately affect the community development and PA activities of the CFUGs.

In Pakistan private "owners", either individual or communal, have no management responsibilities (Box 2).

Figures that show increased JFM/CF agreements or trends towards privatization should therefore be assessed carefully in terms of the effectiveness of the transferred rights.

BOX 2 Pakistan: private property without rights

The forest tenure system in Pakistan varies from region to region and foresees the existence of private forests, either owned by individuals or communal (Guzara forests). These forests are, however, directly managed by the Forest Department (FD) through working plans; owners have to seek FD approval for harvesting, marketing and daily usage of timber and fuelwood.

Resources, especially in Guzara forests, continue to degrade, despite the overall control of the FD. Local farmers are not interested in managing their forests because they have absolutely no responsibility to do so.

A logging ban on commercial harvesting in private forests, even those directly managed by the FD, was imposed in 1992.

Lesson: Ownership without rights leads to degradation.

SMALL TREES FOR SMALL PEOPLE

The quality of the resources allocated to local holders also needs to be taken into consideration when assessing the implications on SFM and PA. The condition of the resources at the moment of the transfer obviously plays a significant role in the potential of those resources to provide the necessary incentives for sustainable management. The study shows that – with some exceptions such as community-based forest management (CBFM) in the Philippines – most of the forests handed over for joint management or long-term agreements are degraded and have no or little commercial value.

This is the case in Viet Nam and China, where individuals have received mainly low- to mediumquality forests through a forest devolution programme. In Sabah, Malaysia, many forests for CF within areas managed under SFMLAs are in poor condition. In Nepal, leasehold forests are limited to very degraded forests and bare land that require intensive management and heavy inputs (Box 3).

In both Nepal and Viet Nam, despite the poor forest conditions, new owners and holders have demonstrated an ability to derive economic benefits while improving forest management (see the section on Secure tenure for PA in the following chapter). However, in Nepal, where the leasehold forestry programme continues to be subsidized by donors, the sustainability of the approach remains questionable. In Sabah, Malaysia, there has not yet been any significant evidence of success; the poor quality of the forest is a major handicap to PA and SFM, and unless adequate support is provided the real impact of handing over degraded land is negligible in the early years. The failure of some tenure arrangements does not necessarily imply that they are inadequate, but rather that insufficient support and incentives were provided to rehabilitate the forest cover.

BOX 3

Nepal: degraded forest for leaseholders

Nepal's leasehold forestry programme was developed to alleviate the poverty of households living close to degraded forests and to facilitate ecorestoration.

Despite its limited coverage, the programme has proved very successful in terms of both PA and improving forest conditions (see Success story 4). However, some question this success because the programme requires heavy inputs and support from external projects; the allocated forest resources are degraded and so need intensive and relatively expensive forest management and capacity building.

The programme has developed a strong sense of ownership, which is a principal driving force to forest management.

Lesson: Sustainability cannot be expected when resources are degraded.

NATIONAL LAND POLICY AND CONSTRAINING OBLIGATIONS

Even after 20 years of SFM efforts and an increasing awareness of forestry's role in PA, the specific role of tenure in these processes is still unrecognized. This lack becomes particularly evident when analysing current policies and legal frameworks, which are still inadequate in addressing the rights that contribute to security of forest tenure.

In some extreme situations, the legislative and regulatory framework is obsolete and does not address today's needs and challenges. In Pakistan, for example, there is a complex and unharmonized system of laws to regulate a feudalistic tenure structure. Despite some trends, such as the new Forest Ordinance 2000 that gives legal cover to JFM in North Western Frontier Province (NWFP), so far the government has given limited importance to this issue and there is a lack of adequate data on forest landownership and tenure. People have no access to data and information about FD activities on behalf of communities (Nasir, 2006). In such an atmosphere of mutual distrust, the absence of tenure reform has led to intensive forest degradation.

BOX 4 Sabah, Malaysia: Occupation Permits

In Sabah, a major concern is the lack of recognition and protection for indigenous rights over land and natural resources, which are vital for the survival and development of indigenous communities. In order to formalize the presence of communities in forest reserves, the Sabah Forestry Department (SFD) has recently introduced the use of Occupation Permits (OPs) available under the forestry laws. The permits cost \$M250 (US\$68) per hectare per year. Communities participate in decision-making regarding the duration of and total area covered by the permits, but the ultimate decision is made by SFD. This is a positive step by SFD to acknowledge forest communities with traditional claims to remain on their land. However procedures for land title acquisitions through the State legal system are complex, lengthy and lack transparency. The provisions for titles are also not always wholly acceptable to indigenous people, who consider the land theirs already. In light of all of these factors, land titling has never been widely used to demarcate community boundaries and/or legalize community forests.

Lesson: Difficult procedures hamper the acquisition of rights.

Evidence from other countries indicates that land policies often limit or prevent the creation and consolidation of new tenure systems, especially when these are based on the recognition of customary rights, including those of nomadic groups (Box 4).

Global trends such as decentralization might also lead to increasingly fragile tenure rights, such as in Indonesia. In addition to a "decentralization of corruption", which can occur as local governments obtain greater control over the forestry sector and timber concessions, the decentralization process has weakened customary rights by creating confusion over new laws that have decentralized some aspects of the State's jurisdiction over lands, forests and other natural resources to district authorities (Simorangkir and Sardjono, 2006).

Examples show that very constrictive national policies and legislation can affect the efficiency of a given tenure system, such as the logging bans in the Philippines and Pakistan, or the introduction of quotas in China. Forest legislation often penalizes local owners or holders through overregulation. In the Philippines, for example, communities that have obtained communal tenure agreements usually protect their areas from forest fires, poaching and slash-and-burn practices. However, the overregulation of these communities' resource use rights and the nationwide cancellation of these rights have instilled fear, uncertainty and suspicion of government and the CBFM strategy. Three consecutive nationwide suspensions of CBFM harvesting rights have eroded most communities' motivation and commitment to protect and manage their forests (Guiang and Castillo, 2006).

Tenure: a founding block for sustainable forest management and poverty alleviation

DOES SECURE OWNERSHIP LEAD TO SUSTAINABLE FOREST MANAGEMENT?

How does tenure affect SFM? Is there evidence that secure tenure rights have contributed positively to forest management and conservation, or that a particular tenure system is more effective than others?

When State forest management works

State management remains the best option in some circumstances, especially for national parks and protection forests. In India-Meghalaya, State-owned forests are the best funded and managed forests (Dasgupta and Symlich, 2006). In Viet Nam, State forests are probably the best of all tenure systems in terms of forest management, in areas where budget is available (Nguyen, 2006). In India-Orissa, areas under JFM are characterized by substantial FD control over activities and benefit sharing, and represent a successful example in terms of SFM (Singh, Singh and Sinha, 2006). All of these successes depend on the availability of sufficient funds and capacities.

Other systems are efficient, particularly those based on customary settings and community initiative, which are sometimes the only systems in place.

When community forestry works

When rights are granted on a long-term basis and are clearly defined, CF and JFM have had positive effects for SFM and the regeneration of degraded lands (Success story 1)

SUCCESS STORY 1 India and Nepal: a long tradition in CBFM

CF in Nepal has a long history, and is recognized as one of the best and most successful examples of CBFM. The 1993 Forest Act makes clear provisions regarding rights and responsibilities related to CF. Community forests represent about 20 percent of Nepal's total forest area; since the beginning of the programme, forest conditions have improved considerably and degradation has been prevented (Singh, Singh and Sinha, 2006). CF agreements have no time limit, but are managed on the basis of operational plans that have to be renewed every five years. The programme benefits from a strong strategy and many years of capacity building, but its success is also due to its building on existing traditional structures (Singh, personal communication).

JFM in India-Orissa is another case of the devolution of management responsibilities proving to be successful in terms of SFM. This programme has helped the regeneration of degraded forests, and represents a first step towards collaboration between communities and FDs. However, the programmes's main limitations are its heavy dependency on project funding and the high level of control exercised by the State administration. These raise the question of sustainability, unless the JFM concept can evolve towards more shared decision-making.

Private smallholders: a growing reality

China and Viet Nam have made one of the most innovative and progressive changes in forest tenure: the allocation of forest land to individual smallholders. About 20 percent of forest land in Yunnan province (China) and 23 percent in Viet Nam (FAO Forestry Web site, 2006) are now directly managed by individuals. In Viet Nam land is allocated through Red Book Certificates (RBCs), which provide long-term or indefinite access and use rights. Although the forests allocated are of medium and low quality, individual owners have proved to be more effective forest managers than organizational owners (e.g., private companies) (Success story 2).

SUCCESS STORY 2 Private smallholders in Viet Nam: a new approach to sustainable forest management and poverty alleviation

Private property in Viet Nam includes forests managed by individual households and joint venture enterprises. Under this arrangement, forest is allocated to an owner for long-term (50 years, renewable) management. Most forest owners under this arrangement are entitled to a legal land use certificate (the RBC) for the forest area they are granted. By law, the RBC is the highest legal document certifying ownership of a piece of (forest) land. It represents legal recognition of all rights and responsibilities as regulated by current land law. RBC holders have the right to exchange, transfer, lease, inherit and mortgage their RBCs and to use their forests in joint production and commercialization activities. Owners of forest under this arrangement are required to pay taxes.

Under this private property scheme, forest owners are obliged to protect their forest allocations against unauthorized use and to plant trees where needed; they have the right to utilize the forest to maximize their profits. According to Nguyen (2006), local households have generally achieved (or have the potential to achieve) higher economic benefits from forest resources since the accession to private property: people have developed the forest resources on their allocated land. As forest plantation takes at least five to seven years, even for fast-growing trees, local people's investments in tree planting since rights were devolved reflect their confidence in tenure security. Forest devolution is giving people a chance to improve their livelihoods in the long term, while also improving forest conditions.

Local governments

The case of local government units (LGUs) in the Philippines is a particularly good illustration of how the decentralization and devolution of management responsibilities, control and monitoring to local governments can be particularly successful, as long as it receives adequate support, especially in capacity building (Success story 3 and Box 6).

SUCCESS STORY 3 Local government in the Philippines: an untapped potential

Although it is still too early to assess LGUs' role in protecting and managing forest lands, experience to date has shown that – with the right mix of political will, resource allocation and long-term perspective – they could make a difference in stabilizing tenure rights, claims and occupations in forest lands under co-management agreements; help to resolve claim and boundary conflicts, which tend to reduce productivity and focus; and mobilize local and available grant resources for forest development activities.

According to Guiang and Castillo (2006), LGUs have the highest performance for SFM, but the very limited surface they cover means that this needs further investigation. Nonetheless, LGUs have demonstrated greater flexibility in allocating financial resources to support social infrastructure, extension services and set-up capital for community enterprises.

SECURE TENURE FOR POVERTY ALLEVIATION

Communities, income generation and equity

Analysis of the case studies has shown that CBFM often has a comparative advantage over other tenure systems regarding PA, particularly in addressing the needs of the poorest and promoting equity and empowerment.

SUCCESS STORY 4 Leasehold forests in Nepal: created to address poverty

Unlike CF, leasehold forests (LHFs) in Nepal have been created expressly to alleviate poverty in households that are close to degraded forest areas. LHFs also have ecorestoration and rehabilitation roles, as most of them are established in degraded forest areas (Box 3). In LHFs, the benefits are therefore generated later than they are in CF. The more integrated LHF approach has led to reductions in food deficiency: all benefits go to individual families, without having to share them with the government, and forest products are available to LHF beneficiaries throughout the year.

The close linkages between the benefits obtained and the ecorestoration of degraded leasehold areas probably contribute to the success of this system, together with a strong sense of ownership among leasehold groups. However, the very small area – 5 000 ha – of implementation and the high financial and human inputs required call for careful interpretation of results.

SUCCESS STORY 5 Common property in Viet Nam: reaching the poorest

In Viet Nam, common property arrangements are found in forest managed by collectives. Owner groups are entitled to have RBCs for the areas of forest allocated to them. Legal recognition of this form of management arrangement has recently emerged as an important issue in forest management in Viet Nam. At present, only a small area of forest is under common property arrangements, but the potential for the future is promising.

Among the various tenure systems in Viet Nam, the management of forest as common property appears to address PA best. Communities have demonstrated the ability to distribute benefits among their members, including the poorest. Common property is sometimes a better system than private property for managing forest because of village regulations that specify the rights and responsibilities of members and exclude unauthorized loggers.

SUCCESS STORY 6 Equity through tenure: CBFM in the Philippines

The allocation of forests to communities through CBFM agreements has made it possible to transfer natural resource assets to marginalized groups in response to demands for social justice and PA; CBFM addresses the equity issue in the Philippines. Among the different tenure systems, CBFM seems to have the greatest potential for supporting livelihoods, providing farm-level incentives to adopt agroforestry and tree farm technologies, and raising marginalized communities out of extreme poverty and hopelessness. The increasing participation and involvement of provincial and municipal LGUs in CBFM seem promising.

However, so far the real potential of this system has yet to emerge from several constraints. As well as the limited capacities of communities to absorb, learn and respond to their obligations as forest managers, highly restricted access to timber and non-timber as sources of revenue risk causing the gradual abandonment of most forest lands over time.

Plantations, the positive and the negative

Forest plantations, particularly for production purposes, are an increasing feature of forestry in East and Southeast Asia, where they represent about 7 percent of total forest area (FAO, 2006). China, Indonesia, Malaysia and Thailand are among the countries where the most plantations are found.

Forest plantations are usually associated with clearer and more secure tenure than natural forests. In addition, plantations are closely associated with income generation and employment (Box 5).

When established in consultation with local stakeholders and within an adequate business environment, plantations provide these expected benefits and contribute to PA. However, forest plantations in the Southeast Asia region, especially for oil-palm, have been the cause of rapid forest degradation (such as in Malaysia and Indonesia) and conflict among stakeholders (Box 6).

BOX 5

Private plantations in the Philippines: a potential source of income

In order to reverse the decline of the forest industry, which was highly dependent on natural forests as a source of raw materials, the Philippines is currently looking at forest plantations as a sunrise industry for the forestry sector. All over the country, there are highly suitable areas for the establishment of plantations for short, medium and long rotations. However, the private sector has not been as proactive as expected in developing forest plantations because the overall business environment, regulations and incentives are perceived as unfavourable. Given its technical, organizational, entrepreneurial and financial capacities, the private sector could still change the country's mind-set with respect to forest production. In particular, plantations have high potential to generate employment and community enterprises.

BOX 6

Oil-palm plantations: threat to natural forest or potential for PA in Indonesia?

During the 1990s, forest and land conversion became more intensive with the development of oil-palm plantations. These plantations were justified by oil-palm's ecological suitability and the economic business alternatives it offered in the face of decreasing forest resources. By the end of 2000, about 4 million ha of new oil-palm plantations had been established across Indonesia.

In the last decade, local communities have begun to dominate the development and management of plantations. Increasing community interest in this smallholder scheme is promoted by the possibility for individuals to claim land that was formerly declared State-owned (forest) lands, and by assured incomes.

However, the expansion of oil-palm plantations has had two negative consequences. First, natural forest has been removed to make way for increasing palm plantation surface. Deforestation is also caused when the establishment of oil-palm plantations is used to justify the obtaining of concessions to exploit remaining residual stands of natural forests. Second, unclear land occupation rights under traditional law have led to conflicts among villages, and some families have been unwilling to enter the plantation programme for fear of losing their traditional (but not officially recognized) rights to land.

ROLE OF TRADITIONAL LAWS AND SELF-INITIATED ACTIVITIES

Informal tenure systems that regulate natural resource use and access, including in forests, are present to some extent throughout South and Southeast Asia. In some cases, legal tenure systems have attempted to recognize customary rights, such as through the use of OPs under the forestry laws in Sabah. However, most traditional systems that overlap with official tenure systems are completely disregarded by law, leading to severe and unresolved conflicts. In Pakistan, for example, customary law is widely practised by forest dwelling/-dependent communities all over the country, but is frequently in conflict with the formal laws applied by the forest administration.

Nonetheless, there is evidence that in a number of situations the existence of strong traditional customary rights has had positive implications, particularly on conservation and SFM (Molnar, Scherr and Khare, 2004)

Traditional customary rights are particularly effective where legislation does not provide secure tenure rights and the forest administration is weak or absent. In Indonesia, for example, Adat-based management has demonstrated a positive impact on not only SFM but also PA through increased income generation (Deschamps and Hartman, 2006) (Success story 7).

SUCCESS STORY 7 Indonesia: Adat to support PA

Adat forms the basis for forest tenure in long-established communities. Created by the community and administered by a local council of elders, it defines rights and responsibilities and codifies legal sanctions. Regarding SFM and the conservation of forest resources, in the absence of secure tenure rights, the creation of collaborative management structures that are supported by customary law can foster a sense of community ownership and engender a commitment to conservation. In particular, SFM based on traditional land-use systems has the potential to provide social and economic benefits at a level equal or superior to other land-use systems in nearby rural areas. The socio-economic and ecological conditions of forest-based communities utilizing customary law can be better than those of communities with economies based primarily on agricultural production.

Lesson: In the absence of State control, collaborative management with customary law can work, even when there is no secure tenure.

Similarly promising self-initiatives that regulate tenure rights, including access and management, have been observed in India-Orissa, but these have still to be analysed in depth. These CF initiatives are contributing to PA, especially aspects of social welfare, health and education, although they are not formally recognized by the legislation and therefore insecure and fragile (Success story 8).

SUCCESS STORY 8 India-Orissa: informal tenure systems

CF is one of the tenure system in place in India-Orissa, along with national parks, protected and reserve forests, private forest and JFM. However, unlike the others, CF has no formal or legal basis, but is purely self-initiated.

The major weakness of this system is the very limited scale of its application. Nonetheless, CF management is a bold experiment with a promising future. The most remarkable aspect of CF is that it emerges from the community's self-initiated efforts to meet its forest-related needs in response to changing socio-ecological conditions, and its desire to cope with uncertainties and livelihood insecurity. As well as good results in forest management, including the regeneration of forest canopy, CF has positive effects in improving the livelihoods of local communities, especially when it evolves from the village to the federation level. This is owing to confidence in the efficacy of its institutions and enhanced bargaining power.

A large number of informal community forests have been established throughout Thailand, and are functioning despite having no legal recognition. Enactment of the Community Forest Act, which is supposed to provide the necessary legal framework, has been delayed for many years mainly because of uncertainties about the natural resource decentralization scheme (Lakanavichian, 2006).

SUCCESS STORY 9

Thailand: increasing informal CF tenure systems to protect forest resources

CF has existed throughout the history of village settlement in Thailand, but it was not called CF. Although CF has taken many forms and served various functions in Thailand, the Community Forestry Act of 1992 has been under development for more than a decade and has still to be finalized. Villagers, NGOs and academics began informal discussions of issues related to CF policy, legislation and implementation in 1990.

Nationwide, at least four major types of CF can be identified: (1) newly organized community protected forests, which have emerged as a response to illegal logging; (2) monastery (*wat*) forests, which are restricted areas where plants and animals are protected; (3) wetland forests, which communities protect as breeding grounds for fish, frogs and crabs, and as a source of bamboo, timber and fuelwood; and (4) cultural forests, which have economic, historical or religious significance.

Despite the lack of a comprehensive legislation, the number of community forests has been constantly increasing since 1985.

HOW CAN TENURE ARRANGEMENTS BE CONSOLIDATED?

It is difficult to isolate tenure from other enabling or constraining factors that have implications for SFM and PA. However, the cases analysed in this study show clearly that secure forest tenure is fundamental for effective forest management, and tenure security has to occur in conjunction with other requirements.

Capacity to exercise rights

The taking over of responsibilities always requires the capacity to fulfil those responsibilities. The granting of tenure rights and management responsibilities to households, the private sector and local governments needs to be accompanied by capacity building to exercise the rights and responsibilities acquired. The following capacity building requirements have been identified in the case studies:

- awareness raising of concerned stakeholders about their rights and how they can exercise them, as well as capacity building to retain these rights and minimize the risk of elite groups becoming dominant (Box 7);
- the creation of management capacities, including technical, financial and organizational aspects; in the Philippines, for example, the limited success of CBFM initiatives is partially owing to the limited capacities of local holders; resource managers need a long-term strategy for capacity building, coaching, mentoring and follow-up (Guiang and Castillo, 2006);
- strengthening capacities, in particular of central and local forest administration, to support local holders; this crucial aspect is often underestimated and is not implemented because of the limited resources available for forest administration (Box 8).

BOX 7 Pakistan: the prevailing interest of timber traders

In some protected forest of North Western Frontier Province (NWFP) in Pakistan, the rights of local communities to receive shares of the proceeds of timber sales have often been diverted by powerful timber traders who purchase the rights of poor communities many years before they prepare their working plans. In response to growing public dissatisfaction with this system of rights sale and purchase, the NWFP government passed legislation in 2002 that makes it compulsory for the original right holder to be present when royalties are distributed to the current right holder.

Nepal: community forestry captured by elite groups

In CF, elite groups who hold key posts in executive committees get most of the benefits and opportunities. The active participation of users, especially the poor, disadvantaged groups and women, is difficult to achieve, particularly in decision-making processes and benefit sharing. The monopolization of power by local elite groups is summed up by the term "committee forestry", which is sometime used instead of "community forestry".

BOX 8

Sabah and the Philippines: when support from and for the State is missing

In the Philippines, LGUs can take more active roles in tenure assessment, the control of illegal logging, enforcement, the promotion of investment in forest lands, and assistance to communities in developing community-based enterprises and improving their livelihoods. However, achievement of these roles depends greatly on the assistance that LGUs obtain from the Department of Environment and Natural Resources (through leaders and key technical staff) to protect and manage their forest lands effectively, especially those that are under co-management agreements such as communal forests and watersheds.

In Sabah, Malaysia, the State created the SFMLA in 1997. This is a form of long-term concession, and SFMLAs now cover about 2 million ha of forest. In SFMLAs, the responsibility for SFM is shared between the State Forest Department (SFD) and the private sector. SFD is expected to focus on training the licensee's personnel, preparing guidance for the licensee and continuously improving the technologies and skills needed for SFM. SFD staff monitor the performance of SFMLA companies, which implement forest management plans approved by SFD. These plans include silviculture, rehabilitation and the development of CF initiatives on SMFLA land. However, state forestry personnel have limited capacity in professional forestry, and there are too few professional foresters among the field staff to monitor harvest planning and current logging activities.

The direct consequence of this is that after eight years of implementation, no meaningful improvement in SFM has been achieved, except in forests where SFD has put certification schemes in place. This lack of improvement is compounded by the licence holders' search for immediate and short-term profits. However SFMLAs have contributed to stopping the gazettement of forests to create oil-palm plantations, which constituted a massive threat to forests since the 1990s.

Lesson: Under any institutional arrangement, tenure without management capacity is likely to lead to unsustainable forest management.

Supportive framework

The establishment of a supportive framework within the forestry sector is a first step towards SFM, but the sustainability - and more specifically the economic sustainability - of forest management

also depends greatly on the institutional framework beyond the forestry sector. Among the incentives and other requirements for realizing the potential of sound tenure systems are:

- improved access to markets and marketing systems to offset remoteness from processing centres and the inefficient transport that results from the poor road infrastructure of most forested areas (e.g., CF in Sabah, Malaysia and the Philippines);
- economic incentives through appropriate tax system reforms that encourage investment in the sector, particularly for smallholders (e.g., China freehold hills);
- incentives for development and investment from the private sector, particularly in the first phases of activities when financial inputs are required (e.g., plantations in the Philippines and Forest Management Units in Sabah, Malaysia);
- funds with which to develop and implement management plans as required by law, and/or the simplification of management planning requirements; in the Philippines, for example, only 30 percent of CBFM has approved management plans because of the lack of funds and capacity;
- the creation and implementation of an appropriate planning and monitoring system for the better allocation of human and financial resources and to avoid unfair competition from illegal and unsustainable use of forest resources.

In Sabah, Malaysia, the effectiveness of SFMLA is debatable. However, good results emerged in some areas where a certification process is in place, showing that forest management would probably benefit from the existence of a verification/monitoring system exercised by a third party (Toh and Grace, 2006). In China, the partial failure of the two hills system reform, which resulted in unsustainable forest management, is a result of factors that include a failure to identify and address shortcomings in the reform owing to a lack of monitoring and evaluation systems for policy implementation, especially at the local level (Zheng, 2006).

It should be noted, however, that the emergence of new legal mechanisms to support greater forest tenure rights has not always resulted in more robust rights in practice. Where political, social, economic and ecological conditions do not motivate and sustain local management, a supportive legal framework might not make any difference (FAO, 2005).

Supporting forest tenure reform

The forestry sector is beset by constraints, which are the underlying causes of forest degradation. The data and case studies used in this study highlight the fundamental importance of secure tenure rights and the necessary capacity to exercise those rights. Forest tenure in South and Southeast Asia still seems far from providing the sort of incentives that are needed for SFM and increased contribution to PA for the following reasons:

- The area of forests where secure rights for local stakeholders have been devolved remains extremely small. Unclear forest tenure constrains SFM in many countries.
- Current policies and legal frameworks are still largely inadequate to address the security of tenure rights.
- The forestry sector is characterized by an undiversified and poorly adapted system of tenure arrangements, and is slow to adapt to current trends such as decentralization and greater stakeholder participation. The sector also tends to react to shocks in extreme ways, such as logging bans, which further weaken tenure rights.
- The roles, responsibilities and rights of many resource users and managers are still only vaguely defined.
- Customary user rights are generally unrecognized or inadequately recognized.
- Tenure holders need strengthened support and capacity to manage and use forests sustainably.

Secure tenure has much potential to contribute to solving forest degradation and destruction. If this potential is to be realized, far greater emphasis should be given to designing and adapting more effective tenure systems in support of local users, particularly disadvantaged groups, and to providing the necessary supportive legislation. Experience demonstrates that security of tenure is a necessary but not sufficient condition for effective forest management. The devolution of management responsibilities in a weak institutional framework is bound to fail. Ongoing and future forest tenure reforms need to address the following priority areas.

Provide clear and secure forest tenure

Regardless of the type of tenure system in place, whenever tenure rights are not secured and ambiguous situations arise, SFM is under threat. Clarity of tenure is a strong incentive for SFM as it guarantees benefits from investments made and minimizes conflicts.

Move forest ownership from single (State) ownership to more diversified tenure

State ownership and management dominate forest tenure. A more diversified tenure system could be a valid resource for better forest management, particularly in situations where State capacities have been demonstrated to be weak.

Acknowledge customary management systems

One of the recurrent elements in the cases analysed is the lack of recognition for community or indigenous management systems. As stressed by FAO (2005) disregarding traditional and customary rights always leads to conflict, lack of interest in long-term management versus short-term immediate benefits, and illegal activities. New and more diversified tenure systems should officially acknowledge the existence of customary management systems, including those of nomadic people.

Enhance tenure holders' capacity to exercise their rights and manage forest resources sustainably

Capacity building is probably the most important enabling factor that makes the benefits of a diversified tenure system available.

Support disadvantaged groups (to address poverty)

Some of the tenure systems analysed have clear and direct implications for PA and are particularly advantageous for the poorest. However, forests can provide substantial support to PA only when specific pro-poor policies are developed and tenure systems (including rights, management and monitoring requirements, and support systems such as taxation) are designed for less advantaged groups. Tenure itself does not guarantee implications for PA, but it does provide the fundamental basis.

Give poor people tenure over valuable resources

The resources and forests over which rural households are granted rights are often of low quality, or are even bare land. While there are examples of local communities improving the condition of marginal forests – and their own incomes – there is no evidence to support the view that the same communities would manage valuable resources badly. Any PA strategy based on forest resources should take this aspect into consideration in order to improve outcomes.

Conclusion

Clear, secure and devolved forest tenure is a fundamental requirement for SFM and for improving the role of forests in PA. Although most rural poor people have some access to land and forests, they typically remain poor because their rights to the land are weak and their tenure is insecure (Bruce, 2004). This is particularly true regarding the three dimensions of PA: opportunity, security and empowerment (World Bank, 2000). However, most current policies and legal frameworks continue to limit access to natural resources. The forestry sector appears to have made less progress on this issue than other natural resource sectors, and still provides a largely inadequate framework to address the security of tenure rights.

In South and Southeast Asia, evidence – albeit at a limited scale – shows that tenure arrangements that provide tangible rights to local users are conducive to SFM and livelihood improvement. Most examples reviewed in the case studies indicate that unclear and insecure forest tenure results in the vague delineation of roles, responsibilities and rights for the many resource users and managers, which clearly contributes to unsustainable forest management. In addition, inequitable and inappropriate tenure arrangements generally trigger conflict, bad governance, weak law enforcement, lack of confidence in institutions, and limited interest in forestry, thus ultimately contributing further to unsustainable forest management and wasted potential for PA.

In recent decades, the problem of forest degradation and destruction in developing countries has been addressed through various technical solutions or attempts to pass responsibilities on to local communities, without sufficient attention to the overall institutional framework and with an inadequate understanding of the root cause of the problem. Assessment of these past and ongoing efforts points to the tenure issue as the root cause of poor performance in the forestry sector. Why has forest tenure received such slight attention when agricultural land reform has been on the agenda for a long time? If it is accepted that farmers should have full control over their farms and the products they cultivate, why should the situation be different for private owners or communities managing forests? Given that the returns on investment are far longer-term in forestry than in agriculture, why are tenure rights in forestry much weaker than those in agriculture? The answer to these questions probably lies in the historical context of forestry, which considered forest and timber to be resources of national importance – as are agricultural resources too – and because tenure issues have implications that reach far beyond the forestry sector.

Today there is little disagreement on the forestry sector's need to continue and enhance its reform process, as encouraged by national forest programmes. The Intergovernmental Panel on Forests (IPF) principles that guide the formulation and implementation of national forest programmes explicitly stress the need for the participation of and partnerships with all stakeholders in a shared effort to achieve SFM. Forest tenure should receive the greatest attention, despite its complexity, if these reforms are to succeed.

There is therefore a great need to improve understanding of the implications of forest tenure, stimulate national and international debates on the subject, and raise the awareness of policy-makers, providing them with the arguments and evidence that can stimulate an in-depth reform of the forest tenure system.

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ANNEX 1: TERMINOLOGY

The following definitions of property and ownership terminology were used in the case studies (Bruce, 1998; FAO, 2003).

Commons: Land or other natural resources used simultaneously or serially by the members of a community.

Co-ownership: Joint ownership by more than one legal person.

Custom: An action or practice that has taken place since time immemorial and that is not regulated by the State or other authority outside the social group.

Customary land: Land where uses are regulated by customary, unwritten practice, rather than written, codified law.

Decentralization: The transfer of both decision-making authority and payment responsibility to lower levels of government. Although still involving the government, it provides a stronger role for local bodies, which are presumed to have greater accountability to the local populace, including both users of the resource and others who live in the area.

Deconcentration: The transfer of decision-making authority to lower-level units of a bureaucracy or government line agency. It represents less of a change than either decentralization or devolution, because authority remains with the same types of institution and accountability still runs upwards to the central government, which is sometimes taken to represent society at large.

Devolution: The transfer of rights and responsibilities to user groups at the local level. User groups are accountable to their memberships, who are usually those who depend on the resource.

Forest tenure: A broad concept that includes ownership, tenancy and other arrangements for the use of forests. In the context of these case studies, forest tenure is the combination of legally or customarily defined forest ownership rights and arrangements for the management and use of forest resources. Forest tenure determines who can use what resource, for how long and under what conditions.

The necessary components of forest tenure include excludability, duration, assurance and robustness. Excludability allows those with rights to a particular piece of land to exclude those without rights. Duration refers to the period for which the right is granted. Right holders, such as local communities or farm households, only feel secure when the time horizon is sufficient to allow them to reap the benefits of investments. An institutional framework capable of enforcing rights provides assurance. Robustness refers to the number and strength of rights that can be possessed (Knox McCulloch, Meinzen-Dick and Hazell, 1998).

Privatization: Broadly, the transfer from the public sector to private groups or individuals.

Property: A set of rights and responsibilities concerning a thing and recognized by an official title.

Private property: Property held by private people, natural or legal.

Public property: Property held by any level of government.

Common property: A commons from which a community can exclude non-members and over which it controls use.

ANNEX 2: CATEGORIES AND DEFINITIONS

1	Public			
1.1	State	Forests owned by national and state governments, or by government-owned institutions or corporations.		
1.2	Local governments: regional, provincial and district-level	Forests owned by regional, provincial or district governments.		
1.3	Local governments: cities, municipalities, villages and other local levels of administration	Forests belonging to cities, municipalities, villages and communes. These administrative units are locally self-governed and managed by a local forest administration with no or little public involvement. These forests should not be confused with community- or group- owned forests.		
1.4	Other public bodies	To be specified by the resource person.		
2	Private	Rights associated with private property are usually: exclusiveness, duration (usually unlimited) and transferability.		
2.1	Individual	Forests owned by individuals, households and families.		
2.2	Industries	Forests owned by private forest enterprises or industries.		
2.3	Other	Forests owned by religious and educational institutions, pension or investment funds, NGOs, nature conservation societies and other private institutions.		
3	Community-/group-owned, user groups	Forests owned by a collective, a group of co-owners or a community whose members hold exclusive rights and share duties.		
4	Indigenous or tribal people	Indigenous people are those who descend from the population that inhabited the country, or a geographical region to which the country belongs, at a time of conquest or colonization or the establishment of current State boundaries, and who – irrespective of their legal status – retain some or all of their own social, economic cultural and political institutions. Tribal people are those whose social, cultural and economic		
		conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partly by their own customs or traditions or by special laws and regulations.		
5	Other types of ownership	Forests that are not classified as any of the above categories. To be specified by the resource person.		

A	Owner is the exclusive manager	The owner retains management rights and responsibilities within the limits specified by legislation.		
A.1	Strictly limited: no extraction rights for others	The owner is the sole manager of the resource(s); no subsistence or commercial use/extraction rights are allocated/granted to others.		
A.2	Non-commercial, user rights, customary rights, permits to hunt, gather dead wood and NTFPs	User rights allocated to satisfy local people's needs for forest products and do not allow commercialization by the users. Such rights might be regulated through licences and permits.		
В	Forest operation contracted/ partnerships	Forests in which the management decisions remain solely with the owner but management activities are executed by a different group according to an agreement. Include forests allocated for extraction purposes through licences or timber concessions. Property and management rights are not transferred.		
B.1	Joint forest management with communities, Community timber concession/licences	Forests where management agreements with local communities foresee a degree of devolution in the execution of forest operations. The agreements allocate temporary exploitation rights for specific forest products or other activities. Local communities may be given licences or short- term concessions to harvest for commercial purposes. Joint collaborative management does not alter the ownership state, and includes a negotiated transfer of benefits.		
B.2	Private company permits, forest harvesting licence schemes	Agreements allocate temporary rights for specific forest products or activities. Usually private companies are given licences or short-term concessions to harvest for commercial purposes. This category also includes partnerships between		

		private processing companies and smallholders for the production of commercial forest products on private or communal forests (out-grower schemes).
С	Devolved management rights	Includes forests in which management is devolved to a group other than the owner. Usually agreements are renewable, and convey many property rights, but overall property rights remain with the owner.
C.1	Community forest leases, forest management agreements	Forests are managed by local communities according to leases or management agreements, usually for more than 10 to 20 years, through which management, user rights and responsibilities and some property rights are transferred to the communities.
C.2	Private company leases, forest management concessions	Forests are managed by private companies according to leases or management concessions, usually for more than 10 to 20 years, through which management rights and responsibilities and some property rights are transferred to the companies.
D	Others	Forests that do not belong to any of the management categories mentioned above. To be specified by the resource person.

Part 2 CASE STUDIES



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Summary

Of China's 31 provinces, Yunnan in the southwest of the country is the fourth richest in terms of forest resources. Changes to Yunnan's forest tenure system are similar to the changes being made throughout China, as most tenure-related policies originated with the central government, especially before the early 1990s. From the early 1980s, the central government began to privatize use rights for forestry land and to strengthen forest ownership, while continuing to insist on State and collective ownership of forest land. This report highlights the major forest tenure types and their historical development in Yunnan province by focusing on collective forest resources. The report analyses the effectiveness and impacts of the forest tenure system and its contributions to sustainable forest management (SFM) and poverty reduction, and provides recommendations for improving forest tenure in Yunnan.

China's Forest Law states that "forest resources consist of timber, bamboo, forestry land and other wild plants and animals living in the forest". "Forest resources belong to all citizens (we may identify it as State ownership) except those parts belonging to collective entities (we identify it as collective ownership) as regulated by law. All the forestry land and forests, including forests, timber, and forestry land owned by either all citizens of the nation or all members of a collective, forest and/or timber owned and forestry land used by individuals, must be registered and issued with certificates by governments at county level and above, to clarify ownership and/or use right. The owners' and users' legal right over forestry land, forests and timber is protected by law. No other entity or people can violate them." That is, there are two kinds of ownership of forestry land: rural collective, and State. About 80 percent of forestry land in Yunnan is owned by collectives and the remaining 20 percent by the State.

Over the past 20 years, a rapid succession of changes in forestry land use rights has led to the emergence of several formal types of tenure in Yunnan. These changes can be divided into three major phases. The first phase began with implementation of the "two hills system", which was initiated in the early 1980s following the agricultural household responsibility system (AHRS). This policy allocated most collectively owned and a portion of State-owned forestry land to individual rural households in the form of "freehold hills", "shared responsibility hills" and "collective responsibility hills". The second phase of changes began with the auction of use rights for barren land, which started in the early 1990s in some counties. The third phase opened with implementation of the Rural Land Contract Law, which was approved in August 2002 and went into force on 1 March 2003.

Under these policies and laws there are currently four kinds of use rights for forestry land, as follows:

- Freehold hills are allocated to individual rural households. The total area allocated to freehold hills is 5
 703 000 ha (including 862 000 ha for shifting cultivation), accounting for 29.4 percent of total collectively
 owned forestry land. Freehold hills are unused, barren lands, and households are granted free land and
 exclusive benefits to encourage them to plant trees.
- Shared responsibility hills are allocated to individual households. The total area allocated to shared
 responsibility hills is 6 332 000 ha, or 32.6 percent of total collectively owned forestry land. Under this
 arrangement, individual households share some of the benefits from their forest management inputs.
- Collective responsibility hills, in which use rights are contracted to collectives usually villagers' groups or villagers' committees account for about 6 604 500 ha, or 34.0 percent of total collectively owned forestry land. In collective responsibility hills, ownership and use rights belong to the collective.
- Contracted operation and management hills emerged from the auction of use rights for barren land. The area allocated to this category is 777 500 ha, or about 4.0 percent of the total collective forestry land.

Based on a general policy of "whoever plants trees owns them", ownership of collective forests can be divided into three types, especially for timber: private household ownership of freehold hills, forests and trees in contracted operation and management hills; shared ownership between households and communities in shared responsibility hills; and collective ownership in collective responsibility hills.

Corresponding to forest use rights and ownership, there are three basic forest management types: household management of freehold hills, shared responsibility hills and contracted operation and management hills; collective management of some collective responsibility hills; and contracted management of collective responsibility hills.

Research has shown that the two hills system has three important shortcomings. First, freehold hills have not met their objective of encouraging rural residents to plant trees on barren hills, with tree plantation covering only 20 to 50 percent of allocated land despite the policy's stipulation that households must plant trees within three years. Second, the introduction of shared responsibility hills has resulted in increased deforestation and illegal cutting and a rapid decrease in forest resources, because of insecure forest tenure arrangements.

Third, household-based management of forestry land has increased operating costs. These shortcomings have been attributed to a lack of tenure security, frequently changing forestry policies, and the allocation of forestry land according to principles of equality rather than development and management efficiency.

The effectiveness of collective responsibility hills depends on the management approaches used by the collective, particularly on whether management is transparent and on the degree to which households are involved. For contracted operation and management hills, effectiveness depends on the contractor's capacity and the availability of institutional and technical support; inadequate financial support, in particular, has been a key constraint for forestry development. Government investment in forestry has been minimal, and many rural households did not invest during the 1980s because their major concern was improving their own livelihood security; households preferred to invest in agriculture and animal husbandry than in forestry.

The influence of forest tenure arrangements is not confined to management effectiveness; they also have a significant impact on the benefits and livelihood security that communities derive from forest. In general, communities' dependence on forest resources ranges from 10 to 70 percent, according to the availability of forest resources, tenure security and management effectiveness.

Analyses have identified several weaknesses of forest tenure in China: 1) the principle of "whoever plants trees owns them" was weakened by logging quotas, which make it impossible for benefit rights to be exclusive for all tenure types; 2) policy limits farmers' practical forest use rights; 3) the strengthening of forest departments' role in forest resource management has limited local communities' participation; and 4) government initiatives such as reforestation limit forest owners' rights over forest resources.

The efficiency of forest tenure systems also depends on government policy and legislation. Analyses have highlighted several issues relating to the implementation of legal instruments, especially national laws and policies: implementation starts well, but finishes badly; numerous conflicts among different government agencies lead to poor monitoring and planning; and a lack of financial resources and technical support makes it difficult to guarantee the successful implementation of laws and policies.

Different forest tenure arrangements may produce different levels of economic benefit for forest owners, and have different impacts on the environment and culture. Similarly, different areas using the same forest tenure system may derive different incomes and benefits. This study analyses one important factor related to unstable and insecure forest tenure by comparing the experiences of Taohua and Xiaoshao villagers' committee as an example. These two cases highlight that secure and stable forest tenure can generate good incomes and benefits through improving local communities' livelihood security, protecting the environment and utilizing local knowledge for SFM. However, community-based initiatives and creativity must be supported by government policy and laws, so the study emphasizes the importance of informal forest tenure arrangements and the effect of indigenous knowledge and practices.

Although developments in Yunnan's forest tenure system have been positive, the following are some of the many problems that still need to be resolved:

- Reform of the forest resource tenure system should be conducted as part of a broader reform of forestry development strategy.
- Further reform and improvement of forest resource tenure systems should be integrated into broader land rights reform.
- The two hills system should be improved and tailored to different local situations.
- Laws to protect legal tenure, particularly private forest ownership, should be designed where absent and improved where existing.
- The forest distribution and tax systems should be reformed, and a new incentive system for encouraging local communities to utilize and develop forest resources should be formed.
- Forest management should be reformed further in order to foster new management systems that put communities at the centre.
- Communities' social capital should be nurtured so that they can work together to manage and develop forest resources for improving their own well-being.
- There is a need to find new ways of discovering and regenerating minority cultures and indigenous knowledge and practices for sustainable forest resource management and utilization.

An efficient oversight system for policy and law implementation should be established, especially an effective planning, monitoring and evaluation (M&E) system.

Introduction

The People's Republic of China is a country of 1.3 billion people, of whom more than 800 million are classified as rural residents, and 76 million belong to 55 recognized ethnic groups. The government has five levels (central, provincial, municipal/prefecture, county and township), with parallel party and State institutions at each level. The province is the second level below the centre, and there are 31 provinces, autonomous regions and municipalities directly under the central government, as well as Hong Kong, Macau and Taiwan.

Yunnan province is located in the far southwest of China bordering with the Lao People's Democratic Republic and Viet Nam in the south and Myanmar in the west. Its capital is Kunming municipality. The province has a total population of 44 million people, of whom more than one-third come from 25 different ethnic groups. Many of these ethnic groups have their own lifestyles, religious customs, cultures and distinctive costumes, which have more in common with their Tibetan and southeastern neighbours than with the Han Chinese.

Yunnan province has a total land mass of approximately 394 000 km². Approximately 94 percent of the province is mountainous and hilly, with an average elevation of 2 000 m. Owing to its complex topography and geography, Yunnan has varying climates within its three general climatic zones: tropical, subtropical and temperate. Five great rivers flow south and west through the province: the Nujiang-Salween, the Lancang-Mekong, the Yuanjiang-Red, the Yangzi-Yangtze and the Zhu-Pearl. The Salween and Mekong rivers continue on into Myanmar and the Lao People's Democratic Republic. The Red River continues on into Viet Nam, while the Yangtze turns in an enormous loop and flows north into Sichuan province, then through more than ten provinces to the Pacific Ocean. The Pearl River runs on into Guangxi and Guangdong provinces, then into the Pacific Ocean.

In 2004, Yunnan province comprised 16 municipalities and prefectures, 129 counties and 1 574 townships. It is one of the poorest provinces in China, with 56.6 percent of its counties assessed as being below the national poverty threshold. The province ranks twenty-seventh out of China's 31 provinces in terms of per capita output from industry and agricultural production, and while per capita output is rising in Yunnan's industrialized urban areas, it remains stubbornly low in agriculture-dependent rural areas.

Yunnan was chosen as the site for this case study because: the Centre for Community Development Studies, Yunnan Academy of Social Sciences (CDS-YASS) focuses on Yunnan province, where it has conducted research on forest tenure systems for more than ten years; Yunnan is a mountainous province with abundant forest resources, ranking fourth in China in terms of both forest area and standing forest stock – forestry land comprises more than 63 percent of Yunnan's total land area, of which forest land accounts for about 20 million ha; and Yunnan adheres to national policies so it has a diverse forest tenure system.

Legal and formal forest tenure

LEGAL FOREST TENURE

Significant economic growth and social development in rural China are the results of a reform policy that has been implemented by thousands of farmers. This policy began with a new land tenure system for arable land in the early 1980s,⁵ followed by new tenure arrangements for non-arable land, specifically forestry land⁶ and grassland. The general approach for both arable and non-arable land was to allocate most of the collective-owned land to individual rural households according to the number of family members and/or the size of their labour force, and then to give households secure use rights. All these tenure changes and reforms on both arable and non-arable land were guaranteed by government policies and laws.

According to China's Forest Law (1998), "forest resources consist of timber, bamboo, forestry land and other wild plants and animals living in the forest". Hence, the discussion about forest tenure refers to the tenure of forestry land and/or the trees themselves, and is typically referred to as "hills and forest tenure" in Chinese. It can be defined broadly as the right(s) that owners of forestry land and/or forests can employ for some purpose(s). In China, rights can be divided into the rights to own, occupy, use, benefit from and dispose of forestry land and/or forests.

Article 2 of China's Forest Law regulates that "forest resources belong to all citizens except those parts belonging to collective⁷ entities as regulated by law. All the forestry land and forests, including forests, timber and forestry land owned by either all citizens of the nation or all members of collective, forest and/or timber owned and forestry land used by individuals, must be registered and issued with certificates by governments at county level and above, to clarify ownership and/or use right. The owners' and users' legal right over forestry land, forests and timber can be protected by law. No other entity or people can violate them". Article 23 emphasizes that "the forests planted and managed by collective economic organizations belong to the organization itself. Forests and trees planted by rural farmers on freehold hills, the freehold farmland and/or land around homesteads belong to farmers themselves. The forests and trees planted by collectives and individuals on collective forestry land; the forests and trees planted on those forestry lands belonging to all citizens but contracted and rented to collectives and/or individuals belong to the collective as a whole and/or to individuals. If the contract contains specific regulations, any determination should follow the contract's regulations".

According to a sample survey completed in 2002, most of the forest resources in Yunnan province are owned by rural collectives (see Table 1).

⁵ When a few villages in some provinces decided to allocate to individual households arable land that belonged to the collective. This initiative was very successful in terms of crop output and the improvement of villagers' livelihood security. In response, the central government issued policies to allow communities to allocate farming land to individual households according to the number of family members and/or the family labour force. The production team system was abolished, and the farming household became the basic production and consumption unit.

⁶ Forestry land is land designated for forestry development. It may consist of forest land, barren land identified for afforestation, and nursery gardens. Forest land is land where there are already forests or trees.

⁷ A collective is an administrative unit made up of a group of rural households from one or more villages, depending on the population of the village(s). There are two major types of collective. The villagers' group is based on a village and usually includes from 40 to 100 rural households – large villages have more than one villagers' group, while small villages share a group. The second type of collective is the villagers' committee, which has been an autonomous organization in rural China since 1998 when the Organic Law for Villagers' Committee gave rural residents the right to elect committee members themselves rather than have them appointed by government. A villagers' committee usually consists of several villagers' groups. Villagers' groups are equivalent to the production teams, and villagers' committees to the production brigades of the 1958 to 1981 period. Between 1982 and 1998, villagers' groups were referred to as cooperatives, and villagers' committees as administrative villages.

	State-owned		Collective-owned	Collective-owned		
	Quantity	Percentage	Quantity	Percentage		
Forestry land	4 822 600 ha	19.9	19 425 000 ha	80.1		
Forest land	3 699 700 ha	24.6	11 315 300 ha	75.4		
Cash trees	167 900 ha	12.3	1 194 900 ha	87.7		
Natural forest	3 373 400 ha	27.0	9 127 100 ha	73.0		
Standing stock	697 022 500 m ³	45.0	850 571 500 m ³	55.0		

TABLE 1 Forest ownership in Yunnan

Source: Yunnan Forestry Department, 2003: 19.

HISTORICAL CHANGES IN THE FOREST TENURE SYSTEM

Policy changes in forest resource tenure in Yunnan province after the founding of the People's Republic of China can briefly be divided into the following phases: 1) the land reform of the early 1950s; 2) the "four fixings"⁸ from 1960 to 1962, when forest resource tenure was first titled; 3) the two hills system from 1981 to 1984 onwards; 4) wasteland auctions; and 5) implementation of the Rural Land Contract Law beginning in 2002. The focus of this study is on the later three phases.

The two hills system

From the early 1980s, forestry reform became increasingly urgent following successful implementation of the agricultural household responsibility system (AHRS), which was initiated in 1980 by farmers in some areas. Collectively owned cropland was assigned to individual households with ten- to 15-year contracts. AHRS provided farmers with incentives to raise production, which in turn promoted agricultural productivity. The same system was extended to forestry about two or three years later, starting with implementation of the Three Regulations for Improving Forestry Management (*linye sanding*). Deforested areas, barren hills and small patches of forest were transferred from the communes to individual families as freehold hills. For other land, known as shared responsibility hills, households were assigned management rights under contract, but tree and land tenure was retained by the collective. (The largest and most productive timber forest land remained under collective ownership, but was often poorly managed.) These arrangements for forest tenure are known as the two hills system, and were implemented nationwide.

In Yunnan province, parts of the forest land where ethnic minorities still practised shifting cultivation were allocated to individual households under this system, so it was sometimes called the two hills and one land⁹ policy.

Implementation of the Three Regulations for Improving Forestry Management began in 1979 in Yunnan province. At that time, the Provincial Committee of the Chinese Communist Party (PCCCP) and the Revolutionary Committee of Yunnan Province (the provincial government) issued a policy entitled "Announcement on allocating freehold hills to households", which stipulated that the government should allocate a portion of barren land for afforestation by households. The regulations were as follows:

• Production teams with barren land should allocate 1 to 2 mu to each household as freehold hills, with the areas and quantity of barren land allocated by each production team depending on the forest resources that the team owned. If there were insufficient collectively

⁸ The central government issued a new policy in 1959 that allocated labour force, land (including forestry land), draught animals and production tools to each cooperative to motivate rural people's production.

[°] That is, freehold hills, shared responsibility hills and shifting cultivation land. Traditional shifting cultivation was practised by minority groups in western Yunnan up until the mid-1990s. Basically it was a slash-and-burn technique in which most large trees and all bushes were cut and burned when they were dry. The residues were used for fertilizer and the land left for six to ten years after one or two crops. This method required very simple technology and low inputs, but large areas of land for shifting. Local governments allocated areas for households' shifting cultivation in the early 1980s, but the practice was stopped in the mid-1990s, because of shorter and shorter fallow periods, making it impossible for soil fertility to regenerate and for rational outputs to be sustained.

owned barren hills to meet the requirements for allocation, a portion of nearby, fragmented State-owned barren hills could supplement them. Production teams with no barren hills of their own could allocate 1 to 2 mu to each household from nearby State-owned barren hills.

- Freehold hills allocated to individual households were still owned by the collective or the State (through production teams, townships or communes), but the use rights belonged to the households. Farmers could plant trees for fuelwood, timber and cash crops, such as fruit and bamboo. They could also grow medicinal plants and other local products on their forestry land. The products belonged to the person who planted the trees.
- Production and management activities on freehold hills could be conducted in owners' spare time only; owners should always be present for collective work and their activities on freehold hills should not affect the production team's collective economic activities.
- The County Revolutionary Committee rather than the production team had the authority to divide barren hills and decide which part belonged to the collective and which should be allocated to individual households. The committee was also responsible for issuing freehold hill certificates to each household. The allocation of State- or collective-owned forestry land to households as freehold hills was prohibited, as was the allocation of grassland that could be used for grazing animals.

In March 1981, the Central Committee of the Chinese Communist Party and the State Council passed Regulations on Several Issues for Conserving Forests and Developing Forestry, which state that the purposes of the three regulations for improving forestry management policy are to stabilize property rights for forests and forestry land, to redefine freehold hills and to allocate responsibility for forest production.

In June 1981, Yunnan PCCCP and the Yunnan Provincial Government held the Forestry Development Conference. The conference decided that there was no need for change in areas where the Central Committee's 18 Items for Forestry Development policy (issued in 1961) were implemented and forest property rights were identified and clear; where forest property rights were identified during the land reform period, and had not changed since; and where property rights had been adjusted following 1980 regulations. Counties that had not clarified property rights for forest resources should do so by placing land markers to show boundaries, issuing ownership certificates for forest and forestry land and submitting a report of activities to the provincial government.

In July 1981, the Office Department of the State Council issued Document No. 61 to promulgate the Ministry of Forestry's Briefing on Stabilizing Forest Property Rights and Fulfilling Responsibilities in Forest Production. Stabilizing forest property rights, delineating freehold hills and clarifying responsibility for forestry became key activities of the period.

In the meantime, the provincial government and the PCCCP issued another policy entitled Using a Strong Approach to Protect Forest Resources, which emphasized the need to "stabilize forest and forestry land property rights, whether State-owned or collective-owned forest, once ownership has been clarified, it would be best not to change owners". In November 1981, the Office Department of the PCCCP asked each county to establish a task force on the Three Regulations for Improving Forestry. In December, the PCCCP and the provincial government issued the Announcement for Implementing the Three Regulations for Improving Forestry, which identified the objectives, responsibilities, work and policy principles of the Three Regulations, emphasizing the need to use legal tools to deal with forest issues and to manage commercial forests collectively.

This announcement was geared towards stabilizing existing property rights for forest and forestry land, rather than attempting to establish a new system. It stated that in those areas where the Central Committee's 18 Items policy had been implemented and forest and forestry land property rights had been identified and were clear, there was no need to change ownership. Any disputes over property rights that had not been identified before were to be solved during implementation. After identifying forest and forestry land property rights, land markers were to be placed to show boundaries, ownership certificates for forest and forest land were to be issued and a final report was to be submitted to the provincial government.

Normally, local governments could allocate from 3 to 5 mu per household as freehold hills, but those with more forest resources could make larger allocations. However, State- and collective-

owned forestry land could not be allocated to households as freehold hills. Households could use freehold hills for a long time, but could not rent, sell or transfer them. On the other hand, commercial trees, fruit trees and bamboo planted near the house belonged to the household and could be inherited. Trees planted in public places, such as along nearby roads or ditches, belonged to the person who planted them.

The responsibility system for forestry was based on similar experiences in agriculture, and adopted some of the same arrangements. In principle, specialized agencies of the State manage Stateowned forest. In areas without specialized agencies, production teams represent the State and manage State-owned forest, taking a Two Fixes and Three Guarantees approach by fixing borders and management areas, and guaranteeing no forest fires, no forest damage as a result of farming and no illegal forest cutting. Collective-owned forest can be managed by establishing collective forest plantations, forest user groups and forestry-based, specialized households. After making an inventory of personnel, tasks, costs and payments needed, forest plantation user groups or forestrybased specialized households can apply for contracts to manage specific forest areas. Some wellestablished forest plantations have independent accounting systems, while scattered forest areas can be contracted to forest user groups or forestry-based specialized households. Whatever kind of responsibility system is adopted, the aims are to ensure stable property rights, link rights with responsibilities and ensure the people and units that work more get more benefits. Economic activities should be based on contract documents that can ensure implementation.

In June 1983, Yunnan PCCCP and the provincial government issued a new policy entitled Several Regulations on Freehold Hills and Shared Responsibility Hills. The regulations stated that "we should liberate our thinking and broaden policy space. Like reform polices in agriculture, forest can be managed by households while remaining in State ownership. Freehold hills and shared responsibility hills should be in the hands of farmers". The regulations also emphasized that "those production teams without barren land can allocate a portion of nearby State-owned barren land to households as freehold hills, but ownership will still belong to the State". Additionally, "it is prohibited to allocate large areas of commercial forests and young forest stands to households as freehold hills".

In March 1984, the provincial government issued another policy entitled Broadening Forest Policy and Widening Exclusive Forest Management Rights, which emphasized the need "to deal carefully with historical problems related to forest property rights, and to allocate freehold hills and shared responsibility hills to households".

From the beginning of implementation of the Three Regulations for Improving Forestry and the two hills system in 1981 until the end of December 1983, 185 380 production teams carried out reforms. Of these, 179 531, or 96.8 percent of the total, had completed reforms. Roughly 4 841 200 ha of collective-owned barren land had been allocated to individual households as freehold hills. In total, 185 380 households were allocated 83 percent of the total barren land for distribution, at an average of about 20.3 mu for each household. A total of 6 331 200 ha of collective-owned forest land was allocated to household distribution. In addition, 862 200 ha of forestry land was fixed as farmland (no longer allowing shifting cultivation), and 1 936 200 ha of grassland was distributed to individual households for grazing animals. The total allocated area of Yunnan province under reformed forestry was 13 970 700 ha, but among the prefectures within Yunnan there were large differences in allocations (see Table 2).

Prefecture	Freehold hills		Shared responsibility hills		Grassland	Shifting cultivation	Total	
	Area	%*	Area	%*		land	Area	%*
Lijiang	329.5	70.0	569.8	100.0	189.9	18.9	1 108.2	88.4
Simao	386.4	76.0	514.7	64.0	243.7	259.0	1 403.8	77.1
Dali	451.3	97.0	843.6	91.0	74.1	20.7	1 389.6	92.5
Dehong	81.2	64.0	149.1	82.0	73.2	12.8	316.3	78.6
Lincang	234.1	100.0	329.8	100.0	96.2	178.9	839.0	100.0
Baoshan	504.5	96.0	313.1	74.0	196.5	14.5	1 028.6	87.4
Chuxiong	834.4	100.0	831.9	100.0	42.2	0.0	1 708.5	85.7
Yuxi	209.8	97.0	341.4	100.0	39.5	0.0	590.6	99.0
Wenshan	200.7	72.0	333.4	79.0	220.3	104.7	859.1	83.4
Qujing	574.0	87.0	651.1	87.0	19.4	19.2	1 263.6	87.7
Honghe	370.7	70.0	719.3	100.0	330.0	138.7	1 558.7	90.6
Zhaotong	331.6	80.0	211.4	89.0	301.5	23.7	868.2	88.7
Dongchuan	10.3	96.0	4.9	54.0	23.4	0.0	38.6	89.5
Bannan	15.0	11.0	28.7	20.2	16.4	59.9	120.1	34.3
Diqing	21.7	54.0	126.7	48.0	0.0	0.0	148.3	48.4
Nujiang	26.0	100.0	98.4	100.0	14.4	11.2	150.0	100.0
Kunming	260.0	79.0	263.9	100.0	55.6	0.0	579.5	89.2
Total	4 841.2	83.0	6 331.2	87.0	1 936.2	862.2	13 970.7	87.7

TABLE 2
Areas allocated to households in prefectures (in thousand ha)

* Refers to the proportion of the specific kind of land that can be allocated.

Source: Yunnan Forest Department, 1984: 270–271.

To encourage farmers to invest in forestry on a wider scale, in 1983 the PCCCP and the provincial government issued Several Regulations on Freehold Hills and Shared Responsibility Hills and Regulations on Allocating Freehold Grassland and Implementing the Responsibility System. With these regulations, freehold hills, shared responsibility hills, grassland and shifting cultivation land were allocated to households province-wide.

From June 1989 to December 1994, certificates of State-owned forest ownership were issued throughout Yunnan province. In total, ownership of 3 221 200 ha of forestry land, or 88.4 percent of total State-owned forests, was certified among State institutions. Of this total, State-owned forest enterprises comprised 443 800 ha or 13.8 percent, State-owned plantations 1 284 400 ha or 35.7 percent, nature reserves 1 189 300 ha or 36.9 percent, prefecture and county commercial timber companies 255 200 ha or 7.9 percent, and the remainder was managed by other departments – 187 800 ha or 5.6 percent of total State-owned forest land. This was the first time since the establishment of the People's Republic of China that the ownership of State-owned forest resources had been clarified.

Auctioning use rights for barren land

In September 1993, based on further reform of use rights for rural land while insisting on State and collective ownership of forestry land, Yiliang county undertook the first forestry auction experiment in Yunnan. Use rights for 12 000 ha of barren and shrubland were auctioned to farming households, individuals from urban areas and other social groups with the capacity to develop and manage barren land.

In April 1994, the Yunnan Provincial Rural Development Conference was held. During this conference, the PCCCP and the provincial government praised Yiliang county's efforts in auctioning barren land, and decided to auction use rights for barren hills, low-quality forest land, shrubland and valleys throughout the province. From April to August 1994, 57 counties auctioned 77 800 ha,

earning 36 788 500 yuan (equivalent to US\$4 536 190). These revenues are equivalent to about 14 times the investment in reforestation by province, prefecture and county governments in 1993.

At the beginning of the same year, the office departments of the PCCCP and the provincial government approved a policy for Suggestions on Auctions for Collective-Owned Barren Land (including low-quality forest land and shrubland), which detailed the design and approaches for auctions. At the same time, most prefectures created implementation strategies and policies for conducting auctions more practically and feasibly. In November 1994, the tenth session of the Eighth Standing Committee of the Provincial People's Congress elevated the auction approach from policy to law and approved Regulations for Auctioning Use Rights for Barren Land.

In order to speed up auctions, almost every prefecture set up a task force for auctioning use rights for barren land with an office in charge of daily activities. Based on good policy, governments at different levels began to increase investments for reforestation and issued favourable policies, such as reducing and/or remitting taxation and strengthening information and technical services.

In January 1996 and June 1998, Yunnan PCCCP and the provincial government organized two meetings to distil and exchange lessons and experiences of auctioning use rights for barren lands and to promote the development of forest resources. Based on the findings of these meetings, a new policy on Some Suggestions on Improving Auctions and Encouraging Barren Land Development was approved in January 1999. This policy encouraged participating households to develop barren lands. Between 1994 and 1999, use rights for 777 505.3 ha of barren land were transferred to households and other social groups (including urban residents) throughout Yunnan, with differences among prefectures (see Table 3). Of this total, 764 287.7 ha, or 98.3 percent, was collective-owned, and 13 217.6 ha, or 1.7 percent, State-owned. A total of 455 442 farming households. Altogether, 120 567 000 yuan (US\$14 866 460) was collected from auctions. At the end of 1997, 413 547.7 ha had been afforested, accounting for 53.2 percent of the total area to which use rights had been auctioned.

Prefecture	Barren land	Forest land	Shrubland	Total
Lijiang	19 520.0	0	0	19 520.0
Simao	29 633.7	0	712.2	30 345.9
Dali	30 110.9	0	0	30 110.9
Dehong	56 300.0	336.2	108.0	56 744.2
Lincang	44 813.5	76 853.8	4 528.9	126 195.6
Baoshan	26 693.3	0	5 206.7	31 900.0
Chuxiong	31 091.9	657.3	6 705.7	38 454.9
Yuxi	25 063.3	0	0	25 063.3
Wenshan	33 935.1	194.6	0	34 129.7
Qujing	39 690.6	0	0	39 690.6
Honghe	49 950.9	0	266.3	50 217.2
Zhaotong	2 231.9	1 885.3	480.7	4 597.9
Dongchuan	2 600.3	0	0	2 600.3
Bannan	80 000.0	0	145 333.3	225 333.3
Diqing	384.8	0	0	384.8
Nujiang	1 937.4	79.3	0	2 016.7
Kunming	40 666.7	2 466.7	17 066.7	60 200.0
Total	514 624.3	82 473.2	180 408.5	777 505.3

TABLE 3 Areas and compositions of auctioned forestry land (ha)

Sources: Prefecture and municipal reports.

Implementation of the Rural Land Contract Law

Land tenure security, including the tenure of forest resources, has been receiving greater attention from the public, including local farmers. In response to this increased attention, the National People's Congress spent more than two years drafting the Rural Land Contract Law. It was approved by the Standing Committee of the National People's Congress, which is in charge of formulating and monitoring laws and regulations, in August 2002 and was put into force on 1 March 2003.

The law defines household contracts as the basis for rural land, while also allowing other contract approaches, such as user groups and collectives. It distinguishes different contract periods for different types of land: 30 years for arable land; 30 to 70 years for forestry land (longer for some specific forests, for which approval from forest management bureaux under the State Council is required); and 30 to 50 years for grassland (Article 20).

The law also regulates the rights, responsibilities and obligations of different stakeholders, including farming households, villagers' committees, villagers' groups and governments at different levels. These rights, responsibilities and obligations are different from those in previous laws. The law gives much authority to landowners, emphasizing, for example, that villagers' committees and/or villagers' groups, rather than government agencies, decide whether or not to adjust land allocations among households. Within villagers' committees and groups it is not the leaders who decide on adjustments, but rather the agreement of two-thirds of total households or representative villagers.

The law gives landowners more authority to decide tenure arrangements, but it is not clear how it should be implemented. The Yunnan Provincial People's Congress is currently drafting detailed regulations for implementation.

In 2003, the Central Committee of the Chinese Communist Party and the State Council issued a decision on Accelerating Forestry Development; this was the first time that the Central Committee issued a specific policy on forestry development. The decision contains 25 articles, sets out development goals for forestry and adds new regulations. Two articles focus on tenure arrangements, specifying that freehold hills that have already been allocated to individual households can be used by households as they wish; the trees belong to the households, and no individual or institution can take back the land or forests. Shared responsibility hills should continue to issue contracts. Collective responsibility hills should have clear operational approaches, such as joint stock plantations and jointly managed plantations. Article 13 states that it is better to "allocate forests and trees to individual households". Clarification of the tenure system should include effective ways of stabilizing the transfer of use rights for trees and forests; any social group and individual can acquire use rights through contract, renting, transfer, auction and negotiation (Article 14).

MAJOR FORMAL USE RIGHTS OVER FOREST LAND

The rapid succession of changes in forestry land use rights has led to the emergence of several formal forms of tenure in Yunnan province. The following are the most notable of these.

Freehold hills

According to the two hills system, freehold hills allocated to individual households must be barren land. The purpose is to encourage farmers to plant trees and develop forestry by following the principle that "whoever plants trees owns them", but this has not always been the case. In some areas timber forests that were close to the village and easy to manage were allocated to individual households, while in others only those that were remote from the village and difficult to manage were allocated. In yet other areas, during the late 1980s, local governments combined freehold hills and shared responsibility hills into one type of forestry land, called freehold hills.

Freehold hills are managed by either individual households or collectives, and are run by farmers hired or subsidized by individual households or collectives. The various levels of government have not provided a great deal of support or technical services for reforestation and management on freehold hills. In many places, freehold hills were redistributed according to such factors as forest type, location, growth period and forest stands, as well as social factors such as number of family members. The result is that each family owns several plots. In most cases, there are no clear boundaries between plots, so it is difficult for households to manage their land effectively. In Yunnan province, each household typically has about 10 mu, but some have only 2 to 5 mu. The reasons for distributing land according to the number of household members include equity, equality and consistency with the agricultural responsibility system.

Shared responsibility hills

The two hills system also allocated collective forestry land to individual households for management; these allocations are known as shared responsibility hills. In Yunnan, about 56.7 percent of the collective-owned forest land was allocated to individual households in this way. According to the two hills policy, shared responsibility hills are areas with forests and trees, and households have the right to manage forests and trees only, acquiring benefits according to their labour contributions.

In many places, forestry land under shared responsibility hills was allocated according to the number of family members and/or labourers in a household. In most cases, approximately 10 to 20 mu was allocated to each household, although this sometimes rose to more than 100 mu, depending on the community's forest resources (usually forest stock). A similar allocation method was adopted in most places, and each household tends to own several plots. In addition, no contract period was specified, so most households paid more attention to obtaining and maintaining food security when the policy was first implemented. Many households have not taken their management responsibility seriously and have proceeded to log their forests, which has resulted in serious deforestation. This is the major reason why the two hills system has not been successful in many places throughout Yunnan.

Collective responsibility hills

In some areas, forestry land was not allocated to individual households, and clear collective responsibility was maintained; this form of tenure is known as collective responsibility hills. Collective management was preferred in some areas because there were few forests, historically the forests were collectively managed, and there was concern that forests would be destroyed if they were allocated to individual households. The total area designated as collective responsibility hills is roughly 6 604 500 ha, or about 34.0 percent of the total area designated for forestry development in Yunnan province. Current management approaches for collective responsibility hills include the following.

Joint stock forest farms: In some areas, collective forest resources have been converted into stock shares for the households within a villagers' group or committee. Shares are distributed to village members according to family size. This method is known as "distributing the stock rather than the forests", and is very different from formal joint stock systems. Within this system, each villager who is linked to a household is a shareholder. A shareholder committee has decision-making rights, is responsible to the villagers' group or committee and elects a member from among villagers to be its manager. A certain percentage of farm profits are distributed to shareholders once a year, and the rest is handed over to the village administration for general welfare or invested in farm ventures. In practice, shareholders make a limited contribution to the farm's management, which is not considered particularly important in many joint stock forest farms; shareholders' benefits are not taken into consideration because individual households have no access to them.

Collective forest farms: In some areas forest resources managed by collectives have gradually been converted into collective forest farms, which have become a major management type. Villagers' groups or committees select several villagers through village representative meetings, and give them responsibility for care of forests. The villagers' group or committee organizes logging and marketing, and villagers may receive a share of the profits; taxes and fees are usually deducted before profits are distributed to households. Villagers' groups and committees also purchase agricultural production materials with revenue generated from forests and distribute these to households.

Collective management: Some villages take a collective management approach. The collective hires forest guards to manage the forest, and controls all benefits, with the aim of protecting the forests and maintaining natural regeneration. Management effectiveness depends on the accountability and transparency of village heads and the effectiveness of forest guards. There are two possible outcomes: management is effective, and builds its own momentum, or poor management is perpetuated.

Contracted operation and management hills

This new approach emerged in the 1990s, after the auction of barren land use rights. Its defining characteristic is that operation and management rights during the contract period, which ranges from 30 to 70 years, belong to contractors (both individual farmers and social groups). Contractors can gain benefits from the management and utilization of forest resources by adhering to regulations and policies. Forest resources may be located within or outside the village. The contractors can be villagers, other social groups or urban residents. High investment and industrialization are associated with this management approach, and the income and benefits are much higher than those from other forms of tenure arrangement.

Effectiveness and impacts

Since the implementation of reform and open door policies in the early 1980s, Yunnan province's forest tenure system has evolved considerably. This evolution has resulted in the coexistence of different use rights for forest resources and, to some extent, private ownership of forests. These different use rights for forestry land and ownership over forests and trees vary in effectiveness and have produced different impacts in different areas.

DIVERSIFIED MANAGEMENT

China's forestry reforms of the early 1980s consisted of three elements: the clarification of forest ownership rights; the allocation of collective-owned forestry land to households under the two hills system; and the introduction of responsible production systems for forest management (Ministry of Agriculture, 1982: 361–364). The two hills system involved the contracting of collective forestry land under three different arrangements: freehold hills, shared responsibility hills, and collective responsibility hills. Under this system, freehold hills and shared responsibility hills were accorded different purposes and implied different rights.

Freehold hills were intended to encourage farmers to plant trees to meet household fuelwood and timber needs by privatizing use rights to land and the ownership of trees on the land. Shared responsibility hills were introduced with the aim of modifying management methods within the collective system (Liu, 2001: 248). Tenure and management arrangements for shared responsibility hills vary, with some areas adopting household contracting and management and others maintaining some form of collective management. In all cases, trees on shared responsibility hills remain the property of the rural collective. In cases where shared responsibility hills were contracted to individual households, those households are entitled to receive a share of forest benefits. Both the percentage of forestry land allocated under each tenure and management arrangement, and the terms of benefit sharing between the collective and households on shared responsibility hills varied according to local circumstances (Liu, 2001: 248).

Recent research on forest tenure in Yunnan concluded that the two hills system has three important shortcomings (Liu, 2001: 249–251): 1) freehold hills have not met their objectives, with trees planted on only 20 to 50 percent of allocated land, in spite of a regulation stipulating that households must plant trees within three years or risk having their land taken back by the collective; 2) the introduction of shared responsibility hills has resulted in increased deforestation and illegal cutting and a rapid decrease in forest resources, because food security is the first priority for very poor households, which cut trees to generate cash for purchasing food and other daily items; and 3) household-based forest management has increased the operating costs for forestry. These shortcomings have been attributed to a lack of tenure security, frequently shifting forestry policies and the allocation of forestry land based on principles of equality rather than on management efficiency, effective financial and technical support and assistance from the government.

Under the two hills system, many villages in Yunnan have experimented with management systems that can be described as common property management. These local approaches can be divided into three broad categories. The first is management by the village collective, in which the management unit "is public, functions as an owner/manager, institutes a unified system of resource management, and can be considered a common property institution. Some forests are managed on this basis, and it is still an approach applied in reforestation" (FAO, 1999: 104). The second approach is long-term management of collective forests by specialized households under contract with the village collective (FAO, 1999: 104). And the third is a public or private shareholder association, typically organized by the villagers' group or committee, in which villagers contribute use rights to forestry land, labour, or capital in return for a share of the benefits obtained from the land (FAO, 1999: 104; Liu, 2001: 252). To some extent, such experimentation with different forms of collective forest management has flourished under the lack of law at local levels (for a discussion of self-initiated shareholding systems see Liu, 2001: 252–253; and for a description of experiments with common property see FAO, 1999: 104–106).

According to the two hills system, collectives have the right to take back use rights from households that do not plant trees on freehold hills within three years; do not take responsibility for managing forests adequately on both freehold and shared responsibility hills, resulting in deforestation and degradation of forest; and/or destroy forests through activities such as illegal logging on both freehold and shared responsibility hills. However, no specific government agencies are authorized to take land back. Until 1998, in most villages land was allocated to individual households, and village heads were appointed by government officials. Although village heads were nominally accountable to higher levels of government, they and their families did not want to oppose the villagers, who were their neighbours. As a result, village heads usually failed to carry out their monitoring responsibilities. Since 1998, with enforcement of the Organic Law of Villagers' Committees of the People's Republic of China¹⁰ and the strengthening of forest management policies, villagers' committees have taken partial responsibility for forest monitoring and management through village regulations and rules, but the results of management are still not satisfactory.

Another problem related to weak monitoring and management of forests under the two hills system is the ambiguity of ownership. Laws relating to landownership (including forestry land) appear to be clear. Based on the constitution, the National People's Congress formulated the Land Management Law (1998), the Forest Law (1998) and the Rural Land Contract Law, which stipulate that "land close to urban areas belongs to the State. Land in villages and suburbs belong to farmers' collectives. Housing plots, freehold farmland, and freehold hills belong to the collective.... Other collective-owned land should, according to the laws, be protected and managed by the collective; for land belonging to more than two collectives, management rights belong to village groups; for land that belongs to the township, management rights belong to the State except where they belong to the collective and are regulated by laws. For the ownership of forests, timber trees and forestry land that belong to either the State or collective, county or local government should issue registration and certification for each piece of land in order to formalize ownership to individual farmers".

However, in spite of this legal clarity, studies show that ownership of forestry land remains ambiguous. First, it is not clear what kind of land should be considered "forestry land". Some local governments define all non-arable land resources except homesteads, roads and water surfaces as forestry land. This causes confusion between forests and grasslands, and even between forests and agrarian land, because there are no clear definitions of these different types of land use. Second, collectives no longer exist in many places, so it is not clear which entity is legally responsible for collective ownership. Where they do exist, collectives cannot take legal responsibility for forestry land, which means that the legal entity responsible for collective ownership is powerless. Third, on the ground, collective ownership is often not assumed by the villagers as a group (CDS, 2005).

BENEFITS AND COMMUNITY LIVELIHOODS

Throughout China, local communities' dependence on forest resources varies greatly according to the natural endowments, land tenure arrangements and access to forest resources of each community. Forests generally contribute from 10 to 70 percent of communities' livelihoods, but the revenues from forest resources account for less than 5 percent of gross domestic product (GDP). In Yunnan province, forest resources are concentrated in western prefectures and municipalities, such as Diqing, Lijiang, Nujiang, Baoshan, Dehong, Simiao, Xishuangbanna and Linchang. These areas have a total rural population of more than 13 million people, for whom more than 50 percent of daily activities are based on forests, including the collection of fuelwood for family consumption, shrubs for fodder, wild mushrooms, medicinal plants and wild vegetables for both family consumption and cash income, and timber for cash income. Some communities in Yunnan's eastern prefectures generate a reasonable income from forests by, for example, providing accommodation

¹⁰ This law describes villagers' committees as "grassroots villagers' autonomous organizations characterized by villagers' self-administration, self-education and self-service based upon democratic election, decision-making, management and supervision". It aims to encourage rural people to exercise direct democracy and to establish basic democratic systems.

for urban people and collecting wild mushrooms and medicinal plants. Forests may provide 20 to 50 percent of total household incomes for the 2 million people who inhabit forest areas in this region, but more than 10 million rural people in eastern Zhaotong, Qujing and Kunming obtain little income and few benefits from forests (about 10 to 20 percent of their total cash income) because there are very few forest resources (the forest cover rate is about 15 percent) in these areas.

The different levels of local community dependence on forests also derive from differences in forest tenure systems. This is part of the reason why the Chinese government pays so much attention to improving the tenure system for forest resources. Since the 1980s, the key objective of rural reform in China, particularly of land reform, has been to define the differences between ownership and use rights. Establishing this definition is a government priority that is supported by almost 800 million farmers. However, despite the reforms carried out over the last 20 years, farmers have not acquired secure use rights for forestry land. This can be illustrated through the following problems.

Benefit rights are not exclusive. The principle of "whoever plants trees owns them", which permits inheritance and transfer, was clearly outlined in a 1956 policy with the purpose of encouraging local people to develop and protect forests. However, this principle has generally not been adopted and does not reflect basic market economy principles, in which the market guides buyers and sellers. Legally, individual property rights for timber forests and trees, at least for planted forests, are unclear. China's Forest Law states that "forest resources belong to the State unless regulated to collectives by law". If both the law and the policy were taken into account, there would be dual ownership: one owner being either the State or collective, and the other a farmer. However, according to the law, this is not tenable, as rights must be exclusive and cannot be controlled by two parties at the same time. In addition, China's Civil Law emphasizes that a person's legal benefit rights must be conducive to the common interests of the whole country. So, "whoever plants trees owns them" really means "people plant trees and the whole country owns them". In other words, "whoever plants trees owns them" refers to production but not to sale and/or consumption. China's Forest Law clearly states that farmers must obtain permission from the county forestry authority or township government before they harvest trees from their freehold hills and forestry land contracted from collectives. Permission is controlled by the central government's quota system, which means that forest owners have no right to determine how much and when to harvest. In addition, the fact that the quota is controlled by all levels of government under the central government, makes it very difficult for local situations to be represented from the centre to the provinces, right through to the county, so it is difficult for the quota to reflect the real needs and production capacity of specific forests - reflecting needs and capacities is difficult enough from the county to the township and villagers' committee levels. At all levels of government, human influence makes the quota allocation system difficult to manage, which became obvious after the logging ban of 1998, when most farmers in most counties of Yunnan province were not allowed to harvest any timber.

Forest policies limit farmers' practical use rights to forestry land. The most prominent example of this is China's classification of forests." During field studies, farmers often complain that the forest department and foresters determine the areas and scale of public forests, but the forest department's recommendations are often overruled without repeal. This is typical of a planned economy, and undermines the roles of science and technology while – even more serious – violating the rights of tenants. It is therefore not surprising that farmers complain about classification.

The government has strengthened forestry departments' role in forest resource management. In order to expand the authority of forestry departments, the government has assigned considerable power to them for managing forests. More powerful forestry departments restrict the rights and functions of local government, and particularly the roles of farmers in managing and developing forest resources. Departments often do not understand the rural socio-economy and local communities' needs, and forestry workers seldom consider the interactions among trees, forests and human beings (Yan, Zheng and Yu, 1992: 42–43). They consider their own position and the purpose of forestry to be more important than human beings, and overemphasize the ecological function of forests, ignoring the fundamental role of forests in improving human welfare. Such forestry departments exercise use

¹¹ This classification started in the late 1990s and early 2000s and divides forests into two major categories: public forest, which functions to protect the environment and enhance public welfare; and commercial forest, which is intended for timber production and profit-making for the producers.

rights over forestry land as distant managers. It is the forestry department rather than the tenant that determines the functions and purposes of forest land and the category of forests and trees, based on their own opinions and according to "forest science". In forestry departments' view, the role of farmers is merely to plant trees according to technical designs, contributing their labour and time, rather than exercising their ownership rights.

Programme factors limit forest owners' use rights over forestry land and their ownership over forests and trees. For example, some forestry programmes that focus on ecological benefits stipulate that only a fixed percentage of the project area can be used for economic forests, and the trees planted must have protective functions rather than generating economic benefits. Other, large-scale programmes require forest plantations to be contiguous, both physically and in terms of the category of forests and trees. These limitations create obstacles to farmers' use rights to forestry land.

Local communities' ability to adapt to national and provincial policies is also important in determining whether and to what extent they can benefit from forests. Such adaptation depends on local social capital, as illustrated in the example of Taohua villagers' committee.

Taohua villagers' committee is located in the west of Yulong county, Lijiang municipality (northwest Yunnan), about 90 km from Lijiang. It is one of the key forestry areas in Lijiang municipality, and contains 18 villages. The villagers' committee is made up of about 580 households with 2 500 people from a range of different ethnic groups including Bai, Lisu, Naxi, Pumi, Tibetan and Han. According to a detailed government land-use survey in 1993, the total area of Taohua villagers' committee is 163 961.3 mu (10 930.8 ha), of which forestry land (all of which is forest land because there is no barren land) amounts to 10 024.5 ha, or 91.7 percent, and farm land to about 370.7 ha, or 3.4 percent of the total, providing about 2.2 mu per capita. The main crops are rice, wheat, maize, potato and beans, as well as some cash crops, such as tobacco and rape seed oil. Other sources of income include apple, pear, chestnut, walnut and plum, as well as income from nontimber forest products (NTFPs) such as mushrooms, particularly matsutake. Before the 1998 logging ban, the villagers' committee depended greatly on the forest for cash income, especially from timber and NTFPs; in 1997, net per capita income reached its highest level, at about 840 yuan (US\$104). However, the logging ban seriously affected farmers' income, which decreased to 740 yuan (US\$91) in 1998 and to 700 yuan (US\$86) in 1999. For the villagers' committee, income from forestry decreased from 2 455 000 yuan (US\$302 713) in 1997 to 220 000 yuan (US\$27 127) in 1999, a drop of more than 91 percent. This represents a reduction in the proportion of total income derived from forests, from 56.1 percent in 1997 to just 5.7 percent in 1999. In 1999, villagers did not receive any income from timber production; the forestry income of about 220 000 yuan (US\$27 127) was all from NTFPs.

The most interesting story from Taohua is how the local community set up a system of village tenure rules before the logging ban was implemented. Taohua commenced commercial timber harvesting in 1973, when it initiated a new local economy based on collective timber harvesting and group decision-making. Villagers were represented in decision-making for the harvest and sale of logs, and also created regulations for timber harvesting. Key among these regulations were *si tongyi* and *yibenzhang hesuan*, meaning that there is only one accounting book for all timber harvesting in the villagers' committee, and villagers carry out joint forest management, joint planning for harvesting, labour sharing arrangements and joint profit distribution. When the village's commercial timber harvest increased, villagers considered the sustainable use of forests within the context of conservation. Forest management institutions adapted to changing conditions, improving as they did so, and villagers were able to enforce and improve their regulations continually.

The first rule of *si tongyi* is a power sharing mechanism based on group decision-making. When collective timber harvesting began in 1973, all decision-making became a group process. Every year, the heads of the villagers' committee held meetings at which villagers' representatives drew up plans for logging and timber harvesting before individual villagers applied for harvest certificates. Villagers' committee members then considered a number of criteria for each logging site and village; these included forest resource conditions, infrastructure needs, quotas, road conditions, economic development, and location (upland or lowland). The villagers' committee then passed the plan to a meeting of villagers' representatives for final approval, before issuing harvest certificates from the township forestry station. The forestry station decided the total amount of timber, the number of logging sites, road conditions, logging methods and duration of logging. If the village representatives did not agree with these they could return to the villagers' committee for reconsideration.

The second rule concerns benefit sharing based on an income distribution system controlled by the collective. Benefits and responsibilities are shared among the community of the villagers' committee, and at the village level. Taohua collectively controlled the distribution of income from timber production, and the villagers' committee governed the benefits of logging for individual villages and the whole community. From the beginning of timber harvesting in 1973 until 1981, all resources and means of production were managed communally, even though the value of timber was not high. The villagers' committee returned only 3 yuan (US\$0.37) per cubic metre (about a fifth or sixth of the total income from timber) to the villages that were in designated logging sites. With implementation of the two hills system in 1982, ownership of community forests was determined at the village level and some forest land (rather than barren land) was allocated to households as freehold hills. In order to adapt to this situation, 70 percent of total income was returned to the village, and 30 percent was controlled by the villagers' committee. This not only secured the forest owners' rights over forest resources and products, but also took into account benefit sharing and the stability of forest tenure at the village level, thereby guaranteeing more income for the owners of forestry land and forests.

The third rule is household involvement based on collective arrangements of labour. Every year, logging labourers were employed from all 18 villages in Taohua, apart from those that did not have labourers to spare. Every household and villager was involved in timber production and related activities. The villagers' committee made contracts with villagers' groups only, and not with individuals. Activities included road construction, logging and the loading, unloading and transport of timber, and the income and expenses of each activity were accounted. Labourers' income from logging depended on their specific contributions, and the detailed accounting of income was designed to control free riders. For example, workers were paid 0.5 yuan (US\$0.062) per cubic metre for each of the four processes in logging – felling, topping trees, trimming felled trees and barking logs.

The fourth rule imposes rotational logging. From when Taohua first harvested trees in 1973 until 1980, the villagers' committee organized villagers for clear cutting. As the quota for timber cutting increased, problems with clear cutting emerged, and the villagers' committee formulated new logging methods and management that introduced selective cutting. Tree cutting had to be implemented and monitored by the villagers' committee; individual cutting was prohibited. Tree cutting had to be on a rotational basis, and clear cutting was banned. (Local forest management practice leaves cleared plots for more than ten years to regenerate before new cutting commences.) Rotational cutting practices sustained green areas in the watershed forest, as well as sustaining the village economy. Before logging commenced, a chute was built for moving the logged trees, seed trees were selected and only overmature and adolescent trees were cut. Trees with a diameter of less than 24 cm could not be cut, and villagers' committee checked and evaluated the logging process, penalizing any logging groups whose activities broke the rules. These rules were well enforced and the logging areas functioned for water and soil conservation purposes, as well as providing good conditions for the growth of juvenile trees (CDS, 2005: 213–236).

CAPACITY AND INSTITUTIONAL SUPPORT

As in many other developing countries and regions, many different factors in Yunnan have an impact on forestry development; these include human resources, financial inputs, technical services and policy incentives. In 1998, CDS conducted a questionnaire survey on major constraints for the further development of forestry, involving more than 246 government officials and academics. Respondents mentioned the following factors: insecure tenure arrangements and unclear boundaries (22 respondents, 8.9 percent of the total), insufficient financial inputs (82 respondents, 33.3 percent), poor management (46 respondents, 18.7 percent), long production cycles and low profits (74 respondents, 30.1 percent), conflicts between forestry and animal husbandry (16 respondents, 6.5 percent), and others such as poor policy implementation and inappropriate tree species selection (six respondents, 2.4 percent) (Zheng, Mu and Su, 2001: 81). The survey made no mention of human resources.

In fact, the development of human resources for forestry in Yunnan is not a primary issue. Farmers have enough time to engage in forestry activities if they can obtain decent returns. This explains why the survey – which in any case was about forest tenure – did not pay more attention to

farmers' capacity for forestry. Lack of adequate financial input is a greater problem; the government has no specific funds for promoting forestry, especially collective forestry, while farmers are still too poor to invest household resources in forestry. In 2004, CDS conducted another questionnaire survey of five villagers' committees representing different socio-economic situations in Yunnan and involving 400 households. The survey results show that household expenditure on production in 2003 was 1 407.7 yuan (US\$174), or 17.9 percent of total expenditure. Of this, investment in forestry was less than 5 percent. Among the 400 households, 360 had loans for covering both production and living expenses, but only two households utilized these loans for forestry activities (Zheng, 2005).

A key question is why farmers do not invest in forestry when, as many studies have shown, they do not lack the capacity to manage their forests. In Yunnan province there are 25 ethnic minority groups, each of which (including the Han Chinese) has a long tradition and practical experience of protecting and managing forests. Many groups believe that spirits control all living things in the area and guarantee the safety of human beings. People pay their respects to spirit trees, offering sacrifices to gods and ancestors under them. They believe that the more a family pays for maintaining its spirit forest, the wealthier that family will become. For instance, Yao people have a village god (*Zhaishen*) and a forest spirit (*Linshen*) who protect the village. For these spirits, every village maintains certain nearby forest areas as *Fengshui lin* (geomantic omen forests – spiritual forests) and landscape forests. The key function of the spiritual forest is to protect village wealth, and none of its trees can be cut, even when they are dead. The landscape forest protects the natural environment and village safety, and only its dead trees can be cut.

Zhuang people worship the power of the dragon, which lives in the dragon hill or dragon forest. Water source hills are regarded as landscape hills. According to the regulations, trees on the dragon headwater source hills cannot be cut, neither can white pine (*Cupressua junebris*), pine and fir trees on households' hills.

Miao people view the hills and mountains behind the village as dragon hills and mountains, and the forests and trees growing on them have spiritual importance. As dragon hills and spiritual trees play a role in water conservation, and as water brings wealth, the hills are considered gods that control everything. Therefore, people's activities must respect the hills, and should not offend them. For Miao people, the hills give birth to all things on earth and nurture human beings.

Temples are built in front of some Naxi villages to house statues of the wealth spirit, the hill spirit and *Mawang* (the horse king, also a spirit). Every summer, villagers hold meetings to check the implementation of regulations and commence the closure of the mountain. Every village also has its own clan hills, which are their ancestors' resting places, where trees cannot be cut.

This discussion leads into another question regarding why farmers keep their spiritual trees and forests well but not the trees and forests on their own hills, especially on freehold hills. The answer to this lies in the technical services and institutional incentives provided by the government.

In China, technical services are provided by technical research and extension institutions that extend from the central government down to townships; villagers' committees in some counties of Yunnan province have technical forestry extension workers. Farmers should have easy access to these technical services, but this is not the case for two reasons. First, the supply of technical services is limited. The nearest source of technical services for farmers should be township governments, but township technical staff spend most of their time on township government affairs, which is called "core work", and providing services for farmers is a second priority. The second reason is the quality of the available technology. Most technical staff at the township level have received only one session of professional training and cannot update their knowledge.

The two hills system provides only limited incentives for farmers to plant and manage trees and forests, especially in terms of tax exemptions and reductions, cash and seedling subsidies. The forest auction policy provides some incentives, such as tax reductions and exemptions within three years after contractors plant trees, and subsidies of 30 yuan (US\$3.7) per mu for seedlings; the Grain for Green Policy¹² provides more subsidies. In 2003, the central government issued a decision on

¹² The central government issued this policy in 1999 with the aim of encouraging farmers to stop farming on land that slopes at more than 25 degrees and to transfer their activities to forest and grassland. Farmers who stop farming and plant

Accelerating Forestry Development, which emphasized the need for both central and local government to decrease taxes and increase investment. However, the extent to which this decision can be implemented is not clear, neither is the extent to which farmers would benefit from its implementation. Studies show that some policies, especially those requiring local government (county and township) to provide financial support or co-financing, are difficult to implement because of local governments' limited revenues.

GOVERNMENT POLICY AND LEGISLATION

There are several issues related to the implementation of legal instruments, especially national laws and policies. First, when policies are initiated, agencies are set up and budget and human resources support are put in place, but implementation tends to be characterized by a good start and a poor continuation, because of lacking institutional responsibility, human resources, enforcement and monitoring. Second, there are conflicts among different government agencies. When there are benefits to be gained from involvement in a project, agencies compete with each other for the greatest share. When benefits are less significant, they shift responsibility among themselves. Third, the financial and human resources that would guarantee the successful implementation of laws and policies are lacking.

Regarding the laws and policies themselves, there are several main issues. First is the absence of documentation on the content and clauses of laws and policies. For example, when the government encouraged local farmers to develop barren land by auctioning use rights to barren land to individual households, it proposed that banks in some counties should offer loans to support farmers during the difficult stage of establishing and developing their forests. However, such informal arrangements create conflicts of interest between the systems operated by the financial organizations that provide the loans and those operated by the local government. Second, and more important, current laws regarding the forest tenure system do not distinguish clearly between forestry landownership and forest ownership; there are no specific articles regulating forest ownership. For instance, households and/or contractors have certificates for land use that do not regulate the ownership of forests on the land. The principle of "whoever plants trees owns them" lacks legal support and can be misinterpreted or violated by the local government for its own purposes.

It is worth emphasizing that local government has increasing opportunities to participate in policy-making and legislative processes. For instance, there was a slight difference in policy-making processes between the two hills system and the auction of use rights to barren land. The former took a purely top-down approach, with local government merely following central and provincial government directives, while the latter was not controlled by a national policy on auctions. Auctions were first held in one county in Yunnan province, with a province-wide regulation following almost two years later. Another example is the drafting process for the Rural Land Contract Law, which included an "experts' draft" aimed at accommodating advice and recommendations from experts, and a "consultative draft" to solicit feedback from broader society. All social groups and individuals were invited to offer feedback and recommendations on the consultative draft.

Despite improvements, there are still three main problems with government policy and legal procedures. The most important is that the majority of stakeholders – the landowning farmers – do not participate actively because there is no mechanism for involving them and they lack access to information. As a result, farmers frequently complain that they, as landowners, have no right to decide how to dispose of their land, including forests. The second problem is that some national policy and laws have not been fully implemented by local governments. This is why in some places villagers claim that the policy and laws implemented in their village are different from those they have heard about via radio or TV. The third problem is farmers' lack of effective channels through which to reflect their views to higher-level government agencies, especially at the provincial and central levels, which means that their rights cannot be protected legally.

trees get 200 kg of grain for eight years and 78 yuan for seedlings and social welfare; farmers who stop farming and cultivate grass get 200 kg of grain for five years and the same quantity of cash for seeds and social welfare.

Contribution to sustainable forest management and poverty reduction

Adequate and effective forestry policies and legal instruments are an important foundation for sustainable forest resource management and utilization, the harvesting of valuable forest products, the generation of cash incomes and the reduction of poverty. Considering general theories of property rights in the Chinese context, CDS has concluded from long-term research on forest tenure systems that adequate and effective forestry policies and legal instruments must simultaneously fulfil the following three basic requirements:

- Rights must be exclusive: they cannot be shared by two parties at the same time, although one party may possess many rights. This exclusiveness should be clear in terms of both policy regulation and legal instruments.
- Rights must have clear durations, which must be at least equivalent to the production cycle. "Security is enhanced if the duration of rights is either in perpetuity or for a period that is clearly spelled out and is long enough for the benefits of participation to be fully realized" (Ellsworth and White, 2004: 11). Any change in rights must be agreed by all the parties involved.
- Under the market economy the acquirement of any right must be at cost so that the owner is ensured a profit in addition to covering trading and operational costs (Zheng, Mu and Su, 2001: 11). This principle is not only at the core of institutional economics, but is also a fundamental requirement for institutional guarantees.

Linking these considerations with the analysis of forest tenure types in Yunnan, the following conclusions may be drawn regarding the contribution of forest tenure to sustainable forest management (SFM) and poverty reduction.

FOREST TENURE, SFM AND POVERTY REDUCTION

Forest tenure systems may affect SFM and poverty reduction in the following ways:

- *By affecting farmers' use rights to forest resources.* For instance, poverty reduction projects that focus on cash tree plantations may fail to meet their objectives because poor households have already lost their rights to barren land as a result of the auction policy.¹³ The logging ban may also frustrate rural families' forest ownership, as more than 24 million ha of forest was identified as natural forest from which farmers are not allowed to harvest any timber, including fuelwood, of which about 11.5 million ha has been planted. These policies run counter to the principle of "whoever plants trees owns them", as farmers who own natural forest have lost their forest utilization rights, and therefore also their interest in managing forests.
- By guiding the status and degree of local people's participation in projects, depending on their activeness and independence. Farmers are not willing to plant timber forests because the duration of contracts for using forestry land is unclear and because there are heavy taxes and fees related to timber harvesting. They prefer to plant cash trees or eucalyptus (despite the negative impacts of eucalyptus trees on the environment), which generate benefits more quickly. In principle, this situation could be improved by the Rural Land Contract Law, but this law has not been effectively implemented.

¹³ According to a CDS study, only about 20 percent of households acquired forest use rights after the forest auction policy was implemented in Yunnan province. This means that about 80 percent of rural families lost their rights to use wasteland, even for grazing animals and collecting fuelwood.

- By influencing management, and thus sustainability. For instance, the government's insistence that farmers sell all timber from freehold and shared responsibility hills to government-owned timber companies encourages farmers to manage fruit trees rather than timber ones.
- By affecting benefit distribution, and thus SFM and poverty reduction. The proportion of households that possess property rights to forest resources and the extent of those rights determine the scale and level of local farmers' participation in forest management, thereby influencing SFM and poverty reduction (Zheng, Mu and Su, 2001: 6).

Well-managed forest resources contribute to poverty reduction

Secure forest tenure ensures well-managed forests, which may contribute to poverty reduction and the improvement of farmers' well-being. One example is Xiaoshao villagers' committee in Kunming municipality, Yuliang county. The committee includes about 400 households and 1 400 residents, with total forestry land of about 47 000 mu (3 130 ha). About 40 percent of forests have disappeared since the two hills system was implemented in 1982. Logging was common throughout all the villagers' groups within the committee, primarily for building new houses and so that households could reap economic benefits from the forest while they held management rights. In 1988, the villagers' committee closed forests to farmers because "the hills were bare, the water sources were dry, and the people were poor". In 1990, all forestry land was formally taken back under village collective management. After about ten years, village leaders estimated that tree cover in Xiaoshao had returned to approximately its 1982 level, but village leaders had the problem of generating income to pay forest guards. They decided to contract the hills to individual households, which took responsibility for managing forests and were given exclusive rights to harvest mushrooms. This initiative was first introduced on an experimental basis in one villagers' group in 1992, when approximately 800 mu (53.3 ha) of forestry land was contracted out for a total of 3 400 yuan (US\$419) a year. In 1993 and 1994, other villagers' groups introduced the practice, but the contracted land areas remained small and collective income was minimal.

In 1995, the village adopted a different contracting approach, and non-villagers were allowed to contract management rights. As a result, the area of land contracted increased greatly, and collective revenues from contracting rose to approximately 360 000 yuan (US\$44 390). Village rules required that contracting fees be used to cover annual operating expenses, including staff salaries and public works projects for each villagers' group. The increased contracting revenues allowed villagers' groups to cancel all other collective contributions, taxes and fees that had been imposed on farmers, and additional profits were distributed among all villagers' group members on a per capita basis. Village leaders provided farmers with annual accounts of expenditures and profit distributions. The practice of including non-villagers in the auction process continued from 1995 to 2000, with contracting revenues increasing each year to a maximum of 630 000 yuan (US\$77 682) in 2000. In each year, the revenues were sufficient to cover all public works and to generate profits for distribution to villagers, although the amounts distributed varied among villagers' groups, depending on the extent of public works that were required and the amount of contracting revenue raised. Village leaders reported that many villages had used the revenue to undertake basic agricultural infrastructure improvements, such as village reservoirs and irrigation schemes.

In 2001, however, the villagers' committee reversed its rules for contracting to outsiders, while continuing to encourage village residents to participate in the auction process. This shift led to a reduction in contracting revenue from 630 000 yuan in 2000 to 580 000 yuan (US\$71 517) in 2001, but villagers' committee leaders were unanimous in their support for the decision. When asked whether they would favour allocating forestry land to households, farmers expressed opposition. Non-contractors replied that they were happy to receive annual profit distributions "without doing anything", and reported that the benefit distribution in their villagers' group the previous year had been 300 yuan (US\$37) per person. Contractors pointed out that management by a small number of contracting households, which lived on the contracted land during the mushroom season, was more efficient and ensured better forest protection while providing the opportunity for individual profits. In 2003, the villagers' committee decided to set up an ecotourism site for urban tourists; during the rainy season, tourists can learn how to look for and collect wild mushrooms, joining home stays and picnics, while in the spring they can enjoy the pristine natural environment (Schwarzwalder and Zheng, 2001: 16–18).

KEY FACTORS CAUSING UNSTABLE AND INSECURE TENURE

In China, the most important of the factors relating to unstable and insecure tenure for forest resources is the frequently changing government policy. Continuing with the story of Taohua villagers' committee, in 1998 the logging ban was enforced and all logging activities stopped. As a result, a successful local practice ended even though forest tenure remained the same. The collective ownership of forestry land and the private ownership of parts of forests became *de facto* obsolete. The logging ban not only threatened tenure security, but also undermined local activities, procuring the following negative impacts on local communities:

- The income from timber production and related activities such as labour and transportation plummeted. It was estimated that in 1999 total village income decreased by 2 million yuan (US\$246 609), or about 800 yuan (US\$100) per capita. More than 1 000 people (about 40 percent of the population) returned to poverty. Some villagers can barely survive, because their income was mainly from logging, charcoal burning and/or providing services to logging activities. They used this income to buy rice and other subsistence needs, and farmers currently have only a three to four month grain ration on which to survive for the whole year.
- The rapid decrease in income meant that many infrastructure plans could not be implemented, leading to conflicts between the villagers' committee and villagers' groups, which had an impact on the authority of the villagers' committee and on collective action.
- Following the loss of income and food support from both the villagers' committee and their families, about 150 students (50 percent of the total) had to stop attending Taohua primary school; children from poor upland villages were particularly hard hit. In addition, in 2000, 12 of the 45 students graduating from Taohua primary school were unable to go to high school.
- The decreased demand for labour services and the resulting labour surplus have created security problems and ethnic conflict. Upland villages, such as Lisu and Pumi, depended mainly on forestry for their livelihoods, and 80 percent of their grain supplies were bought with income from forestry. These villagers now depend on illegal logging for survival.
- Somewhat ironically, forest conservation and fire control activities in the area are also facing difficulties, as villagers have lost interest in conservation and fire prevention. In the opinion of many villagers, forest fires can even be a good thing because they made it easy to gather fuelwood and mushrooms, which can be sold. Illegal logging is extremely difficult to control.

Informal tenure arrangements

Many communities in Yunnan still practise traditional forest tenure systems, but the government has paid little attention to these. Such systems include the Naxi people's "public hills"¹⁴ in Lijiang municipality, and spiritual forests for minority groups such as the Dai, Yao, Miao and Zhuang. These kinds of informal tenure system are common property regimes and the main management approach is collective management, which seems to be adequate and effective. In 2001, CDS and the Rural Development Institute of the University of Washington conducted a joint field study of 13 villages in three counties (districts) of Yunnan province. This study concluded that: common property resource management of forestry land exists, to varying degrees, in all 13 villages; both local officials and farmers expressed strong support for common property resource management on some or all of their communities' forestry land; in many contexts, heads and farmers felt that common property management arrangements for forestry land have been as successful as, or more successful than, household contracting in terms of achieving important policy goals; and the national legal and policy framework for forestry land should provide increased flexibility in designing and implementing land tenure arrangements for forestry land based on unique local circumstances and

¹⁴ In which two or more villagers' committees share ownership of certain forest areas, taking a joint management approach and operating a benefit sharing system among their communities.

preferences, including common property resource management approaches (Schwarzwalder and Zheng, 2001: 36–37).

INCOMES AND BENEFITS GENERATED FROM DIFFERENT FOREST TYPES

In 2004, CDS collaborated with the College of Economic Trade at Yunnan Agricultural University on a survey in ten provinces of southern China, including Yunnan, where the survey covered six villagers' committees in six counties. The 232 sample households in Yunnan comprised 12.9 percent of the total sample households for the ten provinces. The results of this study show that the highest incomes and benefits were achieved by: shared responsibility hills for more than 57.0 percent of households in Yunnan (and about 28.6 percent of households in the ten provinces); freehold hills for 19.9 percent in Yunnan (40.5 percent in the ten provinces); collective responsibility hills for 16.7 percent in Yunnan; and contracting operation and management forestry land for 6.4 percent in Yunnan (CDS and College of Economic Trade, 2005: 100).

Regarding different management approaches, the highest incomes and benefits were achieved by: individual household management for 58.1 percent of sample households in Yunnan (72.1 percent in the ten provinces); collective management (villagers' groups and villagers' committees) for 23.9 percent in Yunnan; and joint management, including user groups and stock-sharing forest farms, for 17.9 percent in Yunnan (15.4 percent for the ten provinces) (CDS and College of Economic Trade, 2005: 111).

Economic implications of decentralized forest tenure

The economic implications of decentralized forest tenure in Yunnan are closely linked to farmers' livelihood security. During the early 1980s, when forestry land and parts of forests were allocated to individual households, most farmers were struggling at the edge of poverty and their livelihood sources were heavily dependent on farming activities and the few available sources of off-farm income. In these conditions, the allocation of forestry land and forests became an important means of livelihood. This situation was aggravated by the liberalization of timber markets. Many households chipped wood and sold it to obtain grain, salt and/or cooking oil. Timber harvesting became a source of tuition fees and other expenses for middle school students. This is why some studies conclude that the timing of liberalization policies regarding the two hills system was not appropriate (CDS, 2005: 29). Later, especially after the early 1990s, most rural families had enough food for their own consumption, and their economic situation improved dramatically. However, developing diversified income sources and increasing cash incomes became important considerations for most rural families. In this situation, tree plantations can be one but not the only option. In some places, rural residents would be happy to spend money in auctions for the use rights to barren land. In summary, forestry land allocated to individual households during the early 1980s helped them to alleviate poverty by harvesting trees, while during the early 1990s it helped them to improve their well-being by planting trees.

Environmental implications of decentralized forest tenure

The lessons learned from changes in Yunnan's forest tenure system arrangements since the early 1980s indicate that policy devolutions in forest tenure have diverse environmental impacts. The rapid changes in forest cover rates clearly illustrate the impacts of policy devolution on forests and the environment (see Figure 1).

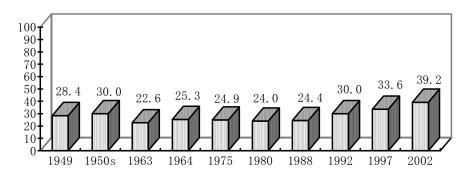


FIGURE 1 Changes in forest cover rates in Yunnan province

Figure 1 illustrates the great extent to which forest resources were destroyed during the Great Leap Forward (da yue jin) of the 1950s,¹⁵ as trees were chipped to provide fuelwood for steel and iron smelting all over the country. Within the 14 years from 1949 to 1963, forest cover decreased by 5.8 percent. The formulation of policies for forest tenure began in 1962, and identified forest property rights as the major motivating factor in people's planting of trees and protection of forests. As a result, forest cover increased, but not for long, as the Cultural Revolution (wehua da geming) and the People's Commune Movement (renmin gongshe hua yundong)16 revolutionized politics and the economy, respectively, in the 1960s and early to mid-1970s. During this period, forests and forestry land were taken back into State and commune ownership, and forest resources were seriously damaged as people lost the incentive to protect them. Subsequent policies at the beginning of the 1980s defined responsibilities for forest management, and were followed by the two hills system in the early 1980s. Figure 1 shows that during the 1980s forest cover remained roughly the same even though the government invested heavily in reforestation and forest management. The findings of the first forest resource survey conducted in 1987/1988 show that Yunnan's forestry land in 1987 amounted to 25 012 300 ha, of which forest covered 9 327 400 ha, increasing by only 125 400 ha. The volume of standing timber was 1 349 467 600 m³, an increase of 28 155 600 m³ (Yunnan Forestry Department, 1990: 5-17).

The two hills system gave farmers the opportunity to improve their livelihood security by harvesting forests. However, the cost has been environmental degradation. In some places, farmers not only logged trees, but also opened up forestry land to plant tobacco, sugar cane, grain and other cash crops, resulting in serious soil erosion on more than one-third of Yunnan at the end of the 1990s (Zheng, 2004: 230). The auction of barren land motivated farmers to plant and manage forests, as the policy strengthened their rights over forests. A survey of forest resources in Yunnan province, reports that forestry land grew from 23 911 700 to 24 247 600 ha between 1997 and 2002, an increase of 336 000 ha. The volume of standing timber increased from 1 488 357 600 to 1 548 594 000 m³, an increase of 59 236 400 m³ (Yunnan Forestry Department and State Forestry Bureau, 2003: 24–47).

Increased forest cover since the early 1990s improved the environmental situation greatly, but the structure of forests should now be given more attention in terms of its environmental impacts. In the last ten years, the area of cash tree planting has increased rapidly, and now accounts for 10 percent of total forest land. The results of this increase are decreased biodiversity and the decreased capacity of forests to prevent soil erosion and forest fires.

¹⁵ This policy aimed at increasing steel, iron and copper production so that China could match Western countries and break away from the control and limitations imposed by the former Soviet Union. Many blast furnaces were established in rural areas to produce steel, iron and copper, which consumed extensive areas of forest.

¹⁶ This political reform aimed at purifying the socialist system in rural China. It started in 1962 and took all the production materials in cooperatives and individual farming households into commune (later called production brigade) control. Each commune then arranged its own production plan and labour needs, allocating crops and very limited cash incomes to households according to their numbers of members and labour contributions. This system was revoked in the early 1980s with the introduction of AHRS.

CULTURAL IMPLICATIONS OF DECENTRALIZED FOREST TENURE

The allocation of forest resources to individual households resulted in the loss of indigenous knowledge on forest management. Indigenous knowledge and practices are created and improved through their use by social groups, especially ethnic minorities. Indigenous knowledge and practices for the utilization and management of forest resources are characterized by integration because of specific features of forest resources. Integration requires that all individuals within a community and/or social unit obey regulations and rules that are made collectively, so implementation involves all community members. It is difficult for an individual or household to sustain these regulations and rules. The allocation of forest resources to individual households for management therefore led to the loss, weakening or dilution of indigenous management systems.

Planning and monitoring system

A main reason why many forestry policies were relatively effective when first implemented but then deteriorated – "tiger head but snake tail" as described by local farmers – is the lack of support for policy implementation. Such support should include two basic aspects: institutional support and guaranteed human and financial resources. Regarding institutional support, the government usually forms a temporary agency or leading group, with a working group under it, to implement a policy. The members of many leading groups are directors of various departments and agencies and it is difficult to bring them together, for various reasons. Working group staff also come from different departments and agencies, and follow orders from their institutional leaders; the difficulties faced by the leading groups mean that many working groups cannot function effectively. The lack of financial and human resources contributes to the failure of some forest policy implementation, especially for local government, on which the burden of implementation falls.

Policy implementation also lacks a monitoring and evaluation (M&E) system. The main actors in implementing policy are local governments (county and township) and local communities, so implementation suffers if the local government lacks the motivation to participate actively. In such situations, there is no possibility for self-monitoring and evaluation, while there is also no special agency or science-based system for monitoring policy implementation. However, M&E is an important part of policy implementation, because it identifies problems, making it possible to find ways of resolving them, and eliminates conflict among different actors. At present, most M&E activities are carried out by government agencies and are usually understood to be checks of results and quality. There is no third party to conduct independent analysis.

Recommendations for moving forward

EMPLOY A HOLISTIC APPROACH

Currently there are two important tasks for forestry development in China. The first is to incorporate forest tenure reform into the overall reforms of China's forestry development strategy. Tenure issues are a key constraint to forestry development in many parts of China, but are certainly not the only factor and sometimes not even the most important one. Forestry development in Yunnan and across China also faces problems related to institutions, taxation, opportunity costs, markets and technology. Without the harmonization of forest tenure reforms with other issues, problems will continue to plague China's forestry sector.

The second task involves integrating further reform and improvements of forest tenure systems into China's larger property rights reforms. Forest tenure, especially property rights for forestry land, is an inseparable part of the property rights system for rural land. Some local governments have drawn up integrated land development plans, but there are no clear land classifications, so policies sometimes conflict when they are implemented; conflicts between forestry land and grassland and between forestry land and farming land are particularly frequent. Comprehensive reform and integrated land-use planning at the village group level should now be a top priority.

IMPROVE THE TWO HILLS SYSTEM ACCORDING TO LOCAL CONDITIONS

The two hills system has been an important initiative for rural land reform in China, and should be maintained. Improving the system according to different local conditions means giving more authority to local governments and communities to decide how to improve it within the broader context of national development policies and strategies.

Freehold hills

For the purposes of social equity, it is necessary to ensure that every willing household holds a certain area of freehold hills. This can be achieved through negotiations, supplemented by public bidding, with priority going to the previous holders. In other words, the rights of previous holders should be given preference in acquiring freehold hills, even if bidding results in higher prices. There is no need to consider the condition of forest stands because this depends on the previous holder's labour inputs. The duration of tenure can be 70 years, and longer in some remote areas.

Shared responsibility hills

Shared responsibility hills that are barren or covered with sparse, low-value forests or shrubland, and for which it is generally acknowledged that the previous contractor under the two hills system did not make any investment, should be auctioned off, giving the former landholder priority in acquiring them. Shared responsibility hills with forest that was planted by the former landholder under the two hills system should be transferred to that landholder at the same price as for barren land. Former landholders that cannot reacquire their land through public bidding should be compensated by the government. During this process, it is important to prevent illegal logging and forest destruction. The duration of this tenure can be 70 years.

Collective responsibility barren land

Bare hills, barren, low-value sparse forests and shrublands that are owned by collectives with contracted management can be regarded as barren land and their use rights transferred through public bidding and auction. Again, the duration of tenure can be 70 years.

Collective responsibility forest land

In principle, collectives are meant to use this type of land for establishing collective forest farms that increase collective revenues and provide technical services and seedlings for individual households. Where the collective cannot continue to run the forest farm, the land can be transferred through

lease or contract to organizations or individuals that can manage it. The tenure period should be decided between the two parties and specified in the contract.

LEGISLATE AND IMPROVE LAWS TO PROTECT TENURE

Based on reform efforts to separate forest ownership from forestry landownership, national policies on forestry development should focus on protecting private forest ownership. In order to protect farmers' private ownership of trees and other products from freehold hills, shared responsibility hills, contracted operation and management hills and other areas, the Standing Committee of the Provincial People's Congress should draw up specific regulations based on the principle that "whoever plants trees owns them". Local governments should provide legal services to farmers and other social groups to help them protect their legal rights and benefits. After implementation, modification and improvement, policies legalizing farmers' private ownership over forest could become law. The most important tasks underlying this process are experimentation to identify ownership over forests and the issuance of certificates to owners. Trials can start from villagers' committees or groups, and will be more effective if they take a participatory approach.

REFORM THE FOREST MARKETING AND TAX SYSTEM

Research indicates that forestry development in Yunnan is facing many structural problems. In many places, in addition to urgently required forest tenure reform, there is need for markets for forest products (timber and non-timber), reduced taxes and fees related to the control of logging and elimination of the impacts of higher taxes and fees on individual investments in forestry (Landcare, 1998). Many households still concurrently engage in agriculture, forestry and animal husbandry; if profits from forestry cannot be improved, these households will lose their incentive to claim use rights for barren land, and forest production will not be improved. To improve production, marketing development and reforms of the tax system are needed to form new incentive systems and help local communities utilize and develop forest resources. Such reforms include: 1) classification of the Reforestation Fund for different forest types so that loggers of natural forests pay full fees, loggers of semi-natural forests pay less than full fees – especially when they make large labour, material and capital inputs – and producers of planted forests pay no fees; 2) abolition of the special local products tax for agriculture and forestry; 3) abolition of the road construction charge, the forest road construction charge, the judicial services charge, the forestry administrative charge and other charges collected by county and township governments; and 4) regulation of strict measures to prohibit informal charging and irrational fees.

IMPROVE FOREST MANAGEMENT TOOLS

With further reform and improvement of China's forest tenure system and fee and tax systems, increasing numbers of forest farmers and other producers will engage in forestry. To anticipate this development it is necessary to improve forest management mechanisms focusing on the following activities.

Strengthening management approaches based on local communities' proactive participation: In order to reduce individual households' risk in forestry and to realize scale economies, the government should encourage households to adopt different operational and management systems, and particularly to establish forest farms based on shared stock systems. In these systems, local communities should have decision-making rights. Local government may help communities to learn from outsiders through study tours and farmer field schools.

Nurturing communities' social capital: An effective method for supporting secure and stable tenure for local communities is to foster communities' social capital. Currently, the most important approach to supporting social capital is to implement the Organic Law of Villagers' Committees and make villagers the true managers of their resources and community affairs. In addition, it is necessary to provide communities with ownership rights, allow them to take responsibility, and respect minority groups' culture, knowledge and practices. Villagers should be allowed to formulate regulations themselves, be responsible for the implementation and supervision of those regulations, and benefit from that implementation.

Enriching indigenous knowledge of forest management: Meeting the challenges and taking advantage of the opportunities in China's forest management requires discovering and extending indigenous knowledge and culture by transferring and improving indigenous knowledge and practices among communities, integrating the indigenous knowledge and practices of different communities and ethnic groups, and promoting interaction between minority and mainstream cultures.

ESTABLISH AN EFFECTIVE M&E SYSTEM

Department-specific supervision should be combined with broader social supervision. The Forestry Department's cross-checking of afforestation results provides a useful model for the departmental (or professional) supervision of forestry policy. Full advantage should also be taken of the People's Congress and People's Political Consultative Commission at different levels and of other social organizations, which could assume more permanent supervisory roles. At the same time, other monitoring methods are necessary, such as media, education and channels for formal redress.

When developing and implementing forest tenure policy, it is essential to establish an effective M&E system that includes consultation processes for when different areas carry out a new policy, problem identification and solution recommendation during implementation, and studies of persistent problems and approaches for improving policy and law implementation. The human resources of consultation organizations and research institutions should be actively involved in this.

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Trends in tenure arrangements for forest and their implications for sustainable forest management: the need for a more unified regime

Case study from Meghalaya, India

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Summary

India has a long and varied history of forest management dating back to the third century BC. For nearly 2 000 years, forest management systems succeeded in balancing State and community needs in terms of access and management practices. This all changed with the arrival of the United Kingdom colonizers, when the State became the absolute owners and community rights were converted into "concessions". The scenario of conflict that emerged from this situation has been well documented for much of mainland India, but not for the northeastern region, which in many ways is the cultural and geographic bridge between South and Southeast Asia. This paper explores forest management in one of the seven states in this overlooked region, Meghalaya.

Meghalaya had a long history of community forest management throughout the pre-colonial period, and although some of its best forest lands were annexed by the colonists, a substantial part of its forest estate remained in the hands of different communities. The process of changing forest management and tenure started after Indian independence, when tribal communities' calls for independence led to the creation of autonomous district councils and the codification of customary forest laws. For all practical purposes, community-controlled forest land started to be managed by the autonomous district councils.

Meghalaya became a state in 1972, and contains three autonomous district councils for Khasi hills, Jaintia hills and Garo hills. The State Forest Department is strong, but its management strategies and priorities diverge from those of the district councils. The last 30 years have seen widespread deforestation, because district councils' main concern has been revenue generation, and in most community-controlled areas timber extraction has been a major source of revenue. However, this scenario changed in 1996, when the Indian Supreme Court banned all forms of timber extraction that did not have approved working plans.

This paper argues that the emergence of multilayered management structures does not always lead to improved forest management, particularly when the focus is on revenue generation rather than conservation. It also argues that the emerging market economy is eroding the concept of community-managed forest, as resources are increasingly privatized and managed to meet short-term needs. The paper recommends that a more unified management scenario be adopted, in which management takes account of such issues as biodiversity conservation and ecosystem services. The main need is for a minimal number of institutions with strong and meaningful participation from local communities and a mandate to evolve more long-term and diversified forest management scenarios.

Introduction

India has a long and varied history of forest tenure and management systems, dating back to the second century BC. Tenure arrangements have varied from rigid State control to forms of community-controlled forest land, the nature of control being dictated by the needs of the State; for example, small-scale farmers and pastoralists were completely excluded from the elephant forests of the Mauryas. This situation of diversity continued until the arrival of the United Kingdom colonists (Gadgil and Guha, 1992), whose strongly utilitarian and mercantile philosophy had no place for the tenure rights of local communities. Overriding the claims of local communities, the colonizers proceeded to annex much of India's forest land through a series of legal measures that were introduced between 1865 and 1878 (Gadgil and Guha, 1992). During annexation, forest land was neither defined nor categorized (Rosencranz and Diwan 2001) – it all became State-owned forest land.

At present, according to the state forest departments, India has 76.52 million ha of forest area, constituting 23.28 percent of the country's total area. Forest area has been classified into reserved (54.44 percent of the total), protected (29.18 percent) and unclassified (16.38 percent) forest. Forest ownership is mainly with the government, but clans and communities own significant areas of unclassified forest in the northeastern states. Details of the forest area of each state are provided in Annex 1.

The seven northeastern states of Meghalaya, Mizoram, Nagaland, Tripura, Arunachal Pradesh, Manipur and Assam have the largest areas of unclassified forest in India, and these are controlled by

local communities with very little State control. Although the United Kingdom colonizers tried to introduce greater State control to this region in the nineteenth century, the combination of remoteness and resistance from the local people thwarted their attempts. Forest rebellions in the late nineteenth and early twentieth centuries halted the spread of reserved forests and the government annexation of clan lands, a situation that continues today.

THE MEGHALAYA CONTEXT

This study outlines the evolution of forest tenure practices in Meghalaya, with particular reference to the colonial and post-colonial situations. It also reflects on the implications of changing tenure patterns on forest management practices in the state.

Meghalaya covers an area of 2.24 million ha between latitudes $25^{\circ}02'$ and $26^{\circ}07'$ N and longitudes $89^{\circ}49'$ and $92^{\circ}50'$ E (see Annex 4 for location map). The state is mainly plateau except for narrow strips in the north, west and south. Elevation ranges from 150 m to 1 950 m above sea level. Major rivers of the state include the Simsang, Manda and Ganol in the Garo hills and the Umiam, Umtrew and Kupli in the Khasi and Jaintia hills. The western part of Meghalaya is warm, with mean temperature ranges of 12 to 33 °C, while the central upland is relatively cooler, with a mean minimum temperature of 2 °C and a mean maximum of 24 °C. Average annual rainfall varies from 4 000 to 11 436 mm, and Cherrapunjee and Mawsynram – which have the highest rainfall in the world – are located in Meghalaya. The state is hilly, the undulating hills in the north contrasting with the steep and abrupt slopes of the southern fault zone. This area is part of the Meghalaya plateau, which is the source of many rivers flowing into the Brahmaputra and Barak systems. The highest elevation in this area is Shillong Peak (1 961 m).

Forest resources

Meghalaya's forest land covers 0.95 million ha, accounting for 42.34 percent of the state's total area. Of total forests, reserved forests account for 10.33 percent, protected forests for 0.13 percent and unclassified forests for 89.54 percent. The control of most unclassified forests rests with the autonomous district councils of Khasi hills, Jaintia hills and Garo hills.

The forests of Meghalaya are rich in biodiversity and endowed with rare species of orchids and medicinal plants. Major forest types found in the state are subtropical pines, tropical wet evergreens, tropical semi-evergreens and tropical moist deciduous. Sacred groves, mostly located in the Khasi and Jaintia hills, represent particularly highly valued vegetation in the area. Based on satellite data from December 1998, forest cover is 15 633 km², or 69.7 percent of the state's total area. Dense forest covers 5 925 km² and open forest 9 708 km². The discrepancy between forest area according to land records and forest cover reported by satellite data is a major issue, and is probably mainly the result of land regeneration and fallowing during the process of shifting cultivation.

Classification of forests

The State Forest Department has classified the forests of Meghalaya into the following six categories (Tiwari *et al.*, 1999):

- Reserved forests (including government forests, national parks and sanctuaries) cover 993.0 km² and are owned and controlled by the State Forest Department. These forests are among the best in the state, and local communities have very few rights over them.
- Unclassified forests, which cover 7 146.5 km², are forests where local communities have all the rights and *de facto* control. Most of these forests are used for shifting cultivation.
- Private forests cover 384.0 km² and belong to individuals, who use them primarily for personal consumption.
- Protected forests cover 129.0 km² and are used by local communities, primarily for personal consumption. Local communities have rights to these forests, but they are controlled by the State Forest Department, which considers the status of protected forest as an interim measure; the department intends to convert these forests into reserved forests.

- Village forests, which cover 25.9 km², were demarcated and registered by the village community under the United Khasi–Jaintia Management of Forests Act 1958. Most of these forests are used for subsistence purposes.
- Community (Raij) forests, which cover 768.0 km², are large community forests (Raij means commune) that are managed by the Raij or commune head under the local administrative head.

These different types of forest have different impacts on people's livelihoods. Reserved and protected forests have very little direct influence on livelihoods, as they are managed almost entirely by the State Forest Department and local people cannot legally extract anything from them – especially not from reserved forests. Unclassified forests provide the backbone for livelihood generation, as these are the areas where most shifting cultivation takes place. Village, community and private forests are used mainly for meeting the subsistence needs of communities in terms of fodder and fuelwood.

Land tenure

Tenure arrangements are linked to the traditions of a society. The case of the Khasi and Jaintia hills is well documented; there are three major categories of landownership system in this area (Simon, 1996): community-owned areas; privately owned lands; and state-owned reserve forests.

COMMUNITY-OWNED AREAS

Community lands, including forest areas, have a number of uses, which are reflected in their names. In the Khasi and Jaintia hills, the functions and purposes of most forests are based on village administration and religious perceptions. Community forests are known as Law Kyntang, Law Adong, Law Lyngdoh, Law Shnong, Law Raij, Law Sumar, Law Kur, etc., denoting the usages to which they are supposed to be put (H.J. Symlieh, personal communication). Land tenure was not disturbed by the colonial presence in these areas, as only a few areas were acquired outright by the United Kingdom colonizers, while most of the smaller territories were treated as though they were beyond the borders of colonial India (Simon, 1996). After independence, the prevailing land tenure and practices were recognized and maintained in the district council legislation. The United Khasi–Jaintia Management of Forests Act of 1958, recognized Law Kyntang, Law Lyngdoh and Law Niam as areas managed and controlled by the Lyngdoh (religious head) or by the person or people responsible for carrying out local or village religious ceremonies. Law Shnong and Law Adong were defined as village forests for conserving water etc.; they are used by the villagers and managed by the Sirdar or head with the help of the village durbar.

Law Raij are looked after by the heads of the Raij or commune under the management of the local administrative head (Government of Assam, 1958). Law Ri Sumar belong to individual clans, while private forests belong to the individual or clan who established or has inherited them (Ri Kynti).

Most land in the Garo hills is forested and belongs to specific clans. These lands are known as A'king lands and are theoretically controlled by the community through the Nokma. However, the Nokma is a woman, and actual control of A'king land falls to her husband (Dutta, 2001).

In the Khasi and Jaintia hills, the presence of sacred groves and village forest is an integral part of tribal belief and culture, which gives divine connotations to the forests and groves where the village's spirit and god protectors (U RyngkewUBasa) reside. Recent tenure and management systems recognize the sanctity and status of such forests.

In the Garo hills, A'king lands are owned by the clans and managed by the clan heads. There are no sacred forests in the Garo hills, but the people believe that the spirits of the dead reside in thick forests. Garo forests are used for slash-and-burn agriculture with adequate return cycles, and other traditions are still followed, in spite of the many changes that have taken place (Dutta, 2001). All 7 146 km² of unclassified state forests is controlled by communities.

PRIVATE AND CLAN FORESTS

The establishment of private and clan forests is an age-old practice throughout Meghalaya, and is becoming more common in many areas as the drive to privatize resources gains momentum. Although private and clan forests cover a comparatively small area, when taken together with community forests they account for more than 88 percent of the state's total forest area.

According to the Forest Management Systems in Meghalaya project (Meghalaya Department of Forests and Environment, 2001), "sacred groves (Law Lyngdoh/Law Kyntang) with a total area of about 10 511.7 ha, are found scattered in different places of the Khasi and Jaintia Hills and are generally found below the hill ridges. These groves are considered to be the storehouse of a variety of plant genetic resources".

These groves range from 0.01 to 900 ha in area, and sometimes a stand of five to eight trees is given the status of a sacred grove (Tiwari, 1999). These patches of forest belong to the clan/community or individuals and are under the direct control of the clan council or local village durbar (Syiemships, Dolloiships, Nokmaships). They represent the unique forest ecosystem of the region and are very rich in flora and fauna, testifying to the efficacy of traditional forest management systems in the state (Meghalaya Department of Forests and Environment, 2001).

STATE-OWNED FOREST LAND

Although state-owned forest land is the smallest tenure system in terms of the land area managed, it is also the best funded and best managed owing to its strongly coercive management approach. State-owned forest land accounts for 12 percent of total forest area, but contains some of the best forests (see Annex 4 for forest map). State-owned forest land also benefits from central government funding, and given that most of these forests were acquired in the nineteenth century, there is a reasonably well staffed state bureaucracy to manage them.

The implication of these tenure systems is that there are multiple-stakeholders at the individual, clan, village and regional levels, with the state at the apex. This creates a very complex system with overlapping sets of responsibilities. Table 1 simplifies the categories of forest land, by including Raij land in the other categories, for example.

TABLE 1 Tenure arrangements in Meghalaya

Community forests	Sacred groves	Reserved forests	Protected forests	Private and village forests
7 916.0 km ²	105.0 km ²	993.0 km²	129.0 km ²	409.9 km ²

Institutions involved in forest management

Three major institutions are responsible for forest management in Meghalaya: the State Forest and Environment Department; the Autonomous District Councils of Garo, Khasi and Jaintia; and the community.

Formal forest administration seems to have arrived in the areas that now make up the state of Meghalaya sometimes in the 1870s. According to available records, the first reserve was Saipung Reserved Forest in the Jaintia hills, which was created with an area of 150 km² by Notification No. 26 of 25 July 1876. The most recent reserve to be created was Riat Laban Reserved Forest in the east Khasi hills, which was created with an area of 0.2 km² by Notification No. For. 179/80/187 of 28 March 1988. At present, there are 24 reserved forests within the state: three in the Jaintia hills; nine in the east Garo hills; seven in the west Garo hills; and five in the east Khasi hills. The total reserved forest area comes to 713 km², while the state's five protected forests cover a total area of 12 km² (Meghalaya Department of Forests and Environment, 2001). The reserved forests created by the Indian Forest Act of 1927 provide the most protection; all the community rights in these areas are restricted, and all entry and use are allowed only on payment of fees, which are deemed to provide concessions rather than rights (Gadgil and Guha, 1992). Protected forests are far more accessible to local communities, whose rights continue to be exercised in protected forests. The best forests were designated as reserved forests, and less valuable ones as protected forests.

The Forest Department of Meghalaya started to function independently in 1970 with two divisions: the United Khasi–Jaintia Hills Division and the Garo Hills Division. The department now has 17 divisions, with three more likely to be established in the near future. The main focus of the department is on ecosystem restoration, public awareness raising, afforestation programmes and the preservation of catchment areas. It has a total staff of approximately 450 people and a total annual budget of about US\$15 million.

Of Meghalaya's estimated total forest area of 9 496 km², only 993 km² is under the control of the State Forest Department. About 1 127 km² is managed by the district councils of Khasi hills, Jaintia hills and Garo hills as per provisions in the Sixth Schedule to the Constitution of India. The remaining forest cover is under community, clan and private landownership (Meghalaya Department of Forests and Environment, 2001).

TABLE 2 Meghalaya forest area

Total area of state	Reserved forest	Protected forest	Unclassified forest	Total forest	Percentage of total land area
22 429 km ²	981 km²	12 km²	8 503 km²	9 496 km²	42.3%

Reserved forests are managed according to five-year working plans, which are prepared by the state government; protected forests are managed mainly for the preservation of catchments areas. The State Forest Department collects royalties on all minor forest products and minerals from reserve forests and other forests that are controlled by the district councils; the department shares the revenues with the district council concerned in a ratio of 40:60 (Meghalaya Department of Forests and Environment, 2001).

STATE FOREST DEPARTMENT

The organizational set-up of the State Forest Department is as follows (see Annex 2 for an organization tree):

• Principal Chief Conservator of Forests and Chief Wildlife Warden;

- Chief Conservator of Forests (Social Forestry and Environment) and Chief Conservator of Forests (General and Wildlife), followed by Conservator (Social Forestry and Environment) and District Forest Officers for each district, and Conservators of Forests;
- four District Forest Officers for Wildlife and four for Research and Training;
- 250 subordinate service staff members, such as Forest Rangers, Deputy Rangers, Foresters, Forest Guards and ministerial staff of the Directorate of Forests.

The main responsibility of the State Forest Department is to manage reserved forests and the sanctuaries that have recently been set up for wildlife conservation. Until recently, the department followed a protectionist management approach that sought to keep people out of such areas, but recently it has started to constitute joint forest management and ecodevelopment committees. It receives grants from the central government to improve forest management, and is currently upgrading its infrastructure framework.

DISTRICT COUNCILS

The Sixth Schedule to the Constitution of India

Since colonial times, certain parts of northeastern India have been demarcated as excluded or partially excluded areas. These areas were inhabited almost entirely by tribal populations with their own indigenous and autonomous administrative and legal structures. The United Kingdom colonizers made separate legal provisions for these areas because they were reluctant to interfere in tribal matters.

After independence, the makers of the constitution also acknowledged the special status of the people in these excluded regions, who had not been included in the mainstream and were therefore behind in terms of development. The Sixth Schedule to the Constitution of India was promulgated in response to this recognition.

The Sixth Schedule is a very elaborate piece of legislation, which has undergone many changes through constitutional amendments, parliamentary legislation, presidential orders and central government notifications since it was first enacted. Put in simple terms, the Sixth Schedule gives excluded and partially excluded areas special status by granting them greater autonomy than other areas in the same state. The main motive for this special treatment is to protect the people in these areas from dangers, including the risk of losing their land to more sophisticated people from the plains, such as moneylenders (Hidayatullah, 1979).

Each district council has its own forest wing with personnel responsible for forest management. The State Forest Department arranges training in various aspects of forestry for the personnel of district councils, and sometimes deputes senior state forest officers to the district councils. At present, the forest wings of the district councils are each constituted by a Chief Forest Officer, an Assistant Forest Officer, 16 foresters, 32 assistant foresters, and 64 forest guards.

In response to sections 3 (a) and (b) of the Sixth Schedule, the state government transferred the administration, management and control of all forests other than reserve forests to the district councils in January 1956 (H.J Symlieh, personal communication). About 8 500 km² of forest came under the jurisdiction of district councils in this way. However, although the autonomous district councils are supposed to control most of the forest land in Meghalaya, they have very few human resources for doing so. In addition, most of the land they manage is plantation, so although the councils have developed forest bureaucracies, they have not really been following the notions of "scientific" forest management. In addition, they do not receive much funding from the state government.

In practice, these forest lands function as community land or private property (Ri Kynti), and are managed according to the customary rights and traditions of the local political set-up. The district councils have *de jure* ownership over the erstwhile colonial areas, such as the Sirdarship and B–Mahal areas, although these too tend to fall into local community control. In addition, a total of about 7.8 km² of Raij forest scattered throughout the Khasi and Jaintia hills is controlled by local communities (Meghalaya Department of Forests and Environment, 2001).

With the exception of reserve forest, the district councils collect 50 percent royalties from all their forests, but most of these forests are subject to hazards such as fire, cattle grazing and unscientific and random tree felling. Even since the Supreme Court's timber ban in 1996, sporadic felling of trees, bamboo, etc. continues in the forest areas managed by district councils. This may be owing to a lack of sustained effort, effective planning and well-thought-out protection for these forests on the part of the district councils (Dutta, 2001).

There are two sources of conflict in this complex managerial scenario. The State Forest Department has started to create ecodevelopment and joint forest management committees for sanctuaries and reserve forests, respectively. These are supposed to be participatory forest management units and have funding support for activities that include the establishment of plantations and medicinal plant nurseries, among other income-generating activities. The first source of conflict lies in the fact that the district councils have not introduced similar schemes to their forestry areas, so poverty alleviation receives very little attention in overall forestry planning throughout the state. The State Forest Department's innovations have remained out of reach for most people in Meghalaya.

The second source of conflict lies in the fact that the current legal regime grants district council control over much of the forest estate, but in reality the land is owned by local communities and people, who see forests as a resource to be mined for economic benefits. Local communities do not receive economic returns for forest preservation from the district councils, and so they have little interest in sustainable forest management. District councils have also tended to rely too much on revenues from timber and transit fees, while paying insufficient attention to the long-term implications of such forest exploitation. Thus, forestry provides income, but in a way that is not sustainable for the long term.

The United Khasi–Jaintia Management of Forests Act

Forest management in the Khasi and Jaintia hills provides an example of a system in which formal and non-formal management structures have been integrated. If properly implemented, such systems have tremendous potential for sustainable management.

The forests to which the United Khasi–Jaintia Hills Autonomous District (Management and Control of Forests) Act 1958 applies are classified into the following categories:

- *Private forests:* These belong to individual or joint clans and are situated on recognized inherited private lands (Ri Kynti).
- *Law Ri Sumar:* These belong to individual or joint clans and are situated on inherited, village or common Raij lands.
- Law Lyngdoh, Law Kyntang, Law Niam (sacred groves): These are set aside for religious purposes and are managed by Lyngdohs (religious heads) or other people with responsibility for carrying out the religious ceremonies of a particular locality.
- *Law Adong and Law Shnong:* These are reserved for the village and managed by the Sirdar and head with the help of the village durbar.
- *Protected forests:* These are areas for the growth of trees and forests that benefit the local inhabitants. They are managed and owned by the local village.
- *Green block:* These are forests belonging to an individual, a family, a clan or a joint clan. They are situated on Raij land that the government has declared "green block" for the provision of aesthetic beauty and water supply for Shillong town and its suburbs.
- *Raij forests:* These are looked after by the heads of the Raij and are under the management of the local administrative head.
- *District council reserved forests:* These have been declared as such by the Executive Committee.
- *Unclassified forests:* These were known as unclassed state forests before the Constitution of India. They are directly managed and controlled by the government and include forest(s) not falling within any of the other classifications.

The 1958 act can be considered a pioneer act for forest administration within the district council areas of northeastern India. Most district councils continue to apply it today, with minor modifications. In 1960, the United Khasi–Jaintia Hills Autonomous District Rules were added, according to which all the private forests – including sacred groves (Law Lyngdoh, Law Kyntang and Law Niam) – in the areas of district councils are to be registered (Chapter I section 2) with the Chief Forest Officer, giving the home addresses of all the people owning forest, together with the forest boundaries and other particulars.

According to the Principal Act (Act I of 1989), Law Lyngdoh, Law Kyntang and Law Niam are to be managed by the Lyngdoh or person(s) to whom the religious ceremonies for the particular locality or village(s) are entrusted, in accordance with customary practice and subject to the rules that may be framed by the Executive Committee from time to time (section 4 (b)). The Lyngdoh is a religious and not an administrative head.

No timber or forest products from Law Lyngdoh, Law Kyntang and Law Niam can be removed for sale, trade or business. To remove any timber or forest product required for religious purposes, the Lyngdoh can apply through the Local Administrative Head for a free permit from the Chief Forest Officer or any forest officer authorized by the Executive Committee to act on the chief's behalf (Rule 31 [9] of the 1960 rules). Although this makes it seem as though the state controls the use of timber and other products from these forests, this system has hardly ever operated, and permission is seldom sought. The reasons for this failure to function include a lack of coordination among different managers, resulting in the creation of extra bureaucratic layers of decision-makers, which in effect have converted local village decision-making bodies into recommendatory bodies.

The permits issued by the Chief Forest Officer or the authorized forest officer of the district council specify the quantities of timber and other forest products that can be removed, provided that no trees are felled unless they have been marked by an officer of the district council or sanctioned by the Lyngdoh for religious functions or ceremonies.

TRADITIONAL INSTITUTIONS IN THE KHASI–JAINTIA HILLS IN THE POST-COLONIAL ERA

Local government institutions are one of the pillars of the Indian administrative system, particularly in the frontier areas. The practice of self-governance is centuries old, even in the Khasi hills, and predates much of the modern terminology now used to describe it. Khasis have been managing their own social, economic and political affairs through Syiems (chiefs) on the basis of freely given popular consent for many generations (H.J Symlieh, personal communication).

Khasi politics are state- rather than village-based, and there are 25 Khasi states, 16 of which are Syiemships, while one is a Wahadadarship (Wahadadar means civil official), three are Lyngdohships (sacrificer or priestly king) and six are Sirdarships (village chief or elder). The non-states (which were called British areas in the colonial administration) comprise 32 villages, which are divided up into Doloiships (deriving from the Tibetan for a religious shrine) and Wahadadarships with jurisdictions over groups of villages. Sirdars and Dolois have similar powers to those of Laskars.

The Syiem is the head of the state and runs day-to-day administration with a cabinet, which administers markets, collects fines, etc. The Syiem and cabinet also act as the judge and jury in judicial cases, according to the functions assigned to them by the district council. In the past, the Syiem also determined foreign policy. Syiems are hereditary positions with limited powers; they are maintained by market levies, which are sometimes shared with the cabinet members. Syiems have no power to make laws and their authority over the departments assigned to them is clearly defined. Owing to the matrilineal inheritance tradition, Syiems are succeeded by their nephews or brothers. This rule subsists in appointments to all offices in the state. Women are not entitled to succeed as Syiems, unless there is no male heir. Women are however the custodians of ancestral property, and the Syiem-sad – the mother, maternal aunt or sister of a Syiem – is regarded as the custodian of state ceremonies and the titleholder of crown lands. A system of dual Syiemship has been set up in some states, where two Syiem families administer the state together. The state is known as the Hima, implying that it has organic and ethical unity. The Ki khun–ki hajar, or indigenous population, is exempt from taxes, but other residents are not.

FIGURE 1 **Traditional Khasi institutions** DETAILS ON HIERARCHY OF KHASI TRADITIONAL INSTITUTIONS HIMA.(Territory base) SYIEM(Chief) Mynrtis elected from different clans form the Executive base of the HIMA RAID (SmallerTerritory base) SYIEM(Chief) Basan elected from different clans form the Executive base of the RAID SHNONG (Village base) RANGBAH SHNONG Elected Members from the different localities form Executive of the Shnong KUR (Clan base) RANGBAH KUR Т Prominent members of the clan form the Executive & elderly members are elected to represent in the Executive of the HIMA & RAID ÏNG (Family base) The family specially the mother & father play an important role

With the onset of the Sixth Schedule and the establishment of the district councils, continuation of the political, social and economic roles of traditional chiefs has created contradictions and conflicts, even though the Sixth Schedule was set up to safeguard customs and traditions. District councils function more as custodians than administrators because they lack the long-established relationship with the people – which includes belief in the divine agency of traditional rulers – that forms the foundation of traditional government in the Khasi–Jaintia hills. This has lessened the democratic spirit of government in these areas (H.J. Symlieh, personal communication).

TRADITIONAL INSTITUTIONS IN THE GARO HILLS

In the Garo hills, the land is not under the direct control of the district council, but instead belongs to the clan as A'king land. It is under the custody of its female head, the Nokma, whose husband acts on her behalf in all clan decision-making; the Nokma has no authority to take decisions on land and its use. Decisions are meant to be collective among representatives of the clan. These lands include large areas of thick forest.

Sacred groves are under the control of the Nokmas, whose jurisdiction covers 15 to 20 villages each. The beliefs attached to sacred groves in the Garo hills are similar to those in the Khasi and Jaintia hills; groves are protected and cannot be used for any purpose (Tiwari, 1999). Forest areas that are not used for cultivation are also left untouched, and trees cannot be felled in a radius of at least 10 m around springs and other sources of water. Other land, known as B Mahal, is under the direct control of the district council, which can use it according to its needs.

FIGURE 2 Traditional institutional set-up in the Garo hills District Council Nokma Clan executive A'king land

CHANGES IN LAND TENURE

Given the complexity of the different systems in force in Meghalaya, forest management is bound to be complicated. Although there was little visible change until the 1970s, attitudes have gradually been transforming, and less value is now attached to forests and sacred groves. As a result, tenure is also changing, but conflicts continue to arise. The move from traditional community (collective) systems to unknown private systems is unlikely to strengthen communities, and may create problems in the future. It is also important to note that changes in tenure are likely to lead to changes in society's value system.

Case studies

KHASI HILLS

In the Khasi hills, there are many sacred groves – their exact number is not known. Some of these forests have degraded, but others are standing the test of time. Locally, sacred groves are known as Law Kyntang, and they have been created since time immemorial. Overseeing and protecting the groves is the prime duty and responsibility of the local Lyngdoh. It was the Lyngdoh, along with the village head and elders, who originally consecrated the forest to sylvan and village deities, and the cutting of trees and removal of forest products are prohibited, except when they are used within the precincts of the forest.

Among the sacred groves that still exist is the one at Mawphlang. This was established about 500 years ago for revering and offering sacrifices to the god protectors of the village (Lyngdoh of Mawphlang, personal communication). Tyrna also has a surviving sacred grove, which was established some time after the 1897 earthquake.

Mawkhlam-Nongpyndeng in the west Khasi hills is an example of a sacred grove that has ceased to exist. Instead, the villagers have resolved to keep a large tract of land under forest, even buying more land from local people to add to it. In this area there are about 19 forest patches, which are for community use at various times. Management of these forests is solely by the community, and people can exploit the benefits of some forest patches, while the use of others is restricted.

JAINTIA HILLS

Among the sacred groves in the Jaintia hills is Jowai, whose date of establishment is unknown, although it has existed for a very long time. This sacred grove is associated with the religious festival Beh Dien Khlam, and rituals are performed in it at the end of the festival when a rooster is sacrificed.

The sacred grove at Umsiang village in Ri Bhoi district is no longer used for religious rites and has recently been converted by its private owner (with traditional legal approval) for the planting of betel leaves. This village has a good forest conservation record, and stopped logging activities even before the 1996 ban on timber extraction was introduced (H.J. Symlieh, personal communication).

GARO HILLS

Some A'king lands have been transformed from forests to plantations, mainly of cashew, orange, tea, rubber, pepper and coffee. Such use of forest land is usurping the community's traditional land rights, which can be transferred permanently and claimed even after many generations (Nimesh Ved, personal communication).

Discussion

HISTORICAL SETTING

In Meghalaya, land tenure has been a significant issue for many generations. Most of the population depends on subsistence agriculture, but there is also a flourishing iron industry in the Khasi hills. Such products as iron implements, orange, betel leaves, areca nuts, cotton and herbs are sold in the plains, and food items are bought.

In general, the colonial period had little impact on land tenure, except in a few areas such as Shillong, where leasing was introduced. The post-independence period also saw few changes, because the local government (the United Khasi and Jaintia District Council and the Garo Hills District Council at that time) maintained existing land tenure conventions. The transition to a district council-based management system was in many ways the main change in forest management, but the emergence of the district councils as land managers brought problems to the forest areas (apart from government ones) over which they had control, because the councils' forest management was very poor and there was almost no control of tree felling.

The district councils owed their new importance to a combination of factors that enabled them to emerge as the owners of forests in Meghalaya. Among these factors was the fact that – compared with the rest of India – Meghalaya had made no real forest acquisitions (Dutta, 2001). In addition, the early twentieth-century uprisings based on forest grievances in the Garo hills had resulted in forest reservation being viewed as a last resort. These situations were aggravated by the passage of such laws as the United Khasi–Jaintia Management of Forests Act (1958) and the Garo Hills District Forest Act (1958).

The critical issues to emerge in the early post-independence era were that notions of management were very vague, the framers of the relevant legislation had not clearly defined what they meant by such terms as "looking after", and there were no working plans or scientific guidelines for forest management. These omissions would come back to haunt forest administrators about 30 years later, but at the time the situation was considered adequate.

THE CURRENT ERA

The onset of a predominantly market economy changed the situation in Meghalaya in the 1970s and 1980s. Timber extraction suddenly became very lucrative because there was a substantial market for timber in the plains to the north. Timber extraction was supposed to be regulated by the district councils, but two factors hampered and discouraged their activities in this regard. First, although district councils had constitutional authority to manage forests, and the local chieftains were supposed to be under their authority, most traditional chiefs did not acknowledge the councils' authority. Second, the councils depended on transit fees and other cesses on timber exports, which in some cases contributed up to 70 percent of council revenues.

An example illustrates this situation. According to the Garo Hills Forest Act of 1958, a levy (called an A'will fee) could be paid by anyone, including outsiders, who wanted to extract forest products from A'king lands. The money raised from these fees was divided between the Nokma and the council in the ratio of 25 to 75 percent, resulting in uncontrolled depletion of forest cover on a massive scale. By the beginning of the 1990s, it was clear that most forests outside the reserve forests were seriously depleted and degraded. At that time, the State Forest Department was questioning the district councils' technical competence to manage their forests and was seeking greater control of state forests in response to the risk of widespread deforestation (T.T.C Marak, personal communication). Forest management was seen to contribute little to local sources of livelihood because most chiefs or district councils made few efforts to redistribute the income from A'will fees or to use it for value addition of products or livelihood generation. In addition, many landowners were using their timber resources to accumulate income rapidly, without paying any heed to

sustainability issues. Timber extraction itself had little impact on livelihoods as it was monopolistic (H.J. Symlieh, personal communication).

The stage was set for a major confrontation as reports of widespread deforestation in northeast India emerged from the forest survey of India and other agencies. In 1996, the bubble burst, when the Supreme Court of India intervened to preserve the forests of northeast India in response to reports of illegal timber felling and the Forest Conservation Case, which had been filed in February 1995 (Rosencranz and Diwan, 2001). Relying on evidence from satellite images, the court concluded that extensive deforestation had taken place and ordered a total ban on timber extraction throughout northeast India, irrespective of forest ownership. Forests in the autonomous district councils were clearly included in this ban. In a stroke, all timber operations in the region were deemed illegal. This came as a deathblow for the timber industry, but in many ways it led to the development of real forest management. In 1998, the court permitted the resumption of logging for operators whose working plans had been approved by the central government. The court's main intention was to systematize and regulate the forest management scenario of India's forested areas, thereby filling the gap left by the United Khasi-Jaintia Management of Forests Act, which codified customary notions of usage and management, but made only very cursory reference to sustainable and systematic management. Through a series of orders, the court clearly outlined the organizational process of forest management and proposed some best practices for forest management in the northeastern region (Rosencranz and Diwan, 2001).

In Meghalaya, the illegitimization of the timber trade meant that many landowners had to return to previous sources of income (H. Karbih, personal communication), local-level functionaries lost their main source of income and the district councils lost a substantial part of their revenue base, although the exact sums concerned are difficult to establish. (Annex 3 outlines the revenue loss for state forest corporations.) On a more positive note, steps have since been taken to convert a laissezfaire regime into a more regulated one. All three district councils have drawn up work plans and submitted them to the central government, but the plans have yet to be cleared (Deputy Chief District Forest Officer, Khasi Hills Autonomous District Council, personal communications). The State Forest Department persists in its belief that the district councils lack the technical competence to make viable and sustainable work plans, which are undoubtedly complicated by the ruggedness of the terrain and the multiplicity of landowners involved.

NEEDS AND LESSONS LEARNED FOR THE FUTURE

At present, the main need is the will to continue the process of regulation; a combination of approaches may be the best option, and it might not be possible to initiate all of these simultaneously. The legal system also needs to be reformed to take into account the management of forests for ecosystem services and biological diversity, rather than continuing with the old mindset of "forests are for timber only". The capacity of district councils needs to be upgraded and their land management role emphasized, in contrast to their current role as the collectors of revenue. Landowners need to be compensated and provided with financial incentives to change their land-use practices. The orders of the Supreme Court are pointers in this regard, as they direct the central government to provide monetary and non-monetary incentives for forest-rich states. The Government of Meghalaya can definitely benefit from this and help to improve forest management in the state.

No full land survey has been carried out in Meghalaya, so it is difficult to assess the success of forest management throughout the state (D. Wahlong, personal communication). However, it seems that nearly all examples of successfully managed community forests are sacred groves, most of which have been managed for a very long time, and there are very few examples of new forest conservation initiatives. This probably has more to do with specific conditions in Meghalaya than with any intrinsic flaw in the concept of using district councils for forest management. In other parts of the northeastern region, district councils seem to be better managed. In Mizoram, for example, they have their own reserve forests and demarcated village reserves, and much of the original biodiversity has been preserved (Singh, 1996). Another significant development in some areas is the emergence of youth organizations, such as the Young Mizo Association (YMA) and similar student organizations in Nagaland. These have started to discuss conservation and are making efforts to convince their local communities to set aside land for conservation; village student organizations act as watchdogs for YMA reserves in Mizoram and village wildlife reserves in Nagaland for example.

Such initiatives need to be encouraged in Meghalaya if the state's forest areas are to survive. The district councils in Meghalaya need to develop greater commitment to the principles of good governance, rather than viewing themselves as the providers of bureaucratic jobs. The three district councils in Mizoram offer good examples in this regard.

CONCLUSION

While traditional institutions in the colonial and pre-colonial periods were reasonably successful forest managers, changes and conflict arose when district councils were introduced as the managers, when in reality they were just the overseers. The situation was exacerbated by the emergence of a lucrative timber market, which encouraged landowners to extract timber rather than manage their forests. In spite of the subsequent Supreme Court orders that sought to establish scientific management, problems persist because none of the actors are properly equipped to carry out the new responsibilities thrust upon them.

The main need now is to build district councils' capacity to work with local communities in promoting better notions of forestry. Although the councils may be the *de jure* owners, it is the local leadership that controls forests, and policy prescriptions need to take this into account by creating incentive systems for different stakeholders to encourage them to think beyond timber. The Supreme Court Order regarding biodiversity fees to be disbursed to biodiversity-rich states offers a good starting point in this. Today's forest ownership and institutional framework need to adopt more of a stewardship paradigm that takes a more long-term view of the returns from forestry and forest management.

RECOMMENDATIONS FOR SUSTAINABLE MANAGEMENT IN MEGHALAYA

The following recommendations can be made for sustainable forest management in Meghalaya:

- The State Forest Department should be developed as a service provider for landholders, encouraging them to concentrate on non-timber forest products.
- The district councils need to think less about earning revenue and more about management.
- The state should provide non-monetary and monetary incentives to communities that are successfully protecting their forests as ancient sacred groves or modern biodiversity reserves.

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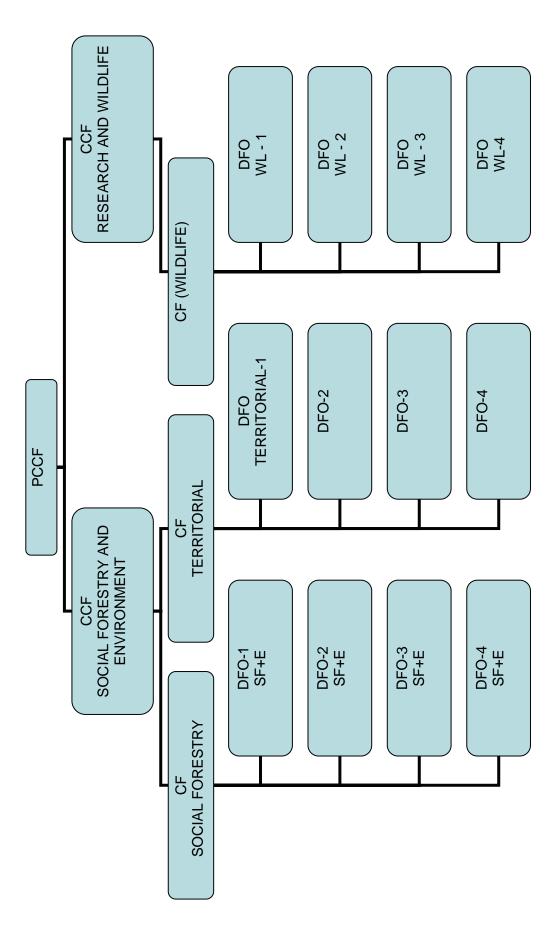
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State	Area	Reserved forest	Protected forest	Unclassified forest	Total for est	Percent of total area
Andhra Pradesh	275 068	50 479	12 365	970	63 814	23.20
Arunachal Pradesh	83 743	15 321	8	36 211	51 540	61.54
Assam	78 438	18 242	3 934	8 532	30 708	39.15
Bihar	173 877	5 051	24 168	7	29 226	16.81
Delhi	1 483	78	7	0	85	2.83
Goa	3 702	165	0	1 259	1 424	38.46
Gujarat	196 024	13 819	997	4 577	19 393	9.89
Haryana	44 212	247	1 104	322	1 673	3.78
Himachal Pradesh	55 673	1 896	31 473	2 038	35 407	63.60
Jammu and Kashmir	222 235	20 182			20 182	9.08
Karnataka	191 791	28 611	3 932	6 181	38 724	20.19
Kerala	38 863	11 038	183		11 221	28.87
Madhya Pradesh	443 446	82 700	66 678	5 119	154 497	34.84
Maharashtra	307 690	48 373	9 350	6 1 1 9	63 842	20.75
Manipur	22 327	1 463	4 171	9 520	15 154	67.87
Meghalaya	22 429	981	12	8 503	9 496	42.34
Mizoram	21 081	7 127	3 568	5 240	15 935	75.59
Nagaland	16 579	86	507	8 036	8 629	52.04
Orissa	155 707	27 087	30 080	17	57 184	36.73
Punjab	50 362	44	1 107	1 750	2 901	5.76
Rajasthan	342 239	11 585	16 837	3 278	31 700	9.26
Sikkim	7 096	2 261	285	104	2 650	37.34
Tamil Nadu	130 058	19 486	2 528	614	22 628	17.40
Tripura	10 486	3 588	509	2 196	6 293	60.01
Uttar Pradesh	294 411	36 425	1 499	13 739	51 663	17.54

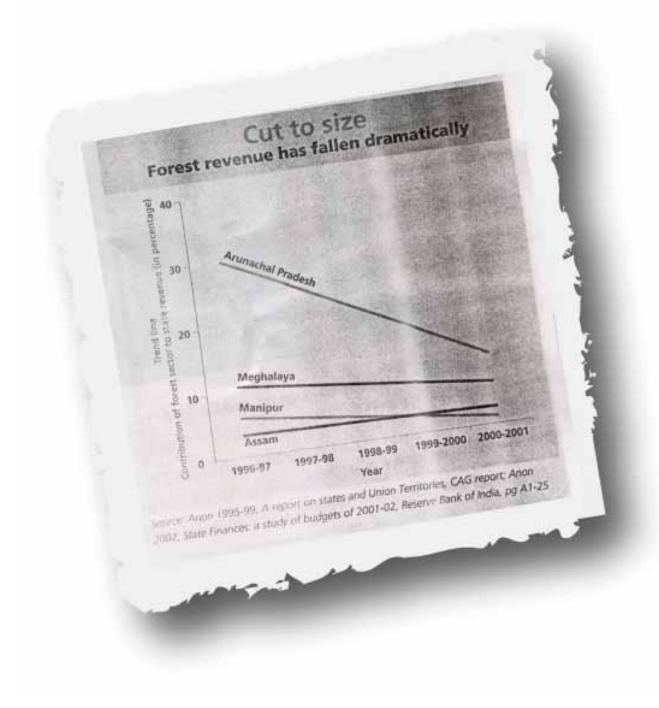
West Bengal	88 752	7 054	3 772	1 053	11 879	13.38
A&N Islands	8 249	2 929	4 242	0	7 171	86.93
Chandigarh	114	31	0	0	31	27.19
Dadra and Nagar Haveli	491	198	5	0	203	41.34
Daman and Diu	112	0	0.7	0	0.7	0.62
Lakshdweep	32	0	0	0	0	0
Pondicherry	493	0	0	0	0	0
Total		416 547	223 321	125 385	765 253	23.28

Source: State forest departments.

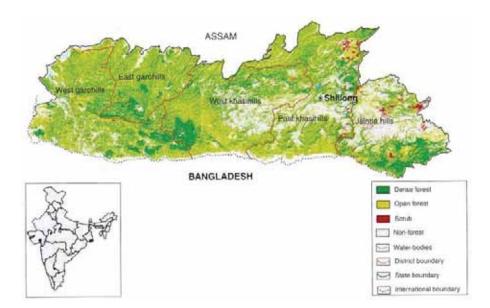
ANNEX 2: ORGANIZATION TREE FOR MEGHALAYA STATE FOREST DEPARTMENT



ANNEX 3: DECLINES IN FOREST REVENUE FOLLOWING SUPREME COURT ORDERS



ANNEX 4: FOREST COVER IN MEGHALAYA



Trends in forest ownership, forest resources tenure and institutional arrangements: are they contributing to better forest management and poverty reduction?

Case studies from Orissa, India

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Summary

Orissa has a multiplicity of different forest tenure systems and provides an excellent opportunity for studying various aspects of forest management and tenure, particularly their contribution to sustainable forest management (SFM) and poverty alleviation (PA). The poverty of the people and the scarcity of livelihood opportunities have given rise to many community-driven (bottom-up) approaches and government (top-down) initiatives. This study presents six types of forest resources tenure, five of which occur on state lands: national parks and wildlife sanctuaries, two multiple-use forest management regimes, joint forest management (JFM) and community forestry initiatives. The sixth tenure type is industrial forestry on private land.

National parks and sanctuaries are classified under the Wildlife Protection Act of 1972 and cover 796 185 ha. Two multiple-use forest management regimes are classified under the Indian Forest Act of 1927: reserved forests cover 1 964 000 ha, and protected forests 2 401 000 ha. Reserved forests have clear boundaries and good management plans and constitute the state's most intensively managed forests. Protected forests are less clearly defined, and are beset by uncertainties. Among these, the unsettled nature of their boundaries is a source of serious public discontent, particularly in tribal communities, and is contributing to the rapid destruction and degradation of forests.

JFM is a recent initiative arising out of the 1988 National Forest Policy. It involves sharing forest benefits and forest management responsibility between the state and the community, and it currently covers 652 258 ha. Selfinitiated community forest management (CFM) covers 186 900 ha, most of which is in protected forests under State control. The communities involved in CFM may be groups of households, individual hamlets or villages, clusters of villages or federations of 80 to 90 villages. Private forests cover 1 8471 ha of forest land, which is used for industrial objectives.

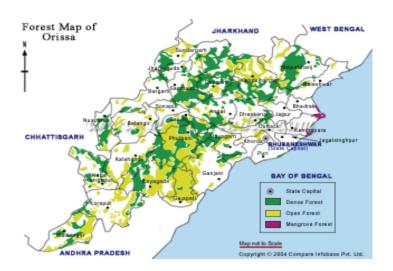
For each of these types of tenure, the paper provides a short description of the institutional arrangements, legal basis, current status and trends, and analyses the impacts on SFM and PA. It makes a comparative evaluation of the tenure types, and presents recommendations for the future.

Disclaimer: The aim of this paper is not to criticize or commend a particular system of forest management or the parties involved in it, but to assess how effective each system has been in maintaining the integrity of forest ecosystems and contributing to the socio-economic development of forest-dependent communities. The discussion aims to help guide the choice of appropriate options for different forest management situations and to improve existing systems of forest management.

The formal and legal basis

Orissa is located on the eastern coast of India and covers a total area of 15 570 700 ha. Its population of 37 million inhabitants (Director of Census Operations, 2001) works out at 2.4 people per hectare; Orissa accounts for 4.7 percent of India's total area and 3.6 percent of its population. The state is well endowed with natural – mineral, marine, agricultural and forest – resources, but has a high level of poverty at 55 percent of the population, compared with the national average of 39 percent (NCAER, 1999).

FIGURE 1 Forest cover in Orissa



Orissa has 5 813 600 ha of forest land, but only 4 836 600 ha of this is covered with vegetation (FSI, 2003). The main forest types are northern tropical semi-evergreen and moist deciduous; the main commercial timber species are sal (*Shorea robusta*), pia sal (*Pterocarpus marsupium*) and asan (*Terminalia tomentosa*); and among the main non-timber species are bamboo, kendu (*Diospyrus melanoxylon*), mahua (*Madhuca indica*) and tamrind (*Tamrindus indica*).

Orissa follows the National Forest Policy of India, which emphasizes the need for balance between ecology and local use rights. The Orissa Forest Act of 1972, which is modelled on the Indian Forest Act of 1927, provides the legal basis for forest management and serves as an important tool. Since the act was enforced, a number of additional laws and rules have been framed to control and manage various activities related to the planning, control and development of forests and wildlife resources (see Annexes 2 and 3).

In 1980, forestry became a matter for central government control, and the Indian Forest Conservation Act was passed. This act aimed to control indiscriminate deforestation by obliging states to obtain central government approval before forest land can be used for non-forestry purposes. States must also compensate for the forest land affected, by establishing plantations that are twice the size of the deforested area. The act has been very effective in slowing down the rate of deforestation, but less successful in controlling the process of forest degradation.

The Orissa Forest Department (OFD) was established in 1936, during the colonial period, and is currently headed by a Principal Chief Conservator of Forests. The forest area is divided into 27 forest divisions, each of which is under a divisional forest officer; the smallest management unit is a "beat", which is under a forest guard. Working plans are updated every ten years, and research, extension and training services are involved in maintaining and improving the quality of forest management and ensuring a sustainable supply of goods and services. OFD has 280 professional officers and 3 171 forest guards, implying ratios of 21 000 ha per professional officer and 1 830 ha per forest guard.

Table 1 presents a summary of the forest ownership classes and management regimes used in this study. Annex 1 provides statistics on the state in matrix form.

Ownership/contractual regime	Operational forest management regime
I. Public ownership	Owner is the exclusive manager:
	– national parks/sanctuaries;
	 reserved forests under multiple-use management;
	- protected forests under multiple-use management.
	Devolved management rights:
	– joint forest management (JFM);
	– community forest management (CFM).
II. Private ownership	Private forest management.

TABLE 1 Ownership patterns and forest management systems in Orissa

TYPE 1: NATIONAL PARKS AND WILDLIFE SANCTUARIES

National parks and sanctuaries cover 5 percent of the state's land area and 13.7 percent of its forest area, encompassing most critical habitats. Two national parks cover a total of 99 070 ha, and 18 wildlife sanctuaries cover 697 115 ha. Similipal Tiger Reserve has an area of 275 000 ha, which overlaps with Similipal National Park (84 570 ha) and Similipal Sanctuary (190 500 ha). The Wildlife Wing of the Forest Department, with its staff of wildlife wardens, is responsible for wildlife management under the Wildlife Protection Act of 1972.

TYPE 2: RESERVED FORESTS

At present, OFD manages 1 964 321 ha of reserved forests. These were constituted under the Indian Forest Act of 1927 (see Annex 3), which restricts communities' rights to the collection of fallen fuelwood and non-timber products from these forests. Reserved forests are well demarcated and managed according to a long-established written code, which is updated every ten years. Some of these forests have been managed since 1886, when grazing control and fire prevention were introduced and regeneration operations implemented.

TYPE 3: PROTECTED FORESTS

Protected forests constituted under the Indian Forest Act of 1927 cover 2 400 836 ha and are managed by OFD. The boundaries and rights of local communities for this group of forests are not yet clear, and the forests have transitional status only. Protected forests are divided into demarcated protected forests and undemarcated protected forests (see Annex 3), depending on the progress made in forest settlement.

According to law, the land is under the Revenue Department's control, while tree growth is under OFD. Most protected forests are close to or within the geographical boundaries of revenue villages and are recorded in the Revenue Department's Record of Rights as, for example, gramya jungle (village forest). This is confusing, as village forests are legal entities under the Orissa Forest Act.

Before independence, protected forests belonged to princes and landlords. The State annexed them after independence, declaring those with some evidence of earlier management "deemed reserved forests", and the others "protected forests". These forests are reported to include some shifting cultivation areas, which are used by approximately 150 000 tribal families. Land with a slope of more than 10 degrees has been declared government land and has not been surveyed, even though some tribes traditionally live on such hills. This has resulted in public unrest and fears of eviction in the communities that may be the rightful owners of the land.

TYPE 4: JOINT FOREST MANAGEMENT

In India, JFM was formally introduced with adoption of the 1988 Forest Policy, but participatory forest management has a much longer history in Orissa, which OFD has continued by encouraging local communities to protect and manage government forests close to villages. The Swedish

International Development Agency (SIDA)-assisted Social Forestry Project gave new impetus to the movement from 1984 to 1994, when timber, fuelwood and fodder plantations were established on village land in cooperation with local people. Village forest committees (VFCs) were officially constituted to protect and manage these newly created forests under the Village Forest Rules of 1985.

On 1 August 1988, the Government of Orissa issued a resolution making provisions for villagers to undertake legally defined responsibility for protecting the forests adjoining their villages in return for concessions that help them to meet their requirements for fuelwood and small timber, under section 24 of the Orissa Forest Act 1972. Divisional forest officers were made responsible for constituting forest protection committees (FPCs) for selected villages.

A further step was taken by a Government of Orissa Resolution of July 1993, following the Government of India resolution on JFM of 1990. The Orissa resolution provides detailed guidelines for local community involvement in the protection of forests through the formation of village-level forest protection committees, called Van Samrakshan Sammittees (VSS), with their own executive committees, duties and responsibilities. A state-level steering committee, chaired by the Forest Minister, was also constituted to monitor and guide implementation of the resolution.

These and other initiatives, taken at different times and by different agencies, gave rise to a movement towards participatory forest management, as summarized in Table 2. The statistics reported in Table 2 may differ significantly from reality because some communities and forest areas are included in more that one programme or have since disappeared altogether.

TABLE 2

Evolution of participatory	forest management in Orissa
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SN	Type of committee	Number	Area (ha)
1	Village forest committee (VFC), 1985	9 141	118 122
2	Forest protection committee (FPC), 1988 and 1990	4 928	1 007 705
3	Van Samrakshan Sammittee (VSS), 1993	1 473	142 318
4.	Unregistered forest protection group (CFM)	769	114 841

Source: OFD, 1999.

Participatory JFM arrangements for the protection and regeneration of degraded forests are now well established in Orissa. According to the latest available report, in 2003 (see Annex 4) 6 822 VSS were protecting 652 258 ha of forest. OFD's main responsibilities in JFM are: assisting in the selection/demarcation of the forest area for JFM; preparing the JFM micro-plan, and obtaining approval and budget for its implementation; transferring sound silviculture and soil conservation skills to VSS members; and guiding the implementation of JFM micro-plans. Recent resolutions indicate that there is a tendency towards greater decentralization and benefit sharing with communities (see Annex 5).

TYPE 5: COMMUNITY FOREST MANAGEMENT

Community forest management (CFM) represents the antithesis of State forest management, and is sometimes referred to as "self-initiated community forest management". In Orissa, CFM has no legal basis and is purely informal. Several local tribes are known to have their own active forest protection groups, but very little has been reported or written about these. However, according to a Directorate of Social Forestry survey, there were 2 509 CFM groups/villages in 1999, informally covering a total area of 186 900 ha throughout the state. CFM is more widespread in protected than reserved forests. A sample survey in three districts shows that local non-governmental organizations (NGOs), OFD and the communities themselves are all instrumental in initiating the CFM movement (Singh, Sinha and Mukherji, 2005). CFM is a very healthy sign that communities are taking responsibility for controlling forest degradation and deforestation.

The communities involved in CFM can be a group of households, a settlement or hamlet, a cluster of villages or even a federation of 80 to 90 villages; the areas under protection range from a few to 10 000 ha.

Planning and control of CFM appears to be steered by village or hamlet representatives, who are selected or elected according to local customs and traditions. These traditional institutions are responsible for organizing meetings, where rules and regulations for the management and monitoring of CFM forest resources are collectively decided. The committees also decide how benefits from the resources should be shared, and set punitive measures (social and monetary) for offenders. In CFM, all management issues are discussed and decided in the specific context of the village concerned, taking account of the local community's needs. This village-level operation makes CFM one of the most decentralized systems in existence.

TYPE 6: PRIVATE FOREST MANAGEMENT

Actors in the paper industry approached the government for allotments of forest land for plantations that would satisfy the industry's raw material requirements; so far, however, their requests have not been fully satisfied. Many paper mills are now encouraging farmers in Orissa to grow plantations of Casurina, Acacia and Eucaplytus species. The industry assists individual farmers by supplying seedlings and through buy-back arrangements. One Orissa company – the JK Paper Mill – helped farmers to establish 18 471 ha of plantations in 12 districts. To begin with, the mill had to struggle to encourage farmers to plant trees, but once a few successful plantations had been planted, more and more private farmers started to approach the mill, which expects to be procuring all its hardwood requirements from plantations in the near future.

Changes and trends

TYPE 1: NATIONAL PARKS AND WILDLIFE SANCTUARIES

Although the area of land set aside for conservation has remained relatively unaltered, the number of animals in the protected areas is reported to have increased significantly: tigers are up from 17 in 1972 to 99 in 2001/2002, and in 1999 the other animals reported included 67 leopards, 500 spotted deer, 450 wild elephants and 350 gaurs. Visits to the parks indicate that there is very good management of wild animals and forest cover.

TYPE 2: RESERVED FORESTS

OFD's gradual loss of authority over forests started soon after independence. At present, the management of forests through strict guidelines for sustained yields conflicts with local people's unauthorized cutting to satisfy their immediate fuelwood and grazing needs, which are estimated to have increased significantly since independence. Politicians often make policy decisions without consulting foresters.

The Indian Forest Conservation Act of 1980 and the logging ban are examples of the actions taken by the legislature and the judiciary, respectively, to prevent rapid deforestation and the overexploitation of forest resources. However, these measures have not been able to stop unsustainable fuelwood collection, grazing and timber smuggling by organized gangs, the impact of which is illustrated by the fact that in 2001/2002 a total of 58.98 million rupees (RS – slightly more than US\$1.37 million) of illegally harvested forest products were seized, together with 1 140 vehicles. This should be compared with the total revenue received by the state from timber and fuelwood in the year 1999/2000, which was RS52.1 million – less than the value of the smuggled goods seized.

Encroachment and shifting cultivation have become major problems in forest management. Table 3 shows the cases of encroachment offences that OFD booked in one reserve forest block in Rayagada Forest Division covering an area of 10 223 ha, with sal (*Shorea robusta*) as the dominant species. The quality of forest in this area is good, but shifting cultivation has already denuded some of the best forests and is now extending to new areas. Cases of encroachment or smuggling offences often take a long time to be settled and usually end in acquittals.

Year	Cases booked	Area (in acres) encroached	No. of trees felled	Remarks
1999/2000	17	20	454	The case history does not record the
2000/2001	14	3	1 267	area encroached, so the actual area is much greater than that recorded here.
2001/2002	26	10	897	

TABLE 3 Forest encroachments

Source: OFD 2005, field survey reports.

As a result of the logging ban, non-timber forest products (NTFPs) have become the main source of state revenue; their percentage share rose from 35 percent in 1981/1982 to nearly 90 percent in 2001/2002 (Table 4). Kendu leaves (*Diospyrus melanoxylon*) generated three-quarters of the total revenue from forests.

Year	Total income from forests	Income from NTFPs	NTFPs' contribution
	(million RS)	(million RS)	(%)
1980/1981	372.6	131.9	35.4
1990/1991	1 090.1	904.7	82.6
2000/2001	845.0	757.0	89.5

TABLE 4 Annual revenues from NTFPs

Source: OFD, 1991; 2005.

TYPE 3: PROTECTED FORESTS

The finalization of protected forest boundaries and rules has been very slow (Table 5). Statistics indicate that in the last 30 years only 119 000 ha of protected forests have been notified as reserved forests, and 640 000 ha have been transferred to other land-use categories (e.g., non-forest or degraded forest land).

TABLE 5 Forest areas by legal class

Legal status	Forest area (ha)				
	1957/1958	1972/1973	1981/1982	1999/2000	
Reserved	2 246 000	2 590 000	2 504 000	2 709 000	
Protected	4 316 000	3 885 000	3 492 000	3 008 000	
Total	6 562 000	6 475 000	5 996 000	5 717 000	

Source: Sahu and Das, 1997.

Because of these unsettled conditions, no effective forest management can be introduced in this vast forest territory. A 1972 report noted with concern that "this valuable asset is being ruined at a much greater rate than is normally imagined. The low level of production of 0.17 m³/ha speaks of a very low level of management. The forests are surely capable of producing at least twice as much, if not more. The revenue would also correspondingly double itself. If timely steps are not taken, this valuable asset will be lost for ever" (Ministry of Environment and Forests, 1972).

TYPE 4: JOINT FOREST MANAGEMENT

During the last ten years, JFM has spread very rapidly in Orissa, and OFD has taken concrete measures to create local institutions for forest protection and management. The nature of usufruct sharing is evolving constantly, and when committees are constituted, women's representation is ensured. There are reported to be 6 822 JFM committees protecting a forest area of 652 258 ha, compared with 1 473 VSS protecting 142 318 ha in 1999 (see Annex 4).

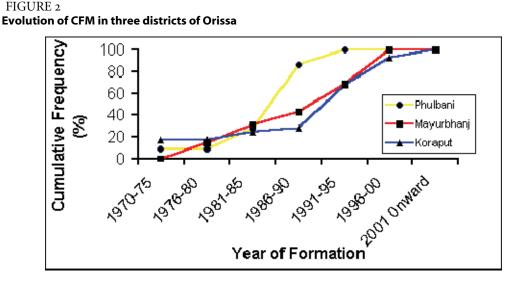
Forest development agencies (FDAs) at the forest division level represent an innovative mechanism for decentralizing power in forest protection, development and expansion. FDAs pass all money for development activities directly to the communities or JFM committees concerned. In order to reduce the demand for fuelwood, cooking gas is being supplied to forest and forest fringe dwellers, free of cost to start with.

The lack of progress in forest settlement is the main bottleneck for the further advancement of JFM. Land is the main source of livelihood for rural people in Orissa, and the non-settlement of rights poses the greatest threat to JFM. While the exact number of people whose rights are affected is not known, it is likely to be large.

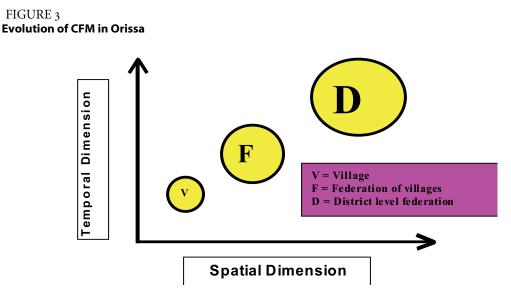
TYPE 5: COMMUNITY FOREST MANAGEMENT

CFM was initially concentrated in Dhenkanal, Mayurbhanj, Koraput and Sundergarh districts, and is now spreading rapidly to others. Singh, Sinha and Mukherji (2005) report that CFM has become a mass movement in Orissa, even though it lacks any legal basis. From a field survey of three districts,

the authors found that 69 to 75 percent of the existing committees were formed in the last 15 years (Figure 2). This trend indicates the strength of demonstration in spreading CFM.



As well as spreading from village to village, the CFM approach is also showing a trend towards the formation of federations, which provide smaller, village-level institutions and communities with better protection and bargaining power for their NTFPs. The formation of Budhikhamari federation was supported by OFD and the local politician, while collective action at the village level has also led to inter-village cooperation and the development of federations of CFM groups ("F" in Figure 3), which are playing an important role in addressing livelihood concerns.



The Nayagarh federation provides a good example of the challenges faced by federations at the district level ("D" in Figure 3). This is a large federation, but because it is a forum and not a registered society, OFD contests that a small number of people are using it for their own vested interests. The exercise of rights over forest is beyond OFD's control, and such alienation may create a situation of chaos when the timber value of the forest has been fully realized. It is therefore felt that OFD should be able to mobilize and harmonize CFM, including by increasing communities' sensitivity to forests.

TYPE 6: PRIVATE FOREST MANAGEMENT

When it became difficult to procure bamboo and royalty rates increased, the paper mills started to use different technology and reduced their need for bamboo. In the past they used 50 percent bamboo and 50 percent hardwood for paper making, but now they rely mostly on locally grown plantations of Eucalyptus, Acacia and Casurina species, and the proportion of bamboo has declined to 15 percent. Home-grown bamboo is preferred because it requires fewer chemicals than forest bamboo. Currently, the paper industry procures 3 500 tonnes of home-grown bamboo from Assam and Bengal and produces 350 tonnes of paper per day.

Status and impact of different forest management regimes

TYPE 1: NATIONAL PARKS AND WILDLIFE SANCTUARIES

In general, wildlife management has been very effective, as reflected by the increasing numbers of animals in parks and sanctuaries. The Wildlife Protection Act is an important legal instrument in protecting wildlife against the pressures of a growing population and the commercial interests of poachers. All of India is dedicated to conserving its rich biological diversity.

The government-sponsored Eco-Development Programme is playing an important role. This programme combines conservation measures with economic development of the people residing in and around sanctuaries and national parks, in order to reduce their dependence on forest products and improve the ecological health of the protected areas. The aim is to increase the productivity of land and forest resources so that alternative sources of employment and income become available to forest dwellers. Examples of the measures introduced include developing agriculture, improving land productivity, developing minor irrigation schemes, establishing fodder and fuel plantations, livestock care and improvement, introducing fuel-saving devices, providing medical care and family planning, and building environmental awareness.

TYPE 2: RESERVED FORESTS

There is no doubt that the Indian Forest Act of 1927 prevents the major loss of reserved forests by providing a sound basis for the settlement of boundary disputes, the protection of local rights and the effective control of illegal activities. However, a side-effect of OFD's strict implementation is the arousal of public anger and increased threats to forest staff.

OFD acknowledges that the "reserved forests are not fully stocked and moist deciduous forests are changing to dry deciduous types and becoming more vulnerable to fire. It is estimated that 50 percent of reserve forests are under various stages of degradation, with 30 percent being in severely degraded state with a canopy cover less than 20 percent". Among the reasons cited for the degraded condition of forests are increased smuggling, shifting cultivation, head loading and other biotic pressures. Since enactment of the Forest Conservation Act in 1980, about 26 608 ha of forest has been converted to industrial and other development projects.

The ongoing ban on green logging (since 1992) is a response to the perception throughout India that forest harvesting in the past was unsustainable and adversely affected the long-term ecological and environmental balance. Table 6 sums up the most important strengths, weaknesses, opportunities and threats (SWOT) in state forest management in terms of forest area. The system seems to be facing a great challenge that is unprecedented in India's history of forest management. An ideal solution would be for the state and communities to join hands, as described later in the section on lessons learned.

Strengths	Weaknesses	
Disciplined, organized staff	Short tenure, lack of staff continuity	
Long history, tradition and culture	Poor motivation, no incentives for doing good work	
Technically sound, well-trained personnel Operational, even in remote, isolated areas	Use of obsolete technology, poor application of researc in the field	
Well laid-out forest policy, legislative support, rules and regulations	Work in isolation, poor communication skills, lack of publicity	
	Inadequate funds and investment	

TABLE 6 SWOT analysis of forest sector administration

Opportunities	Threats	
Increased public involvement in forestry and the environment	Increasing human, livestock and biotic pressure on forests	
Funding from international and national agencies	Encroachments on forest and regularization of encroachers	
Access to modern technologies to improve resource		
management	Low government priority to forestry	
Growth of agroforestry and farm forestry	Political interference	
Work with other agencies and sectors	Conflict of policies with other sectors	

Source: D' Silva, 1995.

TYPE 3: PROTECTED FORESTS

While reserved forests occur in large blocks, protected forests (which are also called revenue forests as the land is under the control of the Revenue Department) occur in small patches interspersed with habitation. Table 7 illustrates the distribution of population in forest areas of various sizes.

Forest area	No. of villages	Total forest area (ha)	Population
< 100 ha	24 861	580 308	13 067 735
100–500 ha	4 036	841 184	2 445 513
> 500 ha	405	358 461	411 520
Total	29 302	1 779 953	15 934 768

TABLE 7 Village populations in forests areas of various sizes

Source: FSI, 1999.

Protected forests are affected by local rights and privileges, and subject to heavy shifting cultivation. The protection and management of forests that are less than 100 ha and surrounded by villages poses a formidable challenge, and it is generally accepted that forests are degrading under immense biotic pressure.

The present situation has enormous implications for forest management. For a start, OFD is unable to develop any kind of management plan for protected forests, and in the absence of working plans, the department is prevented from harvesting any timber from these forest lands by a Supreme Court ruling. Thus, even if the current State ban on felling in protected forests were lifted, OFD would not be able to undertake harvesting operations. Its ability to do so in the future is also doubtful unless forest surveying and boundary settlement are completed.

TYPE 4: JOINT FOREST MANAGEMENT

Many questions have been raised about the sustainability of JFM. Most forestry institutions still retain the titles, structures and functions designed during colonial times, and there has been little change in the training and terms of references of staff members such as conservators of forests, working plan officers, divisional forest officers, range officers and forest guards.

JFM is an innovation that places sustainable forest management (SFM) within the framework of integrated area development, where it can contribute to poverty alleviation (PA) in the forested regions of the country. Any forest management system must have a strong element of community participation if it is to be sustainable; the government is taking steps to increase community involvement in forest management, as reflected in successive government orders and resolutions since the new Forest Policy was declared in 1988. The challenge is for JFM to become a real people's movement, as described in the next section, and for OFD to assume the role of facilitator, adviser and capacity builder in the greening of India.

TYPE 5: COMMUNITY FOREST MANAGEMENT

CFM groups recognize that their operations have no formal or legal basis. On their own, they have little chance of survival, so they are forming federations in order to mobilize cohesive support. CFM

groups also acknowledge that OFD has an important function in supporting CFM efforts, but they are not willing to change from community governance to OFD-controlled JFM. The following observations on CFM forests were made during a sample survey (Singh, Sinha and Mukherji, 2005):

- The forests under most CFM groups are well-stocked, with canopy of more than 60 percent.
- The stands are regenerating naturally, indicating strict protection.
- The dominant species of most CFM stands in Khandamal and Mayurbhanj is sal.
- Strict measures to regulate fires and felling have been introduced.
- Soil moisture has increased, owing to leaf litter accumulation.
- Biodiversity has been enhanced by the protection of fruit and NTFP-bearing trees.
- Trees for household construction are marked and felled under the supervision of concerned members.

Collective action for forest protection has strengthened local institutions and enabled villagers to take up the management of other common pool resources. In some cases, women's involvement in forest protection has increased their self-confidence and ability to deal with the outside world, including government officials.

Singh, Sinha and Mukherji (2005) used a sampling approach coupled with remote sensing to collect their data on CFM. The use of a multi-date remote sensing survey provided change matrices for the years 1990 to 2000 and revealed that CFM practices are – on the whole – contributing to significant increased forest. The CFM system was found to be effective and self-sustainable.

Part of the fieldwork was aimed at identifying communities' awareness of and responses to VSS; their responses regarding different aspects of JFM were mixed. People's reasons for participating in community-driven conservation varied, and only 30 percent of the villages sampled in Kandhamal opted for CFM because it gave them symbolic rights over a patch of forest for conservation, thereby helping them to protect it from neighbouring villages. Some communities felt that VSS had been formed too quickly and involved too few people. In Mayurbhanj, some villages stated that they were willing to join VSS for two main reasons: to obtain symbolic rights over forest patches, thereby helping to protect them from other villages; and in anticipation of grants for village development.

Rural livelihood sources were broadly categorized into agriculture, forest and daily wage labour. Agriculture is the main source of livelihoods in all three survey districts, with the highest value recorded for Koraput (Table 8). The scope to enhance agricultural productivity in the study area is limited because most agricultural land is rainfed. The focus on developing village infrastructure through various government-sponsored programmes over the last decade has created increasing wage labour employment for local people, and this now constitutes a significant proportion of the overall rural economy. In the absence of other opportunities, however, forest is still an important component of livelihoods; its contribution to livelihoods is greatest in Mayurbhanj and least in Koraput, while wage labour's contribution follow the reverse pattern.

	Kandhamal	Koraput	Mayurbhanj
Total population	648 000	1 178 000	2 223 000
Forest as main livelihood source (people)	194 000	94 000	911 000
Current forest area (ha)	539 000	148 000	413 000
Forest as main livelihood source (people/ha)	0.37	0.64	2.20

TABLE 8 Forest's contribution to livelihood in the three survey districts

Source: Singh, Sinha and Mukherji, 2005.

Among CFM's most important contributions is its reversal of the historic trend of deforestation in the study area. Two of the three districts surveyed – Kandhamal and Mayurbhanj – registered increased forest cover since 1990, particularly Kandhamal. Koraput, on the other hand, showed a continuous decline from 60 to 17 percent over the past 40 years, but there are signs of this reaching a plateau. The continuous decline in Koraput is mainly the result of rampant shifting cultivation.

Per hectare, forests in Mayurbhanj provide the greatest contribution to local livelihoods (Table 8), as the communities in this district are the best organized for processing and marketing NTFPs and have good institutions for forest protection and harvesting. The ranking of social capital from forest protection and resource use in the three districts is Mayurbhanj first, followed by Kandhamal and then Koraput.

TYPE 6: PRIVATE FOREST MANAGEMENT

The development of forests under private ownership and in close cooperation with forest industries is very encouraging, and follows the recommendations of the 1988 Forest Policy that "forest industries should raise the raw material needed for meeting their own requirements, preferably by establishment of a direct relationship between the factory and the individuals, who can grow the raw material". Although limited in area (18 471 ha), private forests are making a useful contribution to forestry development.

Visits to the Eucalyptus plantations around Rayagada showed that progress has been made. Some of the plantations had been harvested, and the coppice crops were close to harvest, promising increased yields with no or only very little extra cost to farmers. The paper mill publishes annual reports on the farmers who have benefited from the plantations. On average, Eucalyptus plantations grown from ordinary seedlings yield 50 tonnes/ha after six years, and the second rotation crop is expected to yield 50 percent more than this. Clonal plantations are expected to yield twice as much. The net income per hectare ranges from RS57 000 to 87 000 (US\$1 300 to \$2 000) with a six-year rotation. This income makes plantations attractive to farmers, particularly on land where agricultural crops cannot produce comparable incomes in the absence of reliable irrigation facilities.

Farmers are reaping significant benefits from the paper mill's plantation programme, and it would be beneficial to find some way of involving the poor people who depend on cutting down forest for shifting cultivation in such plantation programmes. In some areas, good agricultural land is being used for forest plantations, while in others natural forest is being cleared to make way for agriculture. It would be worthwhile looking at the whole scenario of land-use practices.

CONTRIBUTIONS TO PA AND SFM

The concept of poverty has evolved over time, with the emphasis shifting from economic development (e.g., income and consumption) to social issues such as education, health and the vulnerability and powerlessness of poor people. Poverty is now seen as depriving people of their basic human capabilities, rather than merely forcing them to survive on low incomes. Among forest dwellers in India, poverty is the result of small agricultural holdings, lack of irrigation facilities, poor soil, weak infrastructure and facilities, and remoteness from markets. Given the poor returns from agriculture and the limited opportunities for enhancing productivity, forests can play a vital role in reversing poverty, provided that policies are integrated with the social, ecological and economic needs of the society.

Forest management's contribution to PA requires the empowerment of forest-dependent communities, the building of their social capital, and mitigation of the constraining factors that make them more vulnerable to drought and disasters. The more involved the community is in the management system, the greater that system's impact on poverty reduction. CFM has not received much government attention, especially in OFD. Some NGOs have carried out a survey of CFM, but OFD regards this survey as poorly designed and its findings as biased. OFD has always asserted that communities protect their own forest patches, but systematically destroy forests outside these areas.

The concept of SFM has also evolved. In the early stages, sustained timber production was the main goal, then NTFPs came to prominence, and later environmental services. NTFPs have a major impact on the economy of tribal communities, but many NTFPs are used for subsistence only, and their contribution has not been properly accounted for. A holistic view of all the factors concerned is required before the role of forest management systems in SFM and PA can be properly evaluated.

Table 9 presents a subjective evaluation of the contributions of six forest management regimes to PA and SFM in a scale from 1 to 5, defined as follows: 1 = very poor; 2 = poor; 3 = satisfactory; 4 = good; and 5 = very good.

Management system	Average	Contribution to	Contributions	to SFM	
	score (%)	PA	Ecological	Economic	Social
1. National parks and sanctuaries	50	1	5	3	1
2. Reserved forests under multiple-use management	70	3	4	4	3
3. Protected forests under multiple-use management	30	3	1	1	1
4. JFM	75	4	3	4	4
5. CFM	80	5	3	3	5
6. Private forest management	55	3	1	5	2

TABLE 9 Subjective scores of different forest management systems

In Table 9, CFM, JFM and state forest management score fairly highly for both PA and SFM; the management of national parks and sanctuaries and of private forestry score low for PA, but have the highest marks in their respective fields – conservation and contribution to production forestry, respectively. Protected forests have the lowest overall score, as they are not sustainable and contribute relatively little to PA.

Lessons learned and future challenges

Two major issues for the future can be highlighted. The first relates to the development of an SFM system for NTFPs, and the second is concerned with the empowerment of forest dwellers.

MANAGEMENT, UTILIZATION AND MARKETING OF NTFPs

The issues related to NTFPs are the same in all forest resource tenure and management systems, and therefore need to be tackled from a broad viewpoint. Management of NTFPs is not included in any of the existing management regimes, despite NTFPs' vital importance for SFM and PA. As shown in Figure 4, all the phases of NTFP management contribute to the development of local communities. An integrated (sustainable) management and marketing system for NTFPs needs urgently to be developed.

Harvesting (collecting) from the wild is the most primitive way of benefiting from an area's resources. Cultivation implies modernization and includes soil preparation, sowing, planting and breeding. Irrigation and fertilization sometimes change the relevance of natural production factors drastically, and usually entail temporary or permanent changes to the quality of natural sites.



FIGURE 4 Integrating the management and marketing of NTFPs

NTFPs are currently divided into the following three categories of regulation:

- *Nationalized NTFPs:* Three items kendu leaves (*Diospyrus melanoxylon*) since 1963, sal seeds (*Shorea robusta*) since 1973, and bamboo (*Dendrocalamus strictus* and *Bambusa arundinacea*) since 1988 are nationalized forest products, whose procurement and trade are directly controlled by the government.
- *Lease barred items:* Most of these are items whose harvesting affects the trees bark, leaves, oilseed and gums. They are restricted and directly controlled by OFD.

• *Deregulated NTFPs:* The procurement and trade of these 68 NTFPs have been largely freed from OFD's regulatory control. Ownership was transferred to local governing bodies called Gram Panchayats (GPs) in March 2000, and the Minor Forest Produce Administration Act was passed in 2002.

The results of deregulating 68 NTFPs have been mixed. Only a few are traded in significant quantities, and prices have declined for many. In addition, the system has increased uncertainty for traders, as there are usually many players at the local level, which creates competition. In most areas, OFD staff would like to renationalize these NTFPs, but NGOs are of the opinion that capacity building for GP institutions and the self-help groups of primary collectors could address some of the anomalies.

In the meantime, GPs are neither equipped nor well-placed to handle the procurement and trade of denationalized NTFPs, even after four years of the new arrangements. The following questions have been raised about the effectiveness of GPs in controlling and regulating local trade and traders:

- Have GPs been able to initiate a process to create multiple buyers to replace the previous monopoly?
- Have GPs encouraged and motivated producers' cooperatives, primary groups and people's organizations?
- Are primary collectors receiving fair prices for their produce?
- Have GPs succeeded in controlling illegal trade and exploitive harvesting?
- Are primary collectors protected from cheating by intermediaries?
- Will the new rules promote the sustainable management of NTFPs?

The answers to these questions need to be assessed carefully in order to identify the next steps in improving the capacity of primary collectors to benefit from deregularized NTFPs.

EMPOWERMENT AND SUSTAINABLE DEVELOPMENT OF FOREST FRINGE DWELLERS

After 120 years of forest management, Orissa is leading the nation by introducing several new forest initiatives. At the time of independence, the state's forests covered nearly 6.6 million ha, broadly classified into two legal categories: reserved forests, with well-defined boundaries and very limited local rights; and protected forests, with unsettled boundaries and unformalized local rights. At the end of the millennium, state forests still covered 5.7 million ha, thanks to strict control by a well-organized forest service (now OFD) with a long history of planning and management. One important lesson learned from the history of forest management is the need to take expeditious action to settle uncertainties about the legal issues affecting forests; as population pressure increases over time it becomes more and more complex to settle rights, because emotive issues start to affect rational decisions. Regarding directions for the future, the following issues are emerging as very relevant:

- OFD should cede more forest management responsibility to communities by taking up a more advisory and extensionist role and giving communities more control over planning.
- OFD should develop innovative strategies for monitoring and evaluating SFM. Local communities should be empowered to manage their forests, with micro-plans acting as guides rather than mandatory documents.
- Local communities should be allowed to sell their forest produce according to their own preferences and convenience, with social safeguards from the government.
- The relationship between VSS created for JFM and local village-level institutions responsible for overall development needs to be clearly defined.

The situation is most precarious in protected forests. In the absence of recognized rights over land, people have been displaced without compensation. Examples of this are the Soil Conservation Department's establishment of cashew plantations for lease to private parties on 120 000 ha of tribal cultivated land, and the Supreme Court's ban on forest activities on slopes of more than 10 degrees, for soil conservation reasons. These acts of omission and commission have led people, especially tribal people, to continue cultivating and living on lands over which they have no valid title.

CFM is a bold experiment with a promising future. The most remarkable feature of CFM is that it is born out of communities' desire to meet their own forest-related needs in response to changing socio-ecological conditions, uncertainties and livelihood insecurity. However, the role of CFM as a valid forest management system can be questioned for two main reasons. First, the concept is confined to the protection of small patches and is sometimes associated with the destruction of forest in the surrounding area, so the question of sustainability remains unresolved. Second, CFM institutions have no formal basis, and communities and OFD are suspicious about one another. The concept could be extended to larger areas if communities were made aware of the more sustained incomes they would achieve and if government departments supported communities' use of forests to increase socio-economic development. The role of the government has to be redefined and redesigned on the basis described earlier in this paper.

Of the forest management systems discussed, CFM seems to represent the largest input of social capital, which is a necessary condition for the successful implementation of PA programmes in the long term. Most schemes and programmes aiming at development fail to achieve their targets because the design of development packages does not take account of the social capital available. This was illustrated by the trends of forest cover change reported in the three districts surveyed by Singh, Sinha and Mukherji (2005).

The 73rd Amendment to the Indian Constitution of 1992 made it mandatory for all states to decentralize governance through a three-tier structure of state, district and local bodies. This constituted an important landmark in the democratization of India in constitutionally recognizing village councils and empowering them to safeguard and preserve local traditions, customs, cultural identity, community resources and customary modes of dispute resolution. Among the 29 functions recommended for decentralization, three relate to forestry – social forestry, fuelwood plantations and NTFPs – so the legal basis for effective people's participation in forest protection and management is now available. However, the modalities of this process and the working relation between JFM and local bodies are still to be formalized.

There is an urgent need to change the system of forest governance, as there is for all aspects of civil administration. According to Rangachari and Mukherji (2000), "the post-independence administration has merely continued from where the colonial government had left. It can be plausibly argued too that the new administration has introduced complexities not only in forest management or the role of the tribes with reference to their habitat, but also the relationship of the citizen to the government. It has done this by introducing a multiplicity of functions and jurisdictions without any real or effective local self-government. In the process, matters have become complicated for the citizen owing to a proliferation of sub-departments with functions pertaining to a narrow focus".

The authors also state that "if indeed the progression to a more holistic and people-centred system of resource management takes place, as envisaged in these pages, the eventual withdrawal of the government from roles other than that of a facilitator of the programme may well be in prospect. Meanwhile, while JFM may be a process-oriented activity, structure is also important as long as the government remains in the saddle, and this needs to be appreciated".

There is need to create innovative institutions based on adaptive management and a more equitable and inclusive decision-making process. The potential of NTFPs to contribute to tribal economies is immense and not yet fully realized. Figure 5 illustrates the framework of an SFM system, including the technical, ecological, social and economic dimensions. This model is currently under experimentation in Orissa's Baripada Development Block.

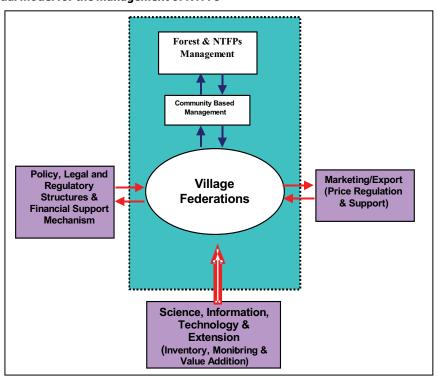


FIGURE 5 Conceptual model for the management of NTFPs

The large rectangle in Figure 5 shows communities' increased share of responsibility for forest management; the other three rectangles show the role of government, which includes:

- establishing legal, regulatory, conflict resolution and enforcement structures for the management of forest and common land resources, including a mechanism to redirect part of the revenues from the management of forests to local communities and to compensate communities for loss of revenue due to closure of areas for regeneration or other technical reasons;
- organizing science, information, technology and extension services to support the planning, monitoring and evaluation of forestry development and PA programmes, and periodic reporting on the progress and constraints in PA;
- marketing, processing and value addition: in the case of NTFPs, there is market as well as institutional failure; there are possibilities for private-public partnerships for the cultivation, processing, value addition and marketing of timber and NTFPs.

According to Singh and Marzoli (FAO, 1996), OFD has to make some difficult decisions in order to change forestry institutions by fostering a sense of social responsibility and a focus on meeting the economic and social needs of people. Among the many pessimistic scenarios regarding India's forests, there is a more positive scenario wherein technical and social goals can be harmonized. This option calls for the intensive management of forests within an overall framework of integrated area development, an appropriate institutional environment and ideological change, in which investment, technology and people's participation constitute inseparable parts.

It is hoped that the lessons learned from this study will be useful in realizing the twin goals of SFM and community development: the dream of "village republics" that the Father of the Nation – Gandhi – described in 1963 in *The village reconstruction*.

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ANNEX 1: FOREST OWNERSHIP IN ORISSA

Matrix 1: Cumulative forest ownership data

		Owner as exclusive manager (ha)	Forest operation contracted/ partnerships (ha)	Devolved management rights (ha)	Other (ha)	Total (ha)
	Public	5 161 342		652 258		5 813 600
2.	Private	18 471	Nil	Nil	Nil	18 47 1
з.	Community/group-owned	Nil	Nil	(186 900)	Nil	(186 900)
4.	Owned by indigenous or tribal people	Nil	Nil	Nil	Nil	Nil
5.	Other types of ownership	I	I	1	1	1
	Total	5 179 813	0	652 258 (186 900)	0	5 832 071 (186 900)

Sources: * FSI, 2001.

** India forestry statistics, 2000.

	Owner as exclusive manager	sive manager	Forest operation contracted/partnerships	ed/partnerships	Devolved management rights	ent rights	Others	Total
	Strictly limited, no extraction rights for others (ha)	User rights, customary rights, permits to hunt, gather dead wood and NTFPs (ha)	JFM with communities, community timber concessions/licences	Private company volume permits, logging concession schemes	Community forest leases, forest management concessions	Private company leases, forest management concessions	(ha)	(ha)
1.1 Country			Area (ha)	Area (ha)	Area (ha)	Area (ha)	1	
			Duration (years)	Duration (years)	Duration (years)	Duration (years)		
			Number	Number	Number	Number		
			Access: yes	Access	Access	Access		
1.2 Province	796 185*	4 365 157**	Area: 652 258 ha***	Area (ha)	Area: 186 900 ha****	Area (ha)	1	5 813 600 (186 900)
			Duration: 10 years	Duration (years)	Duration: 10 years	Duration (years)		
			Number: 6 822	Number	Number: 2 509	Number		
			Access: yes	Access	Access	Access		
1.3 Local	I		Area (ha)	Area (ha)	Area (ha)	Area (ha)	,	
governments: villages.			Duration (years)	Duration (years)	Duration (years)	Duration (years)		
municipalities			Number	Number	Number	Number		
			Access	Access	Access	Access		
1.4 Other public	1		Area (ha)	Area (ha)	Area (ha)	Area (ha)	,	
bodies (Revenue Department)			Duration (years)	Duration (years)	Duration (years)	Duration (years)		
			Number	Number	Number	Number		
			Access	Access	Access	Access		
* Area includes natio	nal parks (99 000 ha	* Area includes national parks (99 000 ha) and wildlife sanctuaries (697 000 ha)	000 ha).	** Area managed by	** Area managed by OFD for multiple uses.			

*** Area under JFM.

****Area protected by the community in form of CFM. The figures have not been taken into the arithmetic of this table.

Source: National Wildlife Database, WII, 2005.

Matrix 2: Public ownership

		Owner as exclusive manager	ve manager	Forest operation contracted/partnership	ership	Devolved management rights	gement rights	Others	Total
		Strictly limited No extraction rights for others (ha)	User rights, customary rights, permits to hunt, gather dead wood and NTFPs (ha)	JFM with communities Community timber concessions/ licences	Private company volume permits, logging concession schemes	Community forest leases, forest management concessions	Private company leases, forest management concessions	(ha)	(ha)
2.1 Individual	Num			Area (ha)	Area: 18 471 ha	Area (ha)	Area (ha)		18471
			1	Duration (years)	Duration (years)	Duration (years)	Duration (years)		
				Number	Number	Number	Number		
			L	Access	Access	Access	Access		
2.2 Industries	Mum	Included in		Area (ha)	n.a.	Area (ha)	n.a.		
		above		Duration (years)		Duration (years)			
			L	Number		Number			
				Access		Access			
2.3 Others	Num	Included in		Area (ha)	Area (ha)	Area (ha)	Area (ha)		
		above		Duration (years)	Duration (years)	Duration (years)	Duration (years)		
				Number	Number	Number	Number		
				Access	Access	Access	Access		

Matrix 3: Private ownership

Additional information on the legislative framework

In compiling the matrix, were you able to provide information on the ownership of the resources, or you reported data on the ownership of the land?	The data repo	rted are on	ownershi	o of forest land
Does the ownership of forest resources correspond to the ownership of forest land?	Yes		No ✓	
If not, briefly indicate in which case				
Public forests				
Does the legislation envisage any form of consultation, involvement of the citizens in the formulation of forest management plans?	Yes ✓		No	
lf, yes at which level?	National	Regiona	Regional district Village commun municipa	
Does the legislation foresee the possibility of devolution of forest management competencies from the state to local levels?	Yes ✓	No		
If yes, to which level?	Local authorities			Others: (specify)
Private forests/community/group-owned forests	1	-		1
Does the legislation require compilation of a forest management plan for private and other non-publicly owned forests? If yes, above which forest area?	Yes, for private forest land			
Who is responsible for compiling forest management plans?	Forest admini	stration	The owr ✓	ner
If the state is responsible, does the legislation envisage any form of public consultation/ involvement?	Yes ✓		No	

* In India, approximately 98 percent of total recorded forest land is under government control. As such, ownership of forest resources on government land is with the government. Only about 2 percent of total forest land is in private holdings.

ANNEX 2: FOREST LAWS

- 1. Introduction
- 2. National Forest Policy, 1952
- 3. National Forest Policy, 1988
- 4. National Zoo Policy, 1988
- 5. Recognition of Zoo Rules, 1992
- 6. Indian Forest Act, 1927
- 7. Forest (Conservation) Act, 1980
- 8. Forest (Conservation) Rule, 1981
- 9. Orissa Forest Department Code, 1979
- 10. Orissa Forest Act, 1972
- 11. Orissa Timber and other Forest Produce Transit Rules, 1980
- 12. Orissa Forest Produce (Control of Trade) Act, 1981
- 13. Orissa Forest Produce (Control of Trade) Rules, 1983
- 14. Orissa Forest Contract Rules, 1966
- 15. Orissa Forest (Detection, Enquiry and Disposal of Forest Offences) Rules, 1980
- 16. Orissa Forest (Fire Protection) Rule, 1979
- 17. Orissa Forest (Grazing of Cattle) Rule 1980
- Orissa Forest (Management of Coastal Shelter Belt Plantation Raised on Private Lands) Rules, 1980
- 19. Schedule of Rate for Forest Produce in Orissa Rules, 1977
- 20. Orissa Forest Rest House Occupation Rules, 1983
- 21. Orissa Saw Mills and Saw Pits (Control) Act, 1990
- 22. Orissa Saw Mills and Saw Pits (Control) Rules, 1993
- 23. Orissa Forest Saw Pits and Saw Mills (Control) Rules, 1980
- 24. Supply of Bamboos to Artisans including Cooperative Societies (Orissa) Rules, 1980
- 25. Orissa Kendu Leaves (Control of Trade) Act, 1961
- 26. Orissa Kendu Leaves (Control of Trade) Rules, 1962
- 27. Orissa Kendu Leaves Manual, 1973
- 28. Orissa Communal Forest and Private Lands (Prohibition of Alienation) Act, 1948
- 29. Orissa Communal Forest and Private Lands (Prohibition of Alienation) Rules, 1949
- 30. Orissa Protection of Scheduled Castes and Scheduled Tribes (Interest in Trees) Act, 1961
- 31. Orissa Excise (Mahua Flower) Rules, 1976
- 32. Broad's Excise (Fixation of Fees on Mahua Flower) Rules, 1976
- 33. Orissa Preservation of Private Forests Act, 1974
- 34. Orissa Preservation of Private Forests Rules, 1963
- 35. Orissa Village Forest Rules, 1985
- 36. Orissa Forest Service Class I (Recruitment) Rules, 1980
- 37. Orissa Forest Service, Class II (Recruitment and Conditions of Service) Rules, 1984

- 38. Orissa Forest Service, Class II (Appointment by Promotion) Regulations, 1985
- Orissa Forest Service, Class II (Recruitment by Competitive Examination) Regulations, 1985
- 40. Forward Contracts (Regulation) Act. 1952
- 41. Wild Life (Protection) Act, 1972
- 42. Wild Life (Protection) Act, 1972
- 43. Wild Life (Transactions and Taxidermy) Rules, 1974
- 44. Wild Life (Protection) Licensing (Additional Matters for Consideration) Rules, 1983
- 45. Cattle Trespass Act, 1871
- 46. Wild Life (Protection) (Orissa) Rules, 1974
- 47. Wild Birds and Animals Protection Act, 1912
- 48. Wild Life (Stock Declaration) Rules, 1974
- 49. Elephants. Preservation Act, 1879
- 50. Orissa Elephants' Preservation Rules, 1953
- 51. Orissa Elephants' Preservation (Ex-Madras Area) Rules, 1953
- 52. Prevention of Cruelty to Animals Act, 1960
- 53. Wild Life (Specified Plants Conditions for Possession by Licensee) Rules, 1995

ANNEX 3: DEFINITIONS OF FOREST AND MANAGEMENT TERMINOLOGY

Classification of forests

The following are the classes of forest over which the Forest Department exercises control:

- 1. reserved forests;
- 2. village forests;
- 3. protected forests:
 - a. demarcated protected forests;
 - b. undemarcated protected forests;
- 4. unclassified forests.

Reserved forests

Reserved forests are state lands that have been dealt with or deemed to have been dealt with in accordance with the procedure laid down in Chapter II and Chapter XI of the Orissa Forest Act 1972 and finally notified in the State Gazette to be reserved forests.

Register of reserved forests: A copy of every such notification mentioned in Rule 157 shall be kept in each Division in a bound volume called the *Register of reserve forests* in Code Form No. 13.

The following are the instructions with regard to the maintenance of the Register of reserve forests:

(i) Each notification with the corresponding statement of rights will be numbered separately, according to the dates from which the forest has been declared a reserve forest. The register for each forest shall commence with an area statement and several pages of the volume shall be allotted to it, so as to afford space for additions and corrections. It is desirable that a sketch map on a small scale or a copy of the notified map should form part of the record for each reserve.

(ii) A copy of every subsequent order that affects the constitution of any reserve, as well as of every order under the Forest Act or Regulation by which rights are modified or regulated or further rights and concessions are granted within the reserve, should be inserted immediately after its promulgation, in the same volume, under the reserve to which order relates. A copy of the notification along with a map of the area declassified should be kept in the register.

(iii) A register of reserved forests for the entire circle shall also be maintained in the circle office, separately for each division in the circle. The register maintained in the circle office should be tallied with the register maintained in the divisional office at the time of annual office inspection by the conservator, and both the registers should be brought up-to-date with respect to all orders issued since the last inspection.

(iv) An index shall be provided to the register of reserved forests in which all corrections or alterations noted above should be entered so as to ensure that all such subsequent amendments have been duly inserted against the reserve to which they apply.

(v) As far as practicable, a map of each reserve shall be left in the office of the chief conservator/conservator/divisional forest officer.

Village forests

Village forests are those that are constituted under Section 30 of the Orissa Forest Act. At present, no such village forest has been constituted.

A register of village forests should be kept in each division in the same manner as detailed in Rule 158.

Protected forests

Protected forests in the state are government lands not included in reserved forests but over which the state government has notified under Section 33 of the Orissa Forest Act that provisions of Chapter IV of the act are applicable or over which the provisions of the said chapter have been declared to be applicable under Section 90 of the said act. This includes all lands at the disposal of government to which the provisions contained in Chapter III of the Madras Forest Act 1882 were applicable immediately prior to coming of the Orissa Forest Act 1972, and all Khesra forests, village forests or protected forests, or forests other than reserved forests in whatever name designated or locally known in the merged ex-State territories as provided under Section 81 (4) of the act.

Protected forests are classified into demarcated protected forests and undemarcated protected forests. The demarcated protected forests are those that have been declared to be closed under Section 34 (c) of the Orissa Forest Act. All reserved lands declared under the Madras Forest Act are also termed as demarcated protected forests. These are under the management of the Forest Department. All other protected forests and all unreserved lands are termed as undemarcated protected forests.

Forest growth on the undemarcated protected forests is under the management of the Forest Department, while the land is under the management of the Revenue Department.

A register similar to the one prescribed in Rule 158 for reserved forests will be kept for demarcated protected forests.

So far as the available data permit, a register should also be opened on the same lines for undemarcated protected forests, and this should be kept up-to-date year to year after recording the leases granted therein for each protected forests by the Revenue Department.

Unclassified forests

All lands owned by the Forest Department outside the reserved or protected forests and with the Forest Department's title to them are included under unclassified forests. These include lands used for forest roads, forest buildings, sites for nurseries, zoos, wildlife parks and other miscellaneous purposes.

Register of unclassified forests: A register of all such lands will be maintained in Code Form No. 14 in every divisional office.

The following instructions shall be followed in preparing the register:

(i) The headings should be written horizontally.

(ii) The register should be bound as the *Register of reserved and protected forests*, and the index should normally be classified under three main heads: A Compounds, B Roads, and C Miscellaneous, e.g., plantation sites, depots, etc. Separate serial numbers should be given to the lands entered under each of these heads, a page or more being devoted to each serial number.

(iii) In all cases, areas in the possession of the department should be shown on the 16 inches to 1 mile cadastral sheets of the settlement maps, which should be properly attested by the divisional forest officer. The sheets of the settlement maps in question should be kept in a folder or in a map almirah with a note in the register that the maps are in the folder or almirah giving the number of sheets and the collection in which found.

(iv) A special folder or map almirah should be made and copies of settlement maps showing Forest Department properties should be kept in it.

(v) The Settlement Department is likely to give one plot number to the whole road running through a village. If within one village, a road given one plot number is held by the Forest Department under different methods of tenure, the different sections shall be shown on the map as (a), (b), etc. to indicate the different kinds of tenure.

(vi) Each range officer should have a register showing records of land in his/her range, the maps to be filled in for the range register being copies of the maps in the divisional register.

Demarcation

The following are the instructions for initiating proposals for reservation of forest:

(1) When the divisional forest officer has decided to demarcate a forest for the purpose of reservation or for creation of demarcated protected forest, he/she shall place the proposal before the collector and shall, after obtaining consent, start demarcation of the forest.

(2) While demarcating the boundaries of the proposed block, attention should be given to making boundaries as straight as possible and as easily and cheaply maintained as possible for

clearing, fire protection and inspection purposes. Attempts should be made to use natural features such as rivers, canals and roads as boundaries. Under no circumstances should the demarcated boundary line be within 100 m of the *bastee* site. All cultivated or other private lands included within the external boundaries of the proposed block shall clearly be demarcated and pillars numbered. General rules for the demarcation of blocks are given in Appendix 19.

Preparation of preliminary map

After demarcation of the boundary is completed, a map in 1 to 1 000 scale should be prepared for submission of the proposal for notification under Section 4 of the Orissa Forest Act. This map should indicate all such areas mentioned in Rule 162, in addition to the external boundary of the proposed block.

Boundary description

Along with the preparation of the maps, a detailed and complete description of the boundary should be made, mentioning therein the position of the boundary with respect to important physical features and indicating the position of the boundary pillars with respect to the existing survey pillars. The compass bearing of each boundary pillar with respect to the adjacent pillars and the distance between them should be recorded so that during the time lag between the demarcation survey and the appointment of the forest settlement officer if any boundary pillars are removed or found missing, they can be replaced immediately at the proper places.

The description should start from the northwestern corner of the block and continue in a clockwise direction. This will be convenient for retracing the boundary and will ensure uniformity.

Proposal for notification under Section 4 of the Orissa Forest Act

1) After completion of demarcation, the divisional forest officer shall obtain the consent of the chief conservator for initiating the proposal for reservation of the block, and then submit the draft notification – along with the maps – to the collector.

2) On receipt of the draft notification from the divisional forest officer, the collector shall forward the same to the revenue divisional commissioner, along with the views already given by him/her at the initial stage. The revenue divisional commissioner shall forward the draft notification, along with his/her views, to the director of land records and survey and the Board of Revenue, suggesting the officers to be appointed as forest settlement officer and appellate authority.

3) The director of land records and survey will obtain the recommendations of the Board of Revenue and transmit the proposals to the government in the Revenue Department, with a copy to the Forest and Animal Husbandry Department.

4) The Forest and Animal Husbandry Department, after taking the orders of the government, will intimate the Revenue Department for further action.

On receipt of the government orders in the Forest and Animal Husbandry Department, the Revenue Department will issue a notification in the Orissa Gazette under Section 4 of the Orissa Forest Act 1972 declaring that it is proposed to constitute such land as reserved forest and appointing a forest settlement office for the purpose.

(a) After the forest settlement officer has concluded his/her enquiry and finalized the proposals, he/she shall submit a draft notification under Section 21 of the Orissa Forest Act 1972 specifying definitely according to boundary marks erected or otherwise the limits of the forest that is to be reserved, along with copies of such reports, maps and registers as have been prescribed under the Forest Settlement Rules, to the director of land records and survey through the collector and the revenue divisional commissioner.

(b) The director of land records and survey shall then forward the draft notification, along with relevant documents and the views of the Board of Revenue, to the Revenue Department with a copy to the Forest and Animal Husbandry Department for necessary action.

5) (a) The Revenue Department will then issue a notification under Section 21 of the Orissa Forest Act 1972 with the concurrence of the Forest and Animal Husbandry Department declaring the forest to be reserved from a certain date fixed in the notification.

(b) From the date so fixed such forests shall be deemed to be reserved forests.

Forest settlement

After the Section 4 notification is issued by the state government and the forest settlement officer appointed, the forest settlement officer will proceed as per the provision of the Orissa Forest Act 1972 until the final notification under Section 21 of the said act has been issued by the state government.

After completion of all the proceedings by the forest settlement officer, the state government shall issue a notification under Section 21 of the Orissa Forest Act 1972 declaring the forest a reserved forest.

A complete list of rights and concessions allowed by the forest settlement officer and the exact boundary of the reserved forest so constituted shall also be published in the Orissa Gazette in the above notification.

Boundary register and maps

a) A permanent record of the boundaries of all reserved forests, village forests and demarcated protected forests shall be maintained in a separate register for the purpose of checking the position of boundaries, if necessary, in case of disputes arising in future. The register will be maintained in all divisional and range offices.

b) All forest boundaries should be shown on the village land revenue maps, as these maps take precedence in a court of law over all Forest Department records. Steps should be taken to get this done during survey and settlement operations, or it should be done at some other time.

c) Boundaries should be classified as-

- 1. artificial: demarcated by cut lines and pillars;
- 2. natural: not requiring artificial demarcation;
- 3. semi-natural: demarcated by pillars without cut lines, e.g., along roads and small nallahs.

d) Copies of certified reservation maps showing positions of all pillars should be maintained in each range and divisional office.

e) Any alteration that may from time to time be made in the boundaries shall be accurately recorded on the maps and in the registers so that the records are always up to date.

Upkeep of boundaries

The clearance of boundaries and repairs to the boundary pillars shall be done on a five-year cycle in a rotational method. The working plan/working scheme should prescribe a definite programme for the maintenance of boundary lines in the case of the boundaries of reserved forests.

Inspection of boundaries

i) All boundary marks shall be maintained in a good state of repair. In order that this may be done, systematic and frequent inspection of boundaries must be carried out. The working plan should prepare a ten-year programme of boundary inspection by the divisional forest officer.

ii) It shall be the duty of the beat officer and section officer to inspect all boundaries within the limits of their charges at least once a year and to report to their range officer cases of encroachments or wilful removal of or destruction of boundary marks or repairs that are found to be necessary.

iii) Range officers should inspect at least 20 percent of the boundaries in their ranges and submit a report to the divisional forest officer when they have done so. The range officer should also report to the divisional forest officer encroachments, if any, and the immediate repairs required to the boundary pillars as per the report of the beat officer (see paragraph ii above).

iv) The divisional forest officer will inspect the boundaries of the division in a ten-year cycle programme as laid down in the working plan/working scheme.

v) The divisional forest officer will submit to the conservator of forests by 15 April each year a certificate to the effect that he/she has inspected the boundaries of (name.....) blocks and found those in order, and that there has been no encroachment. If encroachments have been detected, their nature and extent should be specified and action taken in this respect.

Amendments to description of boundaries

It sometimes happens that the original description of boundaries has proved unsatisfactory and it is necessary to renotify amended descriptions of the boundaries of forest reserves already notified under any forest enactment. In such cases, the boundaries should be redescribed and renotified in the appended form of notification, provided that the fresh notification merely provides for the substitution of a more exact and definite description of the boundaries than was originally notified, without in any way affecting the area of the block by either inclusion of new area or exclusion of part of the block, however small the area in question may be.

Notification

With reference to notification No...... dated..... published under Section...... of the...... of the...... of the...... State Gazette of the...... declaring the forest to be a reserved forest, the Government of Orissa is pleased to direct that the following amended and more accurate description of the boundaries of the said forest be substituted for the description contained in the said notification.

Notification of boundaries

Copies of all notifications issued by government constituting or modifying the boundaries of reserved village and demarcated protected forests, together with indicative tracings of sketch maps, should be supplied immediately after they are issued to the deputy director of surveys, Orissa for the purpose of enabling him/her to make the requisite additions or alterations in the corresponding maps in his/her office.

Procedure for submission of proposal for declassification

In submitting proposals for declassification of forest to the state government under Section 29 of the Orissa Forest Act 1972, the proposal should be submitted in the following form, and should be accompanied by a map and the recommendations of the forest authorities.

Draft notification

Specification of land declassified

Name of reserved forest or portion thereof	District	Tahsil	Mauza or village	Area in hectares

Boundaries:

Brief description:

Reasons for declassification:

Consequent upon declassification, the boundary description of the original block will have to be amended. In such cases, the amended boundary description should be notified at the same time as the notification of declassification in the following form:

Consequent upon the disforestation of the area noted above, the following boundary description of the reserve should be substituted for that given in notification No...... dated...... under which the forest was declared a reserve.

All such boundary descriptions must be prepared by an officer not below the rank of forest ranger, and the divisional forest officer should carefully check the amended boundary descriptions before they are forwarded to the higher authorities. The divisional forest officer should give a certificate to the effect that he/she has checked the revised boundary description and found it to be correct on the field.

Land required by other departments

i) When land lying within the limits of reserved forests or forests already notified under relevant sections of the forest enactments is required by the Public Works or Irrigation and Power Department for construction of roads, canals and dams, it is not invariably necessary that a formal notification declassifying the land should be issued under the relevant sections of the Orissa Forest Act. An executive order of the state government permitting the requisitioning department to utilize the exact extent of land required for the project will suffice. The land shall continue to be a reserved forest.

ii) Necessary entries to this effect indicating the area and a map of the area so utilized shall be made in the register of reserved forests maintained in the office of the divisional forest officer and the conservator of forests, duly attested by the head of the office.

All forest growth on such land shall be disposed of before the land is allowed to be so utilized.

If the land in question is urgently required by the requisitioning department, and sufficient time cannot be given to the divisional forest officer for the disposal of the forest produce on the land, the divisional forest officer will prepare an estimate of the value of the trees as per the joint enumeration list, based on the sanctioned schedule of rates, and shall issue a demand equivalent to four times the royalty so calculated and send it to the requisitioning department through the conservator. On payment of the above royalty by the requisitioning department, the land in question will be handed over for use, along with the tree growth as per the joint enumeration list.

In such cases, the concerned requisitioning department shall dispose of the forest produce, after obtaining necessary permits from the divisional forest officer. If the disposal price is higher than the value already paid, the Forest Department shall be eligible for the difference.

The same procedure shall apply in the case of village forests and protected forests.

Compensatory plantation

Whenever a part of any reserved forest is dis-reserved or whenever any part of village or protected forest is transferred to another department or released for mining purposes, the requisitioning department or the mining lessee, as the case may be, will pay to the Forest Department an amount of money equivalent to the plantation cost at a rate sanctioned by government for plantations from time to time.

Procedures for forest survey, maps, etc.

The rules regarding the procedure to be followed in connection with forest surveys and obtaining forest map are given below:

(1) (a) The survey of forest areas is carried out as part of the topographical survey, which is gradually being extended over the whole of India.

SI. No.	Divisions	No. of VSS	Area assigned to VSS
	(preorganization)		
1	2	3	4
Angul Circle			·
1	Angul	111	17 196.58
2	Athgarh	110	9 734.26
3	Dhenkanal	177	22 134.49
4	Athamallik	52	3 773.00
5	Keonjhar	110	11 880.12
	Total	560	64 718.45
Berhampur			
6	Baliguda	235	13 980.00
7	Boudh	112	10 600.16
8	Ghumsur South	102	16 229.30
9	Ghumsur North	78	11 546.00
10	Nayagarh	15	1 434.00
11	Paralakhemundi	516	46 639.00
12	Phulbani	473	29 614.00
13	Puri	27	3 699.00
	Total	1 558	133 741.46
Koraput Circle	I		I
14	Bolangir	378	46 386.00
15	Kalahandi	611	46 142.97
16	Khariar	381	35 283.00
17	Jeypore	481	35 076.00
18	Nowrangpur	95	33 325.00
19	Rayagada	930	60 274.39
	Total	2 876	256 487.36
Sambalpur Circle	I		1
20	Bamra	258	25 685.00
21	Bonai	120	8 551.00
22	Deogarh	143	11 632.44
23	Rairakhol	102	10 252.00
24	Sambalpur	423	58 941.11
25	Sundagarh	483	50 248.00
	Total	1 529	165 309.55
STR Circle	1	1	1
26	Baripada	276	2 9958.00
27	Karanjia	21	2 043.00
	Total	297	32 001.00
Grand total		6 820	652 257.82

ANNEX 4: JFM IN ORISSA (1 MARCH 2003)

ANNEX 5: GOVERNMENT OF ORISSA RESOLUTIONS ON JFM

With the increasing population and improved standard of living, the demand for forest items has increased massively, resulting in serious problems of protection. As the forest cannot be protected or managed properly without the involvement of local village communities, the state government has started to take steps to protect the forest through the JFM approach, and has issued a series of resolutions and guidelines.

Government of Orissa Resolution No. 47/88 17240 FFAH

The first step in involving people in forest protection was Resolution No. 10F (Pron)-47/88 /17240 FFAH of 1 August 1988, which was made by the Government of Orissa's then Forest, Fisheries and Animal Husbandry Department. This resolution assigned specific roles to villagers in the protection of reserved forests adjoining their villages; in return the villagers were granted certain concessions in meeting their requirements for fuelwood and small timber, as under section 24 of the Orissa Forest Act 1972.

Government of India Resolution No. 6-21/89-FP

This resolution was issued by the Government of India on 1 June 1990 and regards the involvement of communities and voluntary agencies in the regeneration of degraded forests. In this resolution all state governments were given guidelines for the protection of forest with the involvement of communities and NGOs. The resolution paved the way for the states, which subsequently issued their own guidelines for the protection of forests in their states through JFM.

Government of Orissa Resolution No. 10 F (Pron) 4/90 29525/ FFAH

The 1988 Resolution was superseded by this resolution on 11 December 1990, in which protected forests were included for assignment to adjoining villages and it was decided that forest protection committee shall include women and people belonging to the scheduled caste, scheduled tribe and landless categories.

Government of Orissa Resolution No. 10 F (Pron) 16700-10 F 20/93 F&E Department

This resolution, of 3 July 1993, aimed to make the involvement of local villagers in forest protection more effective and transparent. It superseded previous resolutions dealing with the involvement of local communities in protecting adjoining forests, including the formation, duties, responsibilities and functions of VSS. It also provided for the constitution of a state-level steering committee, chaired by the Forest Minister, to monitor and guide implementation of this scheme.

Trends in forest ownership, forest resources tenure and institutional arrangements: are they contributing to better forest management and poverty reduction?

By

and

B.K. Singh

D.P. Chapagain

Community and leasehold forestry for the poor: Nepal case study

Summary

Nepal is a small landlocked country in Asia situated between two large countries — China in the north and India in the south. It is highly rich in biodiversity. The country's total surface area is 147 181 km² and it has a population of 24 million people. Its forest ecosystem and vegetation vary with altitude, which ranges from near sea level to the highest point on earth. Nepal's total forest area of 3 635 500 ha is distributed across the four major geographic regions: the mountains, the mid-hills, the Siwaliks and the Terai (plain). The high-altitude mountains have alpine and temperate forests of *Quercus* spp, *Cedrus deodara*, *Pinus excelsa* and *Arundonaria*, whereas broadleaf species of *Schima wallichii*, *Castanopsis* and chirpine (*Pinus roxburghii*) abound in the mid-hills. The Terai and Siwalik hills are dominated by tropical and sub-tropical forests of *Shorea robusta* and associates.

Nepal's forests are broadly divided into two ownership categories: national and private. National forests are further categorized into: (1) government-managed forests; (2) community forests; (3) leasehold forests; (4) religious forests; and (5) protected forests. Community, leasehold and religious forests are managed by local communities or user groups, while government-managed and protected forests are directly administered and protected by government agencies. Private forests are managed by individual households. The present study focuses on community and leasehold forestry.

Community forests cover more than 1 million ha across the country, in all but one district and in all ecozones. In addition, under the leasehold forestry programme, groups of poor families manage about 8 500 ha of forests in 31 mid-hill and mountain districts.

The objective of this study is to increase understanding of the relation between forest resource tenure and forest management, particularly the implications for poverty alleviation.

The study covers the broad national context of community and leasehold forests, focusing on the policy issues and socio-psychological factors that are driving forces for change. Policies, strategy, laws and study reports related to community and leasehold forestry were reviewed. The researchers held discussions with forestry officials in areas where community and leasehold forestry programmes are implemented simultaneously by the same district forest officers and forestry rangers. They also discussed forest ownership and management with community forest user groups (CFUGs) and leasehold groups.

Although the government holds ownership rights for all categories of forest, CFUGs are given use rights under contracts with the District Forest Office. Other stakeholders, such as community forestry projects/funding agencies and local non-governmental organizations (NGOs) related to community forestry, provide various kinds of support to the CFUGs, which are federated at the district, regional and national levels and work as pressure groups and advocacy agents for community forestry. Major stakeholders in leasehold forestry are leasehold groups, the District Forest Office, the Regional Director of Forest, the Ministry of Forest and Soil Conservation, the Department of Livestock Services and donor agencies.

The Forest Act of 1993 and the Forest Regulation of 1995 provide the legal foundation for both community and leasehold forestry. The main objective of community forestry is to fulfil the need for basic forest products, including fuelwood, fodder, bedding materials for livestock and timber. However, in recent years, greater emphasis is being placed on livelihoods and poverty alleviation. All kinds of forests, ranging from well-stocked virgin to degraded, can be handed over as community forests. CFUGs encompass all traditional forest user households without discrimination regarding socio-economic conditions. Users are thus generally heterogeneous in nature. The main forest management document for a community forest is the operational plan that is drawn up between the District Forest Office and the CFUG. Such plans are normally prepared for five-year periods and renewed or revised every five to ten years. For management purposes, the forest is divided into four to eight blocks or compartments, and management activities are planned accordingly. The most important of these activities are clearing unwanted weeds, removing dead, dying and diseased trees, thinning thick stems and pruning branches to maintain horizontal space between stems, and planting in gaps. At present, the management of natural regenerated forests is preferred to the establishment of new plantations. The CFUGs are authorized to fix the prices of forest products for distribution and sale, but the prices charged to outsiders or nonmembers of CFUGs should not be less than those charged by the government.

When selling Sal (*Shorea robusta*) timber and khair (*Acacia catechu*) outside the user group, CFUGs are required to pass on 15 percent of the proceeds to the government (District Forest Office). In addition, the government has imposed provisions that CFUGs must comply with; for example, groups must spend at least 25 percent of their total income from the forest on forest management; the remaining 75 percent can be spent on community development activities decided by the CFUG. Most community forests are still protection-oriented and do not manage their forests intensively; communities have successfully reversed deforestation and improved forest conditions.

Leasehold forestry specifically targets the poorest and marginal households. It aims to raise the incomes and improve the living conditions of poor families, while restoring degraded forests. Only degraded forests or shrublands with or without scattered trees are leased out as leasehold forest. A visible impact of the leasehold forestry programme has been increased forage production, which supports animal husbandry (mainly of goats and buffaloes) as the main income source of the households concerned. Leasehold groups establish plantations of multipurpose tree, fodder and fruit-bearing species on their leased land. Such resources can yield useful medium-term products from the third year onwards. Forest land is intensively managed using both horizontal and vertical space. Ground forage, pineapple, turmeric, ginger, banana and shade-bearing non-timber forest products (NTFPs) are planted under partial tree shade. Small leasehold groups with membership ranging from five to 20 households have exclusive and long-term use rights over the forest land. The average area of a leasehold forest is 3 to 20 ha, and the lease period is 40 years, extendable for another 40 years. These provisions have led to a strong sense of ownership over the leasehold forest among participating leaseholders and are a driving force for intensive management of the forest. All the benefits from the forest directly accrue to the leasehold group members and there is no need to share them with the government. Although leasehold forestry has benefited only 15 000 households, it makes a vital contribution to improving livelihoods, reducing poverty and rehabilitating degraded forests.

Private forests are owned and managed by individuals or any other legally defined entity. Nearly 1 million out of about 3.4 million private agricultural holdings have planted forest trees. Of these, about 166 000 holdings have compact plantations.

In community forestry, the main second-generation issues to be addressed in the future are governance, livelihoods and sustainable forest management. This implies a need to modify government policies and legislation to ensure more democratic and equitable governance, improved livelihoods for rural communities, and the economically efficient and socially desirable management of forest resources for sustained benefits.

The leasehold forestry programme targets the poor and is an effective model for poverty alleviation and the improvement of degraded forests. However, although it has been implemented for a decade, the programme has had relatively small coverage so far. It is therefore time to extend this programme for poverty alleviation, outside as well as within community forests. This requires high inputs in terms of funds, materials, training and other support. Some of the leasehold groups in three districts have been federated into leasehold cooperatives, which are sustainable and successful in marketing forest and agricultural products. All leasehold groups should gradually be associated into multipurpose cooperatives, while the bureaucratic process of leasehold forestry should be simplified and administered through the District Forest Offices.

Regarding land tenure and forest management, community forestry is an extensive programme that covers large areas and populations, while leasehold forestry is an intensive programme for poor and marginal people. Leasehold groups have a stronger sense of ownership in their forests than CFUGs have. However, the two programmes should not be treated as mutually exclusive, but should rather be regarded as complementing each other. The national forests that are directly administered by the Department of Forest are rapidly deteriorating in quality and quantity, while community and leasehold forestry have emerged as viable alternatives for sustainable resource management, livelihood improvement and poverty alleviation.

Introduction

BACKGROUND

The institutional arrangements for Nepal's forestry subsector have undergone major changes in the last half century in terms of tenurial arrangements and the ensuing management practices. Prior to 1957, a large segment of the country's forests were owned and managed privately, although some forests were under other forms of tenure, such as those owned by religious trusts or the State. At that time, there was no ceiling on the area of land that an individual or family could own. In 1957, the government nationalized all forests and took over their management responsibility. This radical change in forest tenure was accompanied by the implementation of officially sponsored resettlement schemes, which involved clearing several thousand hectares of forest lands in the southern plains,

called the Terai. The combined effect of forest nationalization and forest clearing led to illegal tree felling in nationalized forests and the establishment of illegal settlements on forest lands. In retrospect, an important factor that was ignored in the nationalization of forests was the rural people's dependence on forests for a wide range of products, such as fodder, bedding materials for animals, roofing materials for houses and other non-timber products for different uses.

As could be expected, the government's management of nationalized forests was generally poor because it defied the time-tested traditional system of community management of natural resources as common property. This led to recognition of the advantages of decentralizing forest management as community forestry, initially on an experimental basis. As a result of the positive results achieved from the experiment, the government decided to recognize formally the decentralized management of nationally owned forests. This provided the background for the evolution of the different systems of forest tenure that are observable in Nepal today.

PURPOSE AND OUTLINE

The purpose of this paper is to contribute to a better understanding of the relationship between forest resource tenure and forest management, with a focus on the implications for poverty alleviation. The term "tenure" is used here to imply a bundle of rights that are recognized by law and custom and that a person, a group of people or a private or public entity holds in land or trees. The paper seeks to examine the nature of these rights, their origin, their operationalization and the ways they relate to other activities, including the planting, conservation and utilization of trees.

SOURCES OF INFORMATION AND METHODOLOGY

This study's review and analysis of policy and legislation are based on the available official documents; the statistics used are based on available secondary and anecdotal information. Two different sources of data and information were used. Information about trees on privately owned land came from the National Sample Censuses of Agriculture, published by the Central Bureau of Statistics (CBS). These provide information on the trees planted by farm households, broken down by district and size of holding, for the survey years 1991/1992 and 2001/2002. However, the reporting methods of these censuses differ, so the comparability of the information available from these sources is also limited. The earlier (1991/1992) survey reports the total number of trees standing at the time of survey, while the later one reports separately the area of compact plantation, the number of trees on this and the number of trees scattered on the entire holding. Information on community and leasehold forestry came from the Department of Forest, the Department of Forest Research and Survey and various projects and programmes supported by bilateral, multilateral and international donors.

Additional information was collected during field visits and discussions with forestry staff and community forest user groups (CFUGs). The study researchers visited remote Himalayan, mid-hills and Terai districts and discussed different types of forest ownership, the forest management systems used and their contribution to poverty reduction with forestry officials, field staff and the officials of CFUGs, leasehold groups and the Federation of Community Forest User Group in Nepal (FECOFUN).

To the extent permitted by the available information, comparisons were made among different systems of forest tenure – private, community and leasehold – and their management systems.

DEFINITIONS, SCOPE AND LIMITATIONS

This study focuses on the tenure of forest resources and its influence on the planting, conservation and utilization of trees. According to the Forest Act of 1993, any area that is wholly or partially covered by trees is defined as a forest. FAO defines forest as "all lands with a forest cover, i.e., with trees whose crown cover is more than 10 percent of the area, that is not used primarily for purposes other than forest" (FAO, 2004). This definition emphasizes that forests are not used primarily for purposes other than forest, but is less clear on the meaning of forest use. This study uses the Forest Act definition, which uses the term forest to include all trees other than the horticultural plants that have been planted in privately owned and operated lands. The study covers three types of forests: private, i.e., trees planted on privately owned land; community; and leasehold. The study examines the broad national context for community and leasehold forestry, concentrating more on policy aspects than on operational details. In addition to analysing the available data, it also discusses the socio-psychological aspects that drive changes, particularly the confidence that arises among beneficiaries from a sense of ownership in forest management.

The depth of the analysis and discussion is influenced by the limitations of the information available. As well as a general shortage of information, the available data (as indicated in the preceding subsection) are not always comparable, and this is a major limitation. Information on leasehold and community forestry is limited to the number of forest user groups, the average size of such groups, and the approximate area of land occupied by community and leasehold forests.

Leasehold forestry is directed to the "poorest of the poor". In rural Nepal, the area and quality of land operated by a rural family is the main indicator of its poverty, so it is reasonable to assume that the households covered by the leasehold forestry programme own either no or very little land. This is one of the major assumptions of the following analysis.

The criteria for designating a community forest are different. A community living in the vicinity of a patch of hitherto degraded forest, and willing to contribute to its rehabilitation, can be entrusted with its management and utilization within the framework of an agreed management plan. The management plan generally gives priority to rehabilitation through regeneration and does not encourage the planting of exotic species or fruit trees. In this tenancy type, no discrimination is made according to the size of holding, incomes or other socio-economic factors of participating households.

The policy analysis part of the study focuses on the existing legislative instruments and official policies. Their evolution and underlying rationale are reviewed when it is necessary to clarify a particular issue.

THE COUNTRY CONTEXT

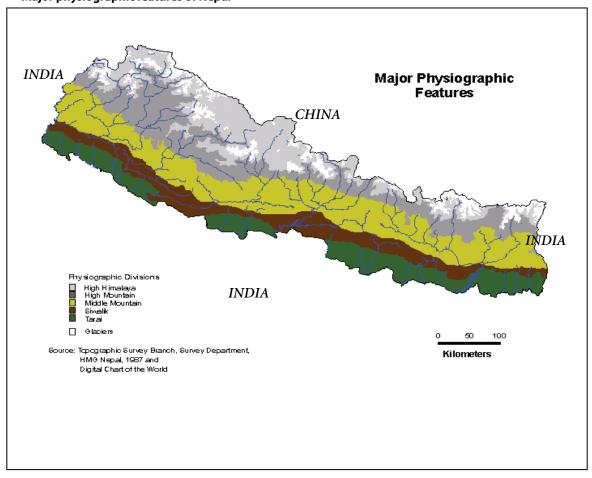
Surrounded by China in the north and India in the east, west and south, Nepal is a landlocked country that lacks opportunities for large-scale timber trade via sea transport. It covers a total area of 147 181 km² of very diverse land.

There are three broad topographic regions based on altitude and terrain: mountains, hills and Terai (plains in the south). Physiographically, the country is divided into four broad regions: mountains, hills, Siwaliks and Terai (Figure 1). Mountain and hill regions are generally intercepted by valleys, many of which have similar temperature conditions to those of the Terai. The average temperature decreases as altitude increases. Nepal is in the southwest monsoon region, and average rainfall generally decreases from east to west. The agro-ecological diversity created by the wideranging altitudes (and hence temperatures), rainfall patterns and soil types has contributed to the country's extremely rich and diverse biodiversity.

Ecological diversity and the role of forests in livelihoods

Ecological diversity has also contributed to the evolution of a variety of complex farming systems. About 87 percent of Nepal's population of 24 million people pursue subsistence and semisubsistence farming systems that integrate crop production with animal husbandry and depend on forest products for household use and animal husbandry. Generally, the role of livestock in farm incomes increases with altitude. Almost all farm households keep some bovines for farm power and manure, but the exact number depends on access to forest and common pasture for fodder and bedding materials. Forests thereby also contribute to maintaining soil fertility by supplying materials for the domesticated animals that generate farmyard manure, which is still the main source of fertilizer in Nepal, although mineral fertilizers are becoming popular in accessible areas. In addition, forests are a source of wild fruits and other edible plants, and the major source of medicinal plants. In summary, forests are an inalienable part of Nepalese livelihood systems, as is recognized by existing policies and reflected in the legislative instruments currently in force.

FIGURE 1 Major physiographic features of Nepal



Policies, laws and government organization concerning forest resource tenure

POLICIES AND LAWS

Two laws and the policies related to them have the greatest influence on forest resource tenure: the Forest Act of 1993¹⁷ and the Lands Act of 1964. The first provides tenure systems for forests – including private, leasehold and community forestry – while maintaining State ownership of all forest lands. The following are the categories of forest defined by the Forest Act:

- *National forest:* All forests other than private forest, regardless of the demarcation of their boundaries and including cultivated or uncultivated land, roads, ponds, lakes, rivers, streams and the shingly land that is surrounded by or in the vicinity of a forest.
- *Government-managed forest:* National forests managed by the government.
- *Protected forest:* National forests that the government has declared protected in consideration of their environmental, scientific and cultural importance.
- *Community forest:* National forests that have been entrusted to user groups (as defined in clause 25 of the act) for development, conservation and utilization in the interest of the community.
- *Leasehold forest:* National forests that have been leased (according to clause 32 of the act) for specified purpose(s) to a legally defined institution, forest-based industry or community.
- *Religious forest:* National forests that have been entrusted to any religious entity, group or community as specified in clause 35 of the act.
- *Private forest:* The planted or protected forests on land that belongs to an individual as per the prevailing law.

These definitions make it clear that ownership of all except private forests rests with the State. The differences among categories of forest regard only access to the forest.

Although the Forest Act created an opening for private forestry, it still reflects the Private Forest Nationalization Act of 1957 by inserting a clause (clause 39) on registration. This states that any individual or institution willing to register a private forest may do so at the District Forest Office, which can then issue a certificate of registration. The purpose of the 1957 act, as indicated by its title, was to nationalize the then privately owned forests. Although not mandatory, the mere existence of this clause is a source of concern, especially because of the nationalization of private forests in the past.

The impact of the 1957 act, combined with the launching of resettlement programmes, led to a decline in national forest cover, from 51 percent in the 1950s to 45.6 percent in 1964. To address the problem of encroachment on nationalized forests a new Forest Act was promulgated and enforced in 1961. This was the first law specifically designed to protect nationalized forests, while "maintaining the interest of the common people". However, this law too failed to address the problem of forest encroachment, as it declared all lands except

¹⁷ This act came into force on 3 April 1995, when the Forestry Regulations were also promulgated.

cultivated land to be State property. Such a declaration may even have triggered the deforestation process, as the population was growing rapidly and opportunities for employment outside agriculture were not readily available.

The Lands Act of 1964 provides for ownership of land by individuals and other legally defined entities. It is designed primarily for cultivable land, and fixes land ceilings for the hills, including the mountain, Kathmandu valley (where the capital city is located) and Terai regions. However, it does not restrict landowners regarding the ways they use the land, which can include forestry purposes if the landowner chooses. Considering that farming systems in most parts of the country integrate crops and livestock, implying a need for fodder and bedding materials for livestock, the Lands Act also provides for land area in addition to cultivated land. The owner can use this "homestead land" for planting fodder and other trees and grasses.

GOVERNMENT ORGANIZATIONAL STRUCTURE

Although Parliament¹⁸ is the final authority in Nepal, executive authority is exercised by a Cabinet consisting of the Prime Minister and Ministers. The operational responsibility for periodic policy planning and implementation of forestry and related matters lies with the Ministry of Forests and Soil Conservation, which is headed by a Minister or Minister of State. Operational responsibilities are entrusted to five specialized departments operating at the regional (five), district (75) and subdistrict levels. The main department concerned with private (for registration purposes only), community and leasehold forestry is the Department of Forest. The current organizational structure of the ministry and its departments is presented in Figure 2.

¹⁸ According to Article 44 of the Constitution of the Kingdom of Nepal 1990, the term "Parliament" refers to the House of Representatives, the National Council and His Majesty the King all together.

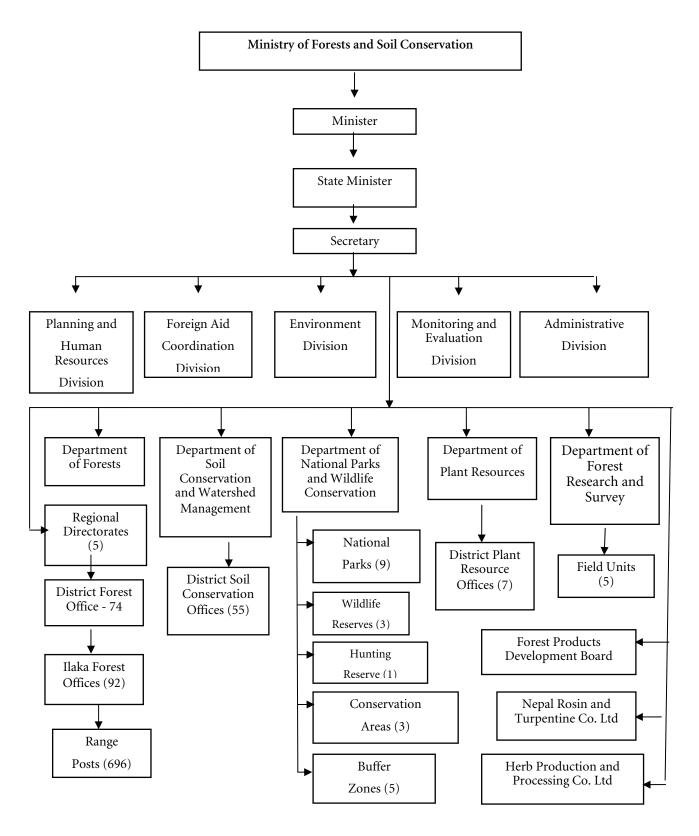


FIGURE 2 Organizational structure of the Ministry of Forests and Soil Conservation

Source: Ministry of Forests and Soil Conservation, 2002.

STAKEHOLDERS IN COMMUNITY AND LEASEHOLD FORESTRY

CFUGs and district forest offices of the Department of Forest are the rights-holders of community forests in Nepal. In addition to the CFUG federation, FECOFUN, there is another federated body – the National Federation of User Groups (NEFUG) – which accepts membership from all kinds of user groups in the forestry sector. A number of bilateral projects and national and international non-governmental organizations (NGOs) provide direct funding and other support to community forestry in Nepal.¹⁹

The main stakeholders in leasehold forestry are leasehold groups, District Forest Offices, the Department of Forest, Regional Directors of Forest, leasehold group cooperatives, the Department of Livestock Services and the International Fund for Agricultural Development (IFAD).²⁰

OWNERSHIP, RIGHTS AND RESPONSIBILITIES IN PRIVATE, COMMUNITY AND LEASEHOLD FORESTS

Private forests

According to the National Sample Census of Agriculture 2001/2002 (CBS, 2004), nearly 1 million out of roughly 3.4 million private agricultural holdings²¹ contain planted forest trees. Of these, about 166 000 holdings contain compact plantations (Table 1).

TABLE 1:

Status of private forests, 2001/2002 (Source: Annex 1.)

Particulars	Value
Total number of agricultural holdings	3 364 139
Total area of agricultural holdings	2 654 037 ha
Holdings reporting forest tree plantation	989 860
Holdings reporting compact plantation	166 126
Area of compact plantation	27 057 ha
Total number of trees in compact plantations	20 545 131
Total number of trees in scattered plantations	18 159 813

¹⁹ The traditional users of a forest living in its vicinity form a CFUG. Each CFUG elects an executive Forest User Committee (FUC), prepares a group constitution and is officially registered with the District Forest Office. CFUGs are legally recognized entities under the Forest Act. While FECOFUN is an exclusive organization for CFUGs only, NEFUG includes leasehold forestry groups, CFUGs, soil conservation groups and buffer zone groups. Many bilateral donors support community forestry projects in Nepal. These include the Nepal–Australia Community Forestry Project in three districts, the Nepal–Swiss Community Forestry Project in three districts, the German Agency for Technical Cooperation (GTZ) in three districts, and the United Kingdom's Department for International Development (DFID) in 15 districts. ²⁰ The District Forest Office implements both leasehold and community forestry programmes at the district level. The Department of Forest is the lead agency in the Leasehold Forestry and Livestock Programme. The Regional Director of Forest is the authority that approves lease certificates. Leasehold groups are federated at the district level and have been registered as multipurpose cooperatives in three districts. There is a plan to federate all leasehold groups into cooperatives for their long-term sustainability. The District Livestock Services Office is a line agency that provides inputs for forage development in leased land and veterinary services for leasers' livestock.

²¹ According to the National Sample Census of Agriculture 2001/2002 (CBS, 2004), a holding is considered to be an agricultural unit when it has an area under crops of at least 0.01272 ha in the hills or 0.01355 ha in the Terai; or keeps at least two head of cattle or buffalo; or keeps at least five head of sheep or goats; or keeps at least 20 head of poultry; or keeps any combination of livestock considered equivalent to two head of cattle or buffalo (e.g., one head of cattle and four sheep).

The discussion in the rest of this section focuses on community and leasehold forests; private forests are mentioned only when demanded by the specific context.

Community forests

The Forest Act of 1993 and the Forest Regulation of 1995 make clear provisions regarding rights and responsibilities related to community forests. CFUGs are legally registered at the District Forest Office. In accordance with the provisions made in their operational plans, CFUGs are authorized to protect and manage the forest and establish plantations. The operational plan of a community forest is prepared by the CFUG, with technical assistance from forestry rangers and/or NGOs and approval from the District Forest Officer. It describes how to protect, manage and utilize the forest, fix the price of, sell or dispose of its products, and punish violators. An operational plan is valid for five years and renewable after termination.

The CFUG can collect forest products and distribute them among its members according to the rules stipulated in the operational plan. A community forest should be managed and its products utilized in such a way that there is no negative impact on the environment. CFUGs can sell their forest products to outsiders if there is a surplus after the requirements of group members have been met. They are authorized to fix the prices of forest products for sale to outsiders, but these prices cannot be lower than those fixed by the government. The forest land cannot be sold or used as collateral for loans.

CFUGs are responsible for protecting the community forests from encroachment. It is illegal to construct residential buildings, cause erosion and landslides through CFUG activities, quarry, collect stone or soil and catch or kill wildlife (Government of Nepal, 1993; 1995). Figure 3 presents a schematic depiction of the various stakeholders and their functions with regard to community forestry.

Leasehold forests

Forests are leased out: (a) to groups of poor families; (b) to industries or organizations; and (c) for ecotourism. Very little forest land is leased out for wood-based and ecotourism-related industries because of the long bureaucratic process involved and the low priority given to these activities in the forest policy (MPFS, 1989), the Forest Act and the Forest Regulation. Between the promulgation of the Leasehold Forestry Regulation in 1978 and August 2005, only 216 ha of forest was leased out to ecotourism and wood-based industries (Department of Forest, 2005). Most leasehold forests are handed over to groups of poor families.

A leasehold forest is handed over for a maximum of 40 years, which is extendable for another 40 years. As in community forestry, the operational plan provides the basis for forest protection and management and the exploitation and distribution of products among the leasehold group members. The operational plan for a leasehold forest is prepared by the leasehold group, with technical assistance and facilitation from the Forestry Ranger, the Livestock Junior Technician and/or local NGOs. The Forest Regulation exempts very poor families from paying lease fees, but others have to pay from 200 rupees (NR) to NR1 500, depending on the geographic region in which the forest is located. Fees are higher in the Terai and lower in the mountains. Organized bodies pay higher lease fees than industries or communities, and communities pay the lowest fees.²²

Leasehold groups are authorized to extract forest products, distribute them among the group members and sell surpluses to outsiders in accordance with provisions made in the operational plan. Leaseholders are responsible for protecting any surviving old and large trees²³ on the leased land, but these trees remain the property of the government. Leaseholders can transfer or sell their rights to others after they have successfully completed one-third of their lease period. They cannot, however, sell the leased land or pledge it as collateral for obtaining loans.

²² An organized body is an institution that is officially registered by law in the government organization. NGOs, private companies, etc. are organized bodies. In this case, a community is any ethnic or other group that does not fall under the poverty line.

²³ A tree is defined as a perennial plant with a self-supporting main stem or trunk of more than 30 cm diameter.

In leasehold forestry, conflicts have been observed during the identification and allocation of lease land, and over the leasehold forest itself. Before the leasehold land has been handed over, conflicts concern boundary claims between private and leasehold land, membership of the leasehold group, and the conflicting claims of better-off and poorer families. After the land has been handed over, the main sources of conflict are grazing rights and social issues. Leased land is a limited resource, and when local people see the benefits of leasehold forest, many non-leaseholding households want to join leasehold groups (Singh, 1995). Such conflicts have been resolved by local community consensus, mediation from forestry rangers, the formation of additional leasehold groups where there is high potential for leasehold forestry, and other means.

MANAGEMENT AGREEMENTS IN COMMUNITY AND LEASEHOLD FORESTRY

The legal basis for a community and or leasehold forest is a certificate issued by a forest agency. These certificates are contracts between the users and the government. A CFUG is first formally registered at the District Forest Office. It then prepares an operational plan for the community forest in a participatory manner among its members. The chairperson of the CFUG submits the operational plan for the approval of the District Forest Officer, who examines the documents and issues a certificate for the community forest. The chairperson signs a commitment letter stating that the CFUG will abide by the provisions made in the operational plan.

Leasehold groups, which are made up of five to 20 traditional users of the forest, follow a similar procedure. The main difference is that the District Forest Officer forwards the operational plan to the Regional Director of Forest,²⁴ who approves it and issues a certificate to the leasehold group for the leasehold forest. The District Forest Officer then prepares a lease commitment paper, which the chairperson of the leasehold group signs.

²⁴ There are five political and administrative regions in the country.

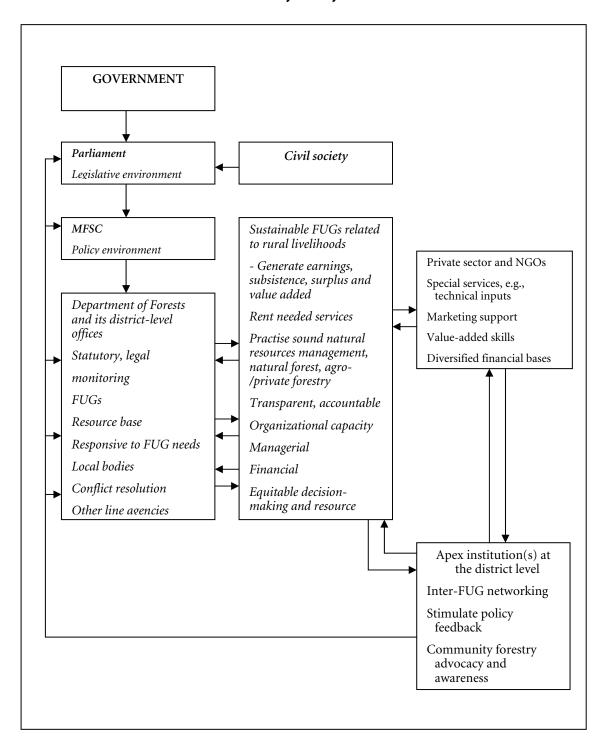


FIGURE 3 Stakeholders and their functions in community forestry

PLANNING AND MONITORING OF COMMUNITY AND LEASEHOLD FORESTS

The operational plan provides a broad framework for developing a detailed plan and monitoring system. Under these general guidelines, CFUG members carry out annual planning. Details of the annual plan and monitoring mechanism are worked out in advance at the monthly meetings of the Forest User Committee (FUC),²⁵ which is responsible for planning, implementing and monitoring progress in community forestry. The FUC's plan is then tabled at the CFUG's annual general assembly for approval. The CFUG is required to submit an annual progress report to the District Forest Officer describing the activities planned and achieved.

When an operational plan is being prepared or renewed, a ranger (a mid-level forestry technician) prepares an inventory of the forest stock in each block or compartment and over the whole community forest area. This inventory provides the basis for planning activities in the community forest. The range post (the lowest-level functionary in forestry administration) supervises forest planning at the ilaka²⁶ level, which is also where CFUGs present their annual plans. For administrative purposes in the forestry sector, a district is divided into one to three ilaka and has eight to 15 range posts. The ilaka-level plan is presented at the district planning workshop and subsequently at the regional planning workshop. The Department of Forest combines the outcomes of the district and regional planning workshops and submits the consolidated proposal to the Ministry of Forests and Soil Conservation and the National Planning Commission. The annual programme budget prepared by the Ministry of Finance, with recommendations from the National Planning Commission, obtains final approval from Parliament. Community forestry projects²⁷ are funded by donor agencies including the Danish International Development Agency (DANIDA), DFID, the Government of Australia, GTZ, the Swiss Development Cooperation (SDC) and the Cooperative for Assistance and Relief Everywhere (CARE) Nepal. Donor-funded projects provide technical and financial assistance for organizing the ilaka- and district-level planning workshops and meetings.

Leasehold groups adopt the same approach and process for planning at the range post/ilaka and district levels. Staff members from the District Livestock Services Office and NGOs/group promoters participate in the planning workshops. The leasehold forestry programme integrates forestry, livestock and microfinance organizations, whereas community forestry works solely with the forestry organization. Leasehold forestry programmes are presented separately at the regional-level forestry and livestock planning workshops. Forestry-related components of the annual programme are compiled at the Department of Forest and livestock components at the Department of Livestock Services. The departments then forward the programmes to their respective ministries, and they are finally approved by the National Planning Commission. The Ministry of Finance is responsible for allocating the budget, and the consolidated annual programme budget of all sectors is tabled in Parliament for approval in the form of the Appropriation Bill.

The FUC reviews progress in the community forest at its monthly meetings. The range post/ilaka forest office also monitors activities, including the extraction and distribution of forest products. Ultimately, the District Forest Office is responsible for the overall monitoring of all community forests in its district. Similarly, the Regional Director of Forest monitors all the community forests in its region on a sample basis. Donor-supported community forestry projects carry out more intensive monitoring because they have the necessary resources to pay their own staff and/or engage external consultants. Donor-supported projects also publish annual progress and monitoring reports.

The Community Forestry Division of the Department of Forest has a management information system section, which maintains records of community forests in the whole country, providing an overall picture of community forestry and information on individual districts. The Monitoring and Evaluation Division of the Ministry of Forests and Soil Conservation prepares guidelines and annual monitoring reports. In spite of its many layers and mechanisms, the monitoring system for community forestry is a weak and neglected component.

²⁵ The FUC is an executive committee of the CFUC. It is formed through election at the CFUG general assembly, and its tenure is normally fixed at two to three years.

²⁶ An ilaka is a territorial forest office under the District Forest Office. The ilaka forest office is headed by an assistant forest officer and administered by four range posts.
²⁷ Community forestry projects are funded by bilateral donors or international organizations for a limited period, such as

²⁷ Community forestry projects are funded by bilateral donors or international organizations for a limited period, such as three, five or ten years. Each project has its own working area or district, which is different from those of other projects.

All leasehold group members participate in monthly meetings where they review and monitor leasehold forestry activities. The leasehold group's activities are also monitored by the forestry ranger, the livestock junior technician/junior technical assistant and group promoters or social mobilizers at the field level. The District Coordination Committee (DCC) or District Forestry Coordination Committee (DFCC) monitors leasehold forestry programmes at the district level, while the project coordinator and livestock coordinator monitor the overall leasehold forestry programme at the project level.²⁸ A management information system is maintained at the project coordinator's office for the leasehold forestry programme throughout the country.

²⁸ Junior technicians/junior technical assistants are field-level livestock technicians based in the field offices who deliver livestock treatment services and facilitate the leasehold farmers through forage development. Group promoters are recruited by the Leasehold Forestry and Livestock Project Office. They are all women and selected from the leasehold group families. Group promoters receive intensive training in holding leasehold group meetings, collecting monthly saving, mobilizing community members and managing conflict. They work as messengers between leasehold groups and district forestry and livestock service offices. The DCC coordinates among line agencies at the district level and helps the smooth functioning of leasehold forestry activities. The committee members are people from the forestry and livestock sectors, representatives of the District Development Committee, women's development officers and district administration officers. DCCs are formed in the districts where leasehold forestry programmes have been launched. The DFCC is a new committee chaired by the chairperson of the District Development Committee, which is an elected body that coordinates the development activities of all the agencies operating in the district. Other members of the DFCC come from agriculture, livestock services, soil conservation, women's development, political parties, NGOs and the district administration office. The District Forest Officer serves as its secretary. The DFCC is a broader forum than the DCC; where they are formed, DFCCs therefore supersede DCCs. The main objectives of the DFCC is to coordinate forest development activities among stakeholders and to implement the forestry sector programme in a transparent and effective way.

Changes and trends in private, community and leasehold forestry

In 2005, the Department of Forest Research and Survey estimated the total area of forest in Nepal to be 3 635 500 ha, distributed in all ecological zones. Regarding species, the Terai has tropical and sub-tropical broadleaf forests of *Shorea robusta* and associates, whereas the mid-hills have broadleaf (*Castanopsis, Schima wallichii*) and chirpine (*Pinus roxburghii*) forests. The high Himalaya comprises temperate forest species including blue pine (*Pinus excelsa, Cedrus deodara*), oak (*Quercus spp.*), Arundonaria (thin bamboo) and junipers.

PRIVATE FORESTRY

The above estimate does not include the trees planted in privately owned land, which covers about 50 000 ha. Most of the trees in private forests are fodder or multipurpose species for domestic use. Between 1991/1992 and 2001/2002 the area under this form of tenure increased by about 16 percent, an impressive rate of growth considering the competing demands from alternative uses of privately owned land. According to Central Bureau of Statistics figures (CBS, 1993; 2004), about one-third of all landholdings contain planted trees. While the total area and the proportion of the total area of holdings devoted to tree planting increased, the proportion of households planting trees decreased from nearly 40 percent in 1991/1992 to about 30 percent in 2001/2002.

TABLE 2Trends in tree planting on private land, 1991/1992 to 2001/2002

Description	1991/92	2001/02
Area under trees (ha)	44 087 ¹	50 972
Percentage of area devoted to tree planting	1.70	1.92
Percentage of landholdings planting trees	39.48	29.42

¹The area under trees is calculated by dividing the total number of trees by the average number of trees per hectare reported for the year 2001/0202. This figure assumes that the number of trees per hectare in 1991/1992 was the same as in 2001/2002.

COMMUNITY FORESTRY

Of the 75 districts in Nepal, 74 have community forests – only one mountain district, Mustang, does not. Altogether, community forests cover 1 139 233 ha and are found in all ecological zones, including high mountains, mid-hills, Siwaliks, inner Terai and Terai.²⁹ Most community forests are natural, but human-made plantations have also been given to CFUGs. Some 83 percent of community forests are covered with forest, 14 percent with shrubs, 3 percent with plantations, and less than 1 percent with grass (Kanel, 2004).

Government-owned forests have been leased out in 31 districts, mostly in the mid-hills and some parts of the inner Terai. The total area of degraded forest land transferred as leasehold forests to groups of poor people is 8 507 ha. The condition of these forests has improved dramatically, and they have now been turned into secondary forests.

²⁹ The inner Terai region covers the valleys between the Mahabharat and Siwalik hills. Mahabharat is a wide range in the mid-hills, and Siwalik (also known as Churia hill) is the outermost Himalaya in Nepal. The plains located in the southern part of Nepal are referred to as the Terai.

Tenure type	Forest area	No. of districts covered	Ecozones
Community forests	1 139 233 ha	74	All
Leasehold forests	8 507 ha	31	Mid-hills and inner Terai

TABLE 3 Areas under community and leasehold forests

Sources: The management information systems of the Community Forestry Division for community forests, and of the Leasehold Forestry Programme for leasehold forests.

Enactment of the Private Forest Nationalization Act of 1957 marked the beginning of forest policy in Nepal. The act aimed to protect, manage and utilize national forests and promote public welfare. Earlier, during the Rana regime,³⁰ vast tracts of forests were under the private management of elite groups, including members of the royal families and their relatives. Despite its intended objective, the act became very unpopular with the public because it undermined the traditional rights of local communities to protect, manage and utilize local forest resources for their own sustenance. The policy therefore resulted in the destruction of vast tracts of valuable forest.

Under the Forest Policy of 1961, attempts were made to protect, manage and utilize forests for the improved economic welfare of the people and the country. The first Forest Act was promulgated and enforced in 1961. It concentrated on State ownership of and authority over forests, and all lands except agricultural land were to be treated as forest land. This encouraged the conversion of forest areas into agricultural land as a way of laying private claim to publicly owned lands. The rate of deforestation accelerated, and national forest cover had declined from 51 to 45.6 percent by 1964.

According to the Forest Protection (Special Arrangement) Act of 1967 all forest offences, including forest encroachment, were treated as State crimes. The District Forest Officer was authorized to seize all goods and equipment and put offenders in jail. The officers tried to enforce the act, but deforestation was not reduced. In 1976, the National Planning Commission formulated the National Forest Policy with the objective of maintaining and restoring ecological balance through reforestation and watershed management programmes. However, problems of encroachment and deforestation were not properly addressed, and forest area continued to decline from 45.6 percent in 1964 to 35.7 percent in 1977.

In response to the substantial loss in forest area, the Panchayat Forest (PF) and Panchayat-Protected Forest (PPF) Regulations of 1978 were promulgated, devolving forest management responsibility to local bodies. The village Panchayat was the lowest political and administrative unit. Degraded national forests were handed over to the village Panchayats for either plantation or protection and management. These provisions involved the lowest political body in planning and decision-making processes, but did not include the participation of traditional users, who had a direct stake and concern in the PFs and PPFs. Thus, the regulations did not address the issues of field-level users. This led to a new wave of conflict among local users, local politicians and the forestry establishment (which often harassed local people under the pretext of mismanagement).

The Master Plan for the Forestry Sector (MPFS), prepared in 1988 and approved by the government in 1989, addressed many of these issues and provided a basic framework for the forestry sector. The MPFS classifies Nepal's forests into six categories, one of which is community forest. One of the plan's priority areas is local community participation in the management of community forests.

Following the restoration of democracy³¹ in 1990, the CFUG concept emerged formally in 1991, when a Community Forest Policy was issued. This policy is widely recognized as an excellent example of local empowerment and the involvement of users in forest resource management (Joshi and Pokharel, 1998). Its key directives are: (a) the handover of all accessible forests to traditional users as community forests; (b) the priority of community forests over other kinds of forest ownership; (c) District Forest Offices' authorization to hand over community forests; (d) the

³⁰ The oligarchic Rana family ruled Nepal for 104 years, until February 1951.

³¹ The King of Nepal banned the multiparty system in 1961 and enforced the partyless Panchayat political system on 31 December 1964. The Panchayat system was overthrown by people's movements in 1990, when democracy and the multiparty system were restored.

formation of CFUGs to protect, manage and utilize the community forests according to the provisions made in the operational plan approved by the District Forest Office; (e) CFUGs' authorization to fix the price of forest products; and (f) CFUGs' authorization to utilize surplus funds for any kind of community development work. Based on the MPFS, the Forest Act of 1993 and the Forest Regulation of 1995 provide a legal basis for the implementation of forest policy.

The handing over of community forests accelerated rapidly during the 1990s, but gradually declined in later years. This was mainly because most of the accessible forests in the hills and mountains had already been handed over, but also because the government had restricted the handing over of large tracts of forest in the Terai. Government policy is to manage larger forests in the Terai under the Collaborative Forest Management Programme. In accordance with provisions in the Forest Policy of 2000, only scattered and disjointed patches of forest are handed over as community forests in the Terai.

Before a community forest is handed over, the CFUG concerned is required to prepare a forest inventory quantifying the growing stock of the standing forest and the allowable cut. This is technical and time-consuming work, which most CFUGs cannot do by themselves. However, neither can they afford to pay an outside technician to carry out the inventory for them; the job is usually done by a mid-level forestry technician. This is one of the factors that has delayed the handing over process and the renewal of old community forest. It also has a direct negative impact on the harvesting, extraction and sale of forest products, which ultimately affects the community development and poverty alleviation activities of CFUGs. Recently, the Danish Government withdrew its funding of community forestry development in 38 districts; other donors, including the Australian Agency for International Development (AusAid), the United States, GTZ and SDC, have gradually reduced their community forestry programmes until the current situation of conflict²² in the country improves. Annex 4 shows how the trend in handing over community forests increased from 1988 to 1996 and gradually slowed down thereafter.

TABLE 4

	Regulations 1978	Amendment 1979	Amendment 1987	Regulations 1995
Community forest area	PF not more than 125 ha; PPF not more than 250 ha	PF not more than 125 ha; PPF not more than 250 ha	No limit	No limit
Rate of benefit return to the community (%)	40%	75%	100%	100%
Use of community funds	50% for forestry	50% for forestry	100% for forestry	Forestry; surplus for community development
Pricing of products	Not less than government rates	Not less than government rates	Not less than government rates	As per CFUG decision
Plan prepared by	District Forest Office	District Forest Office	Community	Community
Plan approved by	Conservator	Conservator	Regional Director (Conservator)	District Forest Office
Community forest boundary	Administrative	Administrative	Administrative	Defined by use practices
Management responsibility	Panchayat	Panchayat	User committee under Panchayat	CFUG
Chairperson	Elected leader of Panchayat	Elected leader of Panchayat	Nominated by Panchayat	Selected by CFUG assembly

Evolution of community forestry in Nepalese legislation

Source: ICIMOD quoted in McDougall, 2002.

³² Nepal has been facing serious security problems in its interior for the past decade owing to violent conflict between Maoist rebels and the government. About 14 000 people have lost their lives to this problem.

LEASEHOLD FORESTRY

The Leasehold Forest Regulation was promulgated in 1978 at the same time as the PF and PPF were introduced. However, leasehold forestry was not effectively implemented in the field until 1993. The Leasehold Forestry and Forage Development Project, which started in 1993, was the first project to implement leasehold forestry for the poor. It was first piloted in four districts and gradually extended to ten districts from 1993 to 2001. The National Planning Commission considered leasehold forestry to be an effective and tested model for poverty alleviation and environmental conservation. It expressed its strong commitment to this programme for the poor and categorized it under Priority I in the Tenth Five-Year Plan.³³ Later, during 2002/2004, the project was extended to cover 26 districts with funding from government resources and no additional support from outside donors. The Forest Act and Forest Regulation also provided a legal framework for the promotion of leasehold forestry. In 2002, the Ministry of Forests and Soil Conservation brought out the Leasehold Forestry Policy to support the poor and promote forest-based industries and ecotourism. As a result, the leasehold forestry concept was included in the Western Upland Poverty Alleviation Project,³⁴ which has been implemented since 2002 for poverty alleviation in the most remote districts of the Karnali zone – Humla, Jumla, Bajhang and Bajura. Initiated in four districts more than 11 years ago, the Leasehold Forestry Programme is now being implemented in 11 districts, and the government has signed an agreement with IFAD for implementation of the programme's second phase in 22 districts for a period of eight years starting in July 2005. Throughout Nepal, an estimated 900 000 ha of shrub- and other appropriate land is available for leasing to about the same number of households (Yadav and Dhakal, 2000).

The handing over of leasehold forests to the poor followed an increasing trend from its beginnings in 1993 up to 2000, but the pace slowed when funding from IFAD ceased. Currently, the Western Upland Poverty Alleviation Project and the Leasehold Forestry and Livestock Project are being implemented in 30 districts, and the pace of handing over leasehold forests has picked up again. NGOs have been heavily involved in identifying and mapping potential lease land, facilitating leasehold groups' preparation of operational plans, forming and strengthening groups, and developing capacity. In hill and mountain zones, the Department of Forests is the *de jure* authority for administering all degraded and shrublands, but local communities, as customary users, continue to use these lands for grazing, the extraction of forest products and the holding of social and cultural events. The allocation of community or leasehold forestry is therefore basically determined by the local community or users of forest land.

Protecting leasehold forest from grazing and forest fire invigorates the natural regeneration of local grasses and tree species. The leasehold groups manage their forests by clearing unwanted grasses and shrubs, thinning thick stands (poles and saplings), pruning branches, and singling stems.

At two monitored sites in Makwanpur and Kavreplanchok districts, the numbers of plant species increased by 57 and 86 percent, respectively, between 1984 and 2000; the numbers of trees and tree species also increased substantially (IFAD, 2003). Field data were gathered from two sites – one at Chitrepani in Makanwapur district, and the other at Bhagwatisthan in Kavre district – in 1994/1995 and 2000. One of the most significant measurable differences in vegetation between 1994/1995 and 2000 was a massive increase in species diversity. In Chitrepani, plant diversity in the leasehold forest (9 ha) increased from 37 species in 1994 to 58 in 2000, an increase of 57 percent. In Bhagwatisthan leasehold forest (78 ha), it increased from 70 species in 1995 to 130 in 2000, an increase of 86 percent (FAO, 2000a).

In newly formed leasehold forests, an average of only 32 percent of the ground was found to be covered by vegetation; this steadily increased to 50 percent in one of the two-year-old forests, 68 percent in the four-to-five-year-old forests, and 78 percent in the six-to-seven-year-old forests

³³ The National Planning Commission uses a scoring system to rank development projects into three orders of priority – I, II and III. The performance of Priority I projects and programmes is more intensively monitored at the higher level. The Five-Year Plan sets out national and sectoral strategies and priorities, as well as physical targets, under various programmes. The current (Tenth) Five-Year Plan covers the period 2002 to 2007.
³⁴ This is a poverty alleviation project, which was launched in remote districts of Nepal with technical and financial

³⁴ This is a poverty alleviation project, which was launched in remote districts of Nepal with technical and financial assistance from IFAD. Leasehold forestry development is one of its main components, and seeks to provide poor households – the project's main target group – with access to and control over forest resources.

(Singh and Shrestha, 2000). The project impact study records that 84 percent of project households reported fewer months of scarcity of animal feed, even though they were keeping increasing numbers of large livestock (FAO, 2000b).

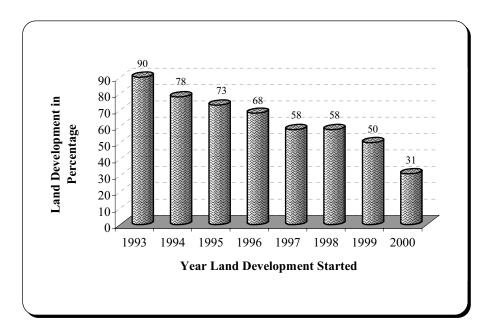


FIGURE 4 Vegetation cover in leasehold forests, 1993 to 2000

Management and tenure systems in community and leasehold forestry

COMMUNITY FORESTRY

Forest management in community forests

Initially, community forest management was oriented towards the production of timber, fuelwood and tree fodder from plantations of pine and other species. Later, the strategy changed to the management of natural regeneration. Most community forests are protection-oriented, but thinning, pruning, singling and the removal of dead and fallen trees are common practices. A selection system³⁵ is therefore used in the management of community forests, and there is little intensive forest management. Most community forests have high potential for non-timber forest products (NTFPs), and the conservation and cultivation of NTFPs has recently been introduced in some forests. However, fuelwood, timber and fodder are still the prime products extracted from community-managed forests.

The Livelihoods and Forestry Programme³⁶ carried out a baseline survey in 2003 and found that forest conditions were improving, according to 93 percent of respondents in the western and 72 percent in the eastern districts, and that CFUG members believed that managing community forests is a worthwhile endeavour. This programme covers four districts in the eastern development region, three in the western and eight in the mid-western. Branney and Yadav (1998) assessed the change in forest conditions and management in community forests between 1994 and 1997 in four eastern hill districts and found an overall improvement in community forest conditions: the total number of stems per unit area increased by 51 percent, even though the basal area of forest in poor condition increased by a significant 29 percent. In a study on land-use change, Jackson *et al.* (1998) found that shrub- and grassland had been converted into more productive categories of forest land, reflecting the care that communities take in managing and conserving their forest resources.

Livelihoods in community forestry

Livelihood improvement for poor households through the community forestry programme is a new concept. Some community forestry projects started this on a pilot basis and have observed very positive results. The Fourth National Community Forestry Workshop (2004) identified livelihoods as one of the key issues that should be integrated with forestry policy, laws and programmes.

Capacity in community forestry

The Strategy for Community Forestry (1992) included the following elements: (a) phased handover of all accessible hill forest areas to communities, as long as they are able and willing to manage them; (b) formulation and implementation of simple operational plans; and (c) retraining of forestry staff for their new roles as advisers and extensionists. Accordingly, the management responsibility for community forests was transferred to the CFUGs. The field staff (rangers, assistant forest officers and district forest officers) provide advice, technical assistance and support to the CFUGs, but final decisions are made be the groups themselves. District forest officials (including forestry rangers), NGOs and project officials have received rigorous training on participatory forest management, training methodology (training of trainers), facilitation methodology, and tools for rapid and

³⁵ The selection system in forest management involves removing old, selected, identified or marked trees from the forest at specified intervals. At the same time, smaller trees are thinned out to provide light and space for seedlings to emerge and poles to grow. The main objective of the selection system is to keep the forest in a condition of continuous regeneration and growth.

³⁶ With technical and financial assistance from DFID, this programme launched the first community forestry programme initiated in Nepal since 2001. It seeks to improve livelihoods through forestry.

participatory rural appraisal; they have also made extensive visits to learn from other community forests. Trained staff from the District Forest Office and local NGOs train the CFUGs to enhance their capacity to manage their groups and forests in a sustainable manner. A cadre of local resource people has been selected from among innovative and active members of the CFUGs. These local resource people have received intensive training and now provide training and facilitation for other community forests.

The Community Forestry Division and community forestry projects/programmes supported by funding agencies have developed and published community forestry guidelines, leaflets, manuals, training course curricula, handbooks, extension materials, radio programmes, and other audiovisual and printed materials. The division tries to maintain uniformity by adopting the same processes all over the country. Thus the community forestry programme is best implemented when a forestry staff member from one district is transferred to another so that the same process can be followed in all districts. The capacity of district forest offices, NGOs involved in the programme and CFUGs has been enhanced through rigorous training courses and visits.

CFUGs are federated at the district, regional and national levels. The national-level organizations are FECOFUN and NEFUG, each of which has a national network that works as a pressure group and provides capacity building to the CFUGs. As well as the central Training Division in Kathmandu, regional training centres have been established in all five development regions. The division and centres train mid-level technicians (mainly rangers) and officers; most training courses focus on community forestry.

Most studies and research in the forestry sector focus on aspects of community forestry. They are conducted by university students pursuing academic degrees (B.Sc., M.Sc. and Ph.D.), community forestry projects and scholars and professionals from various countries, and provide valuable analytical insights into various community forestry issues and measures for improving the programme's effectiveness.

LEASEHOLD FORESTRY

Forest management in leasehold forests

In leasehold forestry, leasehold groups at first emphasize protection measures such as warding off grazing animals and forest fires. Forestry and livestock officials provide technical inputs and support for this; the protection helps to invigorate the natural regeneration of local grass and tree species. After the third year, leasehold groups start to carry out prescribed improvement activities, including clearing weed species, thinning by removing stems to maintain equal distances, removing dead, dying and diseased trees, and pruning branches.

In the second phase, leasehold groups start to sow or plant perennial forage species (such as stylo, molasses, broom grass and Napier grass) in vacant areas. Multipurpose and fodder tree species are planted on the lease land, and these can provide group members with short-, medium- and long-term income and benefits. The trees planted include fruit-bearing species that have market value (*Choerospondias axillaris, Juglans regia* and *Bassia butyraceae*). Pineapple, banana, ginger, turmeric and NTFPs are intercropped for medium-term benefits. In these early stages, the leasehold group members make substantial investments of labour and inputs. Forests are intensively managed by utilizing both horizontal and vertical spaces to reap optimum production and income benefits. Agroforestry with the planting of forage crops is commonly practised on the leased land, but the unanimous decisions of leasehold group members, with technical advice and inputs (planting materials, seeds, training) from the district forest and livestock services offices.

Livelihoods in leasehold forestry

Most leasehold group members are marginal or small farmer³⁷ families, whose own food production is enough to feed their families for only up to six months a year. The leasehold forestry programme therefore aims to diversify the income sources of leasehold group members through the use of the

³⁷ Farmers with less then 0.5 ha of agricultural land and per capita income of less than US\$80 are considered small farmers.

leased land and/or off-farm income-generating activities. A household survey showed that the period of household food deficiency among leasehold group members decreased (FAO, 2000b). The leased land has become a good source of income for many poor households, who can now send their children to school as a result. After becoming leasehold group members, many households have started small enterprises, such as keeping goats, selling milk, providing veterinary services and selling veterinary products, beekeeping, vegetable farming and selling fruits and forage seeds (Singh and Shrestha, 2000). Leasehold groups have developed their own savings mechanisms and cooperatives from which they can obtain loans; this has drastically reduced their dependence on local moneylenders who charge exorbitantly high interest rates. Long-term land tenure provides leasehold groups with a strong incentive to invest labour and inputs for short- and long-term crops on the leased land, thus providing an opportunity to improve their livelihoods.

Capacity in leasehold forestry

The first part of the Leasehold Forestry Project (1993 to 2003) was implemented for four years as an exploratory stage; this was followed by a six-year development period. Based on the lessons learned from this first phase, the project has been continued into a second phase spanning the period from 2005 to 2012. In the three districts of Makwanpur, Dhading and Tanahu, leasehold groups have gradually been federated into multipurpose cooperatives for long-term sustainability, but the federation process is a long one. At present, the project receives back-up support from two agencies: the Leasehold Forestry Section (unit) of the National Forest Division of the Department of Forest; and Western Upland Poverty Alleviation Project. Operational guidelines, training and workshop manuals and handbooks have been prepared.

Learning from the lessons of the first phase, leasehold groups have been joined into clusters of five to 15 groups, each covering at least 70 households. In 2005, the leasehold forestry project was converted into a programme,³⁸ which started in four districts and has now been extended to 30. District forest and livestock services officials and other stakeholders have become more familiar with the leasehold forestry concept and implementation procedures. Separate leasehold forestry policy, laws and programmes have been formulated, and the National Planning Commission and Ministry of Forests and Soil Conservation, including its Department of Forest, are committed to implementing these as a priority.

Leasehold forestry policy and legislation

The Forest Act of 1993 and the Forest Regulation of 1995 accord community forestry priority over leasehold forestry. Potential forest land is identified and a 35-day legal notice served to the local community soliciting their interest in accepting the identified patch of forest as a community forest. This patch can then be given out as leasehold forest only if the local community does not respond by submitting an application for community forestry.

The District Forest Officer is legally authorized to hand over virgin or productive and dense forest as community forest without discrimination regarding the socio-economic condition of the local community. There is no limit on the forest area that can be handed over, and community forests range from small patches to more than 5 000 ha. On the other hand, only small patches – usually of between 5 and 10 ha – of degraded forest or shrubland are leased out to groups of poor families; the Regional Director of Forest has to approve the leasing out, which involves a long bureaucratic process.

It should be noted that there is not yet any government policy or programme to implement leasehold and community forestry in a complementary manner. The Tenth Five-Year Plan states that leasehold forests can be implemented independently or within community forests, but guidelines for this have not yet been developed.

³⁸ Project activities are implemented for fixed periods, but a programme continues as part of regular government activities. For example, the Hills Lease Forestry and Forage Development Project was implemented for eight years, until its status was changed to programme so it could continue as a regular government programme. During a project, development activities are carried out intensively and resources are provided to engage national and international experts on contracts.

In order to obtain forest land on lease, an aspiring group has to submit a financial feasibility report. This is a demanding condition for the poor people concerned, and the forestry ranger usually helps them to meet the legal requirements.

CFUGs are legally registered at the District Forest Office, but the legal registration of leasehold groups is not stipulated in the Forest Act or Leasehold Regulation. In the first phase of the Leasehold Forestry Project, groups were registered with the Small Farmers Development Project (SFDP) of the Agricultural Development Bank, but this was legally questionable. SFDP is no longer an authorized line agency for the second phase of the project or for the Western Upland Poverty Alleviation Project.³⁹ The legal status of leasehold groups is therefore unclear. However, leasehold group cooperatives are legal entities that are officially registered at the District Cooperative Office.

In interviews, government officials and field forestry staff mentioned that they are positive towards the community and leasehold forestry programmes because both are successful. However, while leasehold forestry addresses poverty directly, this is not so clear in community forestry. Officials perceive that the two programmes could complement each other.

GOVERNMENT POLICY AND LEGAL ISSUES RELATED TO COMMUNITY AND LEASEHOLD FORESTRY

Table 5 summarizes the policy and legal issues in community and leasehold forestry.

³⁹ In the first phase of the Leasehold Forestry Project four agencies – the Department of Forest, the Department of Livestock Services, SFDP and the Nepal Agricultural Research Council – worked together and were regarded as line agencies for the project. In the second phase, only the first two are recognized as line agencies.

TABLE 5	
Policy and legal issues in community and leasehold forestry	

S.N.	Community forestry	Leasehold forestry	Government-managed forestry, administered by the District Forest Office
1	The basic objectives are: a. meeting the bona fide needs for forest products of the people living near forest areas;	The basic objectives are: a. poverty alleviation for the poor households living close to degraded forest areas;	The objective is not explicitly expressed, but the general perception is that it is to fulfil the forest product needs of people in general.
	b. managing good forest areas with a view to sustaining the supply of forest products. Degraded areas can be part of a community forest, but as long as there is a choice, they are seldom accepted, and currently account for less than 5% of community forests (Kanel, 2004). Communities select the best option.	b. ecorestoration of degraded forest areas.	in general.
2	Includes everyone living near forest areas, irrespective of their economic, social or ethnic status. There are no targeting criteria to address poverty.	Targets poor people living near forest areas, including disadvantaged ethnic groups.	The target group is not spelled out.
3	CFUGs are comparatively large and heterogeneous.	Leasehold groups are small and homogeneous.	There is no group approach.
4	The approach aims mainly to manage existing forests. It is a preventive measure against the degradation of forest through regulating the harvest of forest products and controlling grazing, forest fires, etc.	The approach pays more attention to natural resource management. It tries to correct past mismanagement by rehabilitating and restoring degraded forest areas.	Covers forest areas other than community, leasehold and other forest for specific purposes. A forest management scheme is prepared for harvesting specified amounts of forest products each year.
5.	Forest products are available to beneficiaries only at specified times of the year. For example, fodder collection may be allowed only during certain periods.	Forest products are available to beneficiaries throughout the year (as determined by them).	Forest products are available for all the citizens of the district; surplus products are sold at auction.
6	Manages forests on the basis of operational plans; the benefits must be shared with the whole community.	Manages forests on the basis of operational plans; the benefits flow directly to beneficiaries.	Manages forest according to the forest management scheme; really consists only of gathering fallen trees.
7	CFUG members have little incentive or interest in implementing the operational plan. An individual member can get fuelwood, fodder and timber for subsistence at fixed prices, but cannot use the revenue generated from the forest, which is normally spent for community development. Individual households therefore have less interest in the forest.	The concept encourages environmental restoration and protection by giving beneficiaries an incentive to implement the operational plan. There are close linkages between the benefits obtainable and the ecorestoration of degraded leasehold areas.	There are no incentives, other than the District Forest Office's responsibility; forests are therefore degrading.
8	Community forestry is not legally mandated to alleviate poverty, but forest conditions have been considerably improved in these forests.	Leasehold forestry prescribes a unique mechanism in which poor and resource-scarce people are involved in conserving the forest and harnessing the benefits from it.	Limited amounts of timber from government-managed forests are available to victims of natural calamities at subsidized rates. Other households can obtain limited amounts for house construction and agricultural tools. But the sale and distribution of forest products through the District Forest Product Supply Committee are not effective, and people are not getting timber easily.

9	Most forests are handed over for 5 years, extendable indefinitely for periods of 5 to 10 years if they perform satisfactorily. There is no specified time limit for reverting community forests back to the government.	Degraded forests are leased out for a maximum of 40 years, which can be renewed for another 40 years.	Forests are directly administered by the District Forest Office, with no people's participation.
10	In the hills, there is no need to share the benefits from the forest with the government. In the Terai and Inner Terai, 15% of the benefits from forest product sales – mainly of sal (<i>Shorea</i> <i>robusta</i>) and khair (<i>Acacia catechu</i>) – to non-members is paid to the government.	Poor families are exempt from leasing fees. They do not need to share the benefits with the government.	15% of revenues collected from forests are shared with the local government District Development Committee; the remaining 85% go into government funds.
11	CFUG members maintain a feeling of "our" community forest.	There is a strong feeling of "my" forest among the leasehold group members. This sense of ownership is the principal driving force in managing the forest.	As it can be managed as common property, forest is often treated as an open-access resource; hence the "tragedy of the commons" applies. There is no feeling of ownership among the local communities.
12	Forest is protected and forest products are collected.	Forest is intensively managed, accompanied by intercropping with perennial forage species.	Forest is protected by the District Forest Office staff.
13	Fuelwood and timber are the main products, but NTFPs are also gathered.	Forage and NTFPs are the main products.	Timber is the main product, but NTFPs are also collected.
14	Only the forestry organization is involved.	This is an integrated approach that involves the forestry, livestock and cooperative sectors.	Only the District Forest Office is involved in protection.

Notes: * Through a notice in the official Nepal Gazette of 12 February 2001, the government completely banned the collection, utilization, sale, transport and export to other countries of two medicinal and aromatic plant species: panch aunle (*Dactylorhiza natagirea*) and bark of Okhar (*Juglans regia*).

** A policy provides a broader framework, but for implementation it is necessary to formulate an act, regulation and periodic and annual programmes. For example, the Leasehold Forest Policy (2002) is not included in the Forest Act (1993) and Forest Regulation (1995), so it cannot be implemented effectively in the field.

Effectiveness of different forest tenure systems

Community forestry aims to fulfil basic forest product needs, whereas the main objective of leasehold forestry is poverty alleviation and rehabilitation of degraded forest lands (environment conservation). The coverage of community forestry is much larger in terms of both forest area and population, but it is not directly focused on poverty reduction. Leasehold forestry has smaller coverage, but has a very positive impact on poverty alleviation, as well as improving degraded forest lands owing to the stronger sense of ownership among users.

COMPARISON OF COMMUNITY, LEASEHOLD AND GOVERNMENT-MANAGED FOREST

Table 6 compares community, leasehold and government-managed forestry (UNOPS, 2001).

S.N.	Community forestry	Leasehold forestry	Government-managed forestry, administered by the District Forest Office
1	The basic objectives are:	The basic objectives are:	The objective is not explicitly
	a. meeting the bona fide needs for forest products of the people living near forest areas;	a. poverty alleviation for the poor households living close to degraded forest areas;	expressed, but the general perception is that it is to fulfil the forest product needs of people in general.
	b. managing good forest areas with a view to sustaining the supply of forest products. Degraded areas can be part of a community forest, but as long as there is a choice, they are seldom accepted, and currently account for less than 5% of community forests (Kanel, 2004). Communities select the best option.	b. ecorestoration of degraded forest areas.	
2	Includes everyone living near forest areas, irrespective of their economic, social or ethnic status. There are no targeting criteria to address poverty.	Targets poor people living near forest areas, including disadvantaged ethnic groups.	The target group is not spelled out.
3	CFUGs are comparatively large and heterogeneous.	Leasehold groups are small and homogeneous.	There is no group approach.
4	The approach aims mainly to manage existing forests. It is a preventive measure against the degradation of forest through regulating the harvest of forest products and controlling grazing, forest fires, etc.	The approach pays more attention to natural resource management. It tries to correct past mismanagement by rehabilitating and restoring degraded forest areas.	Covers forest areas other than community, leasehold and other forest for specific purposes. A forest management scheme is prepared for harvesting specified amounts of forest products each year.
5.	Forest products are available to beneficiaries only at specified times of the year. For example, fodder collection may be allowed only during certain periods.	Forest products are available to beneficiaries throughout the year (as determined by them).	Forest products are available for all the citizens of the district; surplus products are sold at auction.
6	Manages forests on the basis of operational plans; the benefits must be shared with the whole community.	Manages forests on the basis of operational plans; the benefits flow directly to beneficiaries.	Manages forest according to the forest management scheme; really consists only of gathering fallen trees.

TABLE 6

Comparison of leasehold, community and government-managed forestry

7	CFUG members have little incentive or interest in implementing the operational plan. An individual member can get fuelwood, fodder and timber for subsistence at fixed prices, but cannot use the revenue generated from the forest, which is normally spent for community development. Individual households therefore have less interest in the forest.	The concept encourages environmental restoration and protection by giving beneficiaries an incentive to implement the operational plan. There are close linkages between the benefits obtainable and the ecorestoration of degraded leasehold areas.	There are no incentives, other than the District Forest Office's responsibility; forests are therefore degrading.
8	Community forestry is not legally mandated to alleviate poverty, but forest conditions have been considerably improved in these forests.	Leasehold forestry prescribes a unique mechanism in which poor and resource-scarce people are involved in conserving the forest and harnessing the benefits from it.	Limited amounts of timber from government-managed forests are available to victims of natural calamities at subsidized rates. Other households can obtain limited amounts for house construction and agricultural tools. But the sale and distribution of forest products through the District Forest Product Supply Committee are not effective, and people are not getting timber easily.
9	Most forests are handed over for 5 years, extendable indefinitely for periods of 5 to 10 years if they perform satisfactorily. There is no specified time limit for reverting community forests back to the government.	Degraded forests are leased out for a maximum of 40 years, which can be renewed for another 40 years.	Forests are directly administered by the District Forest Office, with no people's participation.
10	In the hills, there is no need to share the benefits from the forest with the government. In the Terai and Inner Terai, 15% of the benefits from forest product sales – mainly of sal (<i>Shorea</i> <i>robusta</i>) and khair (<i>Acacia catechu</i>) – to non-members is paid to the government.	Poor families are exempt from leasing fees. They do not need to share the benefits with the government.	15% of revenues collected from forests are shared with the local government District Development Committee; the remaining 85% go into government funds.
11	CFUG members maintain a feeling of "our" community forest.	There is a strong feeling of "my" forest among the leasehold group members. This sense of ownership is the principal driving force in managing the forest.	As it can be managed as common property, forest is often treated as an open-access resource; hence the "tragedy of the commons" applies. There is no feeling of ownership among the local communities.
12	Forest is protected and forest products are collected.	Forest is intensively managed, accompanied by intercropping with perennial forage species.	Forest is protected by the District Forest Office staff.
13	Fuelwood and timber are the main products, but NTFPs are also gathered.	Forage and NTFPs are the main products.	Timber is the main product, but NTFPs are also collected.
14	Only the forestry organization is involved.	This is an integrated approach that involves the forestry, livestock and cooperative sectors.	Only the District Forest Office is involved in protection.

Proposals for the way forward

One of the major policy and legal constraints to the expansion of private forestry is the fixation of a land ceiling in the Lands Act of 1964. The purpose of the act was to ensure some degree of equity in the ownership of land, which is the principal source of livelihood and income for most of Nepal's population. This policy objective makes it difficult to argue in favour of waiving the ceiling.

ADAPTING POLICIES AND LEGISLATION IN COMMUNITY FORESTRY

Social equity and poverty alleviation should be an ultimate goal of community forestry. The following second-generation issues for community forestry have been identified (Kanel, 2004):

- governance,
- livelihoods, and
- sustainable forest management.

The Ministry of Forests and Soil Conservation should formulate a policy to address these issues, and reflect this policy in legislation for its effective implementation in the field. This implies that forestry legislation (the Forest Act of 1993 and the Forest Regulation of 1995) needs to be amended to make it explicitly pro-poor.⁴⁰

In some Terai districts, the Ministry of Forests and Soil Conservation has adopted a multistakeholder approach by forming District Forestry Coordination Committees (DFCCs) chaired by the chairperson of the District Development Committee. Other members of the DFCC are the district soil conservation, livestock, agriculture and women's development officers, and representatives of NGOs, wood-based industries and political parties in the House of Representatives. The District Forest Officer is the *ex-officio* secretary of the DFCC. The main objective of the DFCC is to make all forestry sector programmes transparent for all stakeholders in the district. The DFCC concept should be adopted in all districts.

Community forests in the Terai, the hills and the high mountains contain large quantities of many NTFPs, including high-value medicinal and aromatic plants (Luitel *et al.*, 2004). These are collected from wild forests only, are exported and serve as sources of additional income for poor people. Proper conservation and cultivation of NTFPs is sporadic. The Ministry of Forests and Soil Conservation has recently published the NTFP Policy and Strategy (2005), and all community, leasehold and other forestry programmes should incorporate the large-scale cultivation of NTFPs, including medicinal and aromatic plants, to create short- and medium-term employment opportunities and income for poor people.

Enterprise and marketing aspects of forest products are a weak component in community forestry. The transformation of forest products into semi- or fully processed materials and goods is also very limited, even though such products have huge potential. The community forestry programme should adopt a policy to promote pro-poor enterprises with marketing support.

Leasehold forestry is a successful model for addressing poverty and the conservation and management of degraded forest resources. It gives the poor long-term tenurial ownership, encouraging them to invest their labour to reap greater benefits. Some community forests have adopted a similar concept on a pilot basis within their forest areas, and this has been found effective for poverty alleviation. The concept should therefore be adopted in all community forests.

In community forestry, elite groups who hold the key posts on executive committees obtain most of the benefits and opportunities. It is unlikely that all users – especially the poor, disadvantaged

⁴⁰ "Pro-poor" means that interventions are positively biased in favour of the poor.

groups and women – are able to participate actively, particularly in decision-making and benefit sharing; sometimes, it would be more accurate to refer to "committee forestry" rather community forestry. It is therefore recommended that community forestry adopt a policy of positive discrimination; policy and legal provisions should be made that earmark programmes and budgets for the poor.

In the Terai, all forests are located in the northern parts of the districts, while most of the population live in the southern areas. Only the communities adjoining forests – many of which settled there through migration – are considered to be the users and beneficiaries of community forests. Most traditional users who live some distance away from the forests are excluded from their conservation and management, and do not obtain any forest products or benefits. Surplus products from the community forests are sold through auction. Neighbouring communities or village development committees in the district cannot compete with timber contractors. Thus the government should adopt a policy and formulate legislation to enable the participation of traditional and distant⁴¹ users of community forests in the Terai. The needs of local people should be given priority over those of timber contractors who export forest products outside the district.

The range of the outer Himalaya is lower in altitude, ranging from 100 to 1 500 m above sea level. This area is called the Siwaliks and is fragile in structure, with loose gravel, conglomerates and coarse sand. Community forests with local participation are vital to conservation of the Siwaliks, and conservation-oriented forest management should be adopted in the community forests of this area. The removal of green trees and the carrying out of activities that disturb the soil should be completely banned, and perennial NTFPs should be promoted as sources of income for poor families.

Most community forests are protection-oriented, with simple thinning, pruning and singling. In order to get optimum benefits, intensive forest management practices should be adopted in the Terai, including the cultivation of NTFPs and forage farming.

LEASEHOLD FORESTRY POLICY

Although the leasehold forestry programme is effective for poverty alleviation and the rehabilitation of degraded forest lands with the active participation of poor people, it still covers only 8 500 ha in only 30 districts after a decade of implementation. It is thus time to extend the concept of leasehold forestry to all districts and more community forests. The government should allocate sufficient budget for this.

The concept of cooperatives as the apex-level bodies of leasehold groups has been implemented in the three districts of Makwanpur, Tanahu and Dhading. Cooperatives provide the leasehold groups with long-term institutional and financial sustainability, and have also resolved many conflicts. The cooperative concept should therefore be adopted more widely to cover all leasehold groups. In the longer-term, the cooperatives should form district- and national-level associations.

The Forest Act and Forest Regulation do not yet authorize District Forest Offices to hand over leasehold forests to groups of poor families; The necessary amendments to the act have not been made because Parliament has been absent. At present, the Regional Director of Forest approves lease certificates, but this is a time-consuming bureaucratic process. Authority for leasehold forests should be devolved to the District Forest Office, as is already the case for community forests.

Leasehold and community forests should not be regarded as competing with each other. They should rather be treated as complementary in order to obtain more benefits for the rural poor; the government should adopt a policy to make this happen.

Past experience shows that when only a few leasehold groups are formed in an area, they are easily suppressed by local elite groups. Leasehold forestry should adopt a cluster approach so that all leasehold groups can be included in cooperatives. It will be easier and cheaper to deliver services and inputs to such clusters, and clusters of five to 15 groups, representing at least 70 households each, will facilitate the bulk production and marketing of products.

⁴¹ These are forest users who live some distance from the forest and are not included in the CFUG.

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Size of holding	Total		Forest trees				No. of scattered trees
			No. of holdings	Compact plantation			
	No. of holdings	Area (ha)	reporting	No. of holdings	Area (ha)	No. of trees	
Holdings without land	26 700	118.2	1 179	229	10.2	13 979	6 966
Holdings with land	3 337 439	2 653 918.9	988 682	165 896	27 046.8	20 531 152	18 152 847
Less than 0.1 ha	260 547	13 241.6	34 510	1 294	21.9	16 356	197 346
0.1 to 0.2 ha	346 113	49 864.2	57 950	2 959	273.9	100 789	521 328
0.2 to 0.5 ha	972 259	327 060.8	246 199	23 441	1 507.2	1 119 226	3 309 725
0.5 to 1 ha	915 674	641 659.3	307 306	50 067	4 704.4	4 879 101	5 829 048
1 to 2 ha	588 649	791 965.0	229 431	53 555	9 420.9	7 004 889	5 207 090
2 to 3 ha	157 026	371 223.0	67 736	18 525	4 618.6	3 238 454	1 840 780
3 to 4 ha	51 573	175 690.5	23 361	7 772	2 452.6	1 620 373	623 822
4 to 5 ha	20 241	89 257.5	10 212	3 608	1 427.7	1 129 234	287 648
5 to 10 ha	21 575	139 750.2	10 393	4 061	2 195.6	1 265 672	292 272
10 ha and more	3 783	54 206.7	1 585	614	423.9	157 058	43 787
Total	3 364 139	2 654 037.1	989 860	166 126	27 057.0	20 545 131	18 159 813

ANNEX 1: FARM HOUSEHOLDS PLANTING FOREST TREES, BY SIZE OF HOLDING, AND DEVELOPMENT AND ECOLOGICAL REGION

Source: CBS, 2004.

ANNEX 2: PERCENTAGES OF FARM HOUSEHOLDS PLANTING FOREST TREES BY SIZE OF HOLDING, AND DEVELOPMENT AND ECOLOGICAL REGION

National average Average for 1991/92 2001/02 EDR 1991/92 2001/02 EDR 11 5.14 4.42 5.60 nd 5.14 4.42 5.60 nd 39.89 29.62 36.40 nd 15.94 13.25 15.90 nd 15.94 16.74 18.80 22.84 16.74 18.80 32.96 25.32 29.48 32.96 25.32 29.48 16.74 18.80 38.16 17 38.98 46.05 50.17 38.98 46.05 50.17 38.98 46.05 50.17 38.98 46.05 55.12 43.14 51.46 60.52 45.30 52.04 60.52 45.30 52.04 65.39 48.17 56.43	Size of holding	Percentage of hous	f households								
1991/92 2001/02 EDR without land 5.14 4.42 5.60 with land 39.89 29.62 36.40 n0.1 ha 15.94 13.25 15.90 n0.1 ha 22.84 13.25 15.90 ha 22.84 16.74 18.80 ha 22.84 16.74 18.80 ha 23.96 25.32 29.48 a 33.96 25.32 29.48 a 43.73 33.56 38.16 a 50.17 38.98 46.05 a 60.52 45.30 52.04 a 60.52 45.30 52.04 a 60.52 45.30 52.04 a 60.52 45.30 52.04		National aver	age	Average for	the developm	ent region(200	1/2002)		Average for the topographic region	e topograp	hic region
without land5.144.425.60with land39.8929.6236.40with land39.8929.6236.400.1 ha15.9413.2515.90ha22.8416.7418.80ha22.8416.7418.80ha22.8416.7418.80ha22.8416.7418.80ha22.8416.7418.80ha33.9625.3229.48a43.7333.5638.16a43.7333.5638.16a50.1738.9846.0550.1738.9846.0560.5245.1451.4660.5245.3052.04a60.5245.3060.00a65.3948.1756.43a55.1248.1756.43		1991/92	2001/02	EDR	CDR	WDR	MWDR	FWDR	Mountain	Hills	Terai
with land39.8929.6236.4010.1 ha15.9413.2515.90ha22.8416.7418.80ha22.8416.7418.80ha22.8416.7418.80ha32.9625.3229.48a33.5625.3229.48a43.7333.5638.16a43.7333.5638.16a50.1738.9846.0550.1738.9846.0550.4660.5260.5245.3052.04a60.5245.3052.04a65.3948.1756.43a55.1248.1756.43	ngs without land	5.14	4.42	5.60	1.643	4.05	13.71	0.00	3.24	3.95	4.58
10.1 ha 15.94 13.25 15.90 ha 22.84 16.74 18.80 ha 22.84 16.74 18.80 ha 32.96 25.32 29.48 a 33.56 38.16 38.16 a 43.73 33.56 38.16 a 50.17 38.98 46.05 50.17 38.98 46.05 60.52 43.14 51.46 60.52 45.30 52.04 a 60.52 45.30 52.04 a 65.39 48.17 56.43	ngs with land	39.89	29.62	36.40	29.22	32.84	24.56	14.77	38.30	33.28	23.89
ha 22.84 16.74 18.80 ha 22.94 18.80 a 32.96 25.32 29.48 a 33.56 38.16 38.16 b 43.73 33.56 38.16 c 43.73 33.56 38.16 c 43.73 33.56 38.16 c 50.17 38.98 46.05 c 55.12 43.14 51.46 c 55.12 43.14 51.46 c 55.12 45.14 51.46 c 60.52 45.30 52.04 a 60.52 45.30 52.04 a 65.39 48.17 56.43	nan 0.1 ha	15.94	13.25	15.90	10.29	12.93	23.98	4.54	15.46	12.68	13.45
ha 32.96 25.32 29.48 a 33.56 28.16 a 43.73 33.56 38.16 50.17 38.98 46.05 50.17 38.98 46.05 55.12 43.14 51.46 60.52 45.30 52.04 60.52 45.30 52.04 a 62.01 50.45 60.00 a 65.39 48.17 56.43	0.2 ha	22.84	16.74	18.80	16.04	20.17	17.86	8.47	28.42	18.50	12.68
a 43.73 33.56 38.16 50.17 38.98 46.05 50.17 38.98 46.05 50.12 43.14 51.46 60.52 43.14 51.46 60.52 45.30 52.04 a 62.01 50.45 60.00 a 65.39 48.17 56.43	0.5 ha	32.96	25.32	29.48	27.93	28.63	19.83	11.23	35.94	28.16	17.88
50.17 38.98 46.05 55.12 53.14 51.46 55.12 43.14 51.46 60.52 45.30 52.04 62.01 50.45 60.00 a 65.39 48.17 56.43	1 ha	43.73	33.56	38.16	36.97	38.60	24.95	15.35	39.42	38.29	25.18
55.12 43.14 51.46 60.52 45.30 52.04 60.52 65.39 48.17 56.43 a 53.34 48.17 56.43	ha	50.17	38.98	46.05	37.49	42.15	30.35	25.40	44.98	46.81	31.39
60.52 45.30 52.04 62.01 50.45 60.00 a 65.39 48.17 56.43	ha	55.12		51.46	36.69	44.85	36.42	28.53	54.38	55.21	36.73
a 62.01 50.45 60.00 62.01 50.45 60.00	ha	60.52	45.30	52.04	37.49	49.71	36.20	37.02	50.88	56.06	41.33
65.39 48.17 56.43	ha	62.01	50.45	60.00	39.39	49.10	45.78	48.02	61.34	63.10	46.83
	0 ha	65.39	48.17	56.43	37.98	59.08	42.05	37.00	45.58	74.17	45.58
/00.07 41.30 00.37	10 ha and more	73.34	41.90	68.37	41.38	34.27	6.33	48.09	100.00	70.05	35.43
Total 39.48 29.42 36.01 28.91		39.48	29.42	36.01	28.98	32.68	24.51	14.71	38.18	33.19	23.62

Sources: CBS, 1993; 2004.

ANNEX 3: AREA DEVOTED TO FOREST TREE PLANTING AS PERCENTAGE OF TOTAL AREA OF HOLDING, BY SIZE OF HOLDING, AND DEVELOPMENT AND TOPOGRAPHIC REGION

Size of holding	Percentage of area	of area of holding	ling							
	National average	erage	Average fo	r the develop	Average for the development region(2001/2002)	(2001/2002)		Average for the topographic region	he topograpi	hic region
	1991/92	2001/02	EDR	CDR	WDR	MWDR	FWDR	Mountain	Hills	Tarai
Holdings without land	1.02	12.93	19.24	0.55	69.34	129.24	0.00	11.43	89.83	8.54
Holdings with land	1.70	1.92	2.52	1.71	2.05	1.56	0.93	2.89	3.18	0.83
Less than 0.1 ha	1.27	2.16	2.70	0.44	2.87	13.33	0.19	3.86	0.54	3.46
0.1 to 0.2 ha	2.68	3.39	0.76	1.30	7.84	4.82	0.51	2.40	5.14	1.16
0.2 to 0.5 ha	1.56	1.82	1.91	2.47	1.70	3.41	0.75	3.64	1.92	1.36
0.5 to 1 ha	1.29	1.61	2.55	1.41	1.77	1.38	0.94	2.24	2.25	0.63
1 to 2 ha	1.73	2.07	2.48	2.23	2.18	1.47	1.15	2.34	3.36	1.02
2 to 3 ha	1.86	1.95	2.57	1.32	2.45	1.26	0.91	4.82	4.35	0.66
3 to 4 ha	2.20	1.93	2.49	1.16	1.88	1.77	1.77	2.91	5.29	0.75
4 to 5 ha	1.51	2.01	2.63	1.80	1.53	2.20	1.61	8.59	6.64	0.47
5 to 10 ha	2.34	1.93	3.48	1.11	1.48	0.84	0.17	2.96	10.69	1.02
10 ha and more	3.13	1.00	1.81	1.17	1.46	0.24	0.33	1.46	3.16	0.67
Total	1.70	1.92	2.53	1.71	2.06	1.56	0.93	2.89	3.18	0.83

Note: The proportion of area devoted to tree planting is less reliable for holdings without land. All households reported the number of trees planted in a scattered way. Equivalent area was calculated by dividing the number of trees reported by the average number of trees part of trees planted.

Sources: CBS, 1993; 2004.

Year of handover	No of CFUGs formed	Area handed over (ha)	No. of households	Area per
				Household (ha)
Before 1985	98	5 661.99	10 596	0.53
1985	1	15.50	53	0.29
1988	1	27.00	35	0.77
1989	10	567.96	1 115	0.51
1990	42	1 972.57	4 492	0.44
1991	87	5 011.53	12 973	0.39
1992	349	20 844.55	36 214	0.58
1993	737	52 121.01	80 944	0.64
1994	1 224	88 745.39	142 772	0.62
1995	1 654	120 817.47	179 876	0.67
1996	1 762	156 889.46	196 203	0.80
1997	1 592	133 978.83	177 390	0.76
1998	1 443	136 603.51	168 939	0.81
1999	1 157	99 210.00	135 182	0.73
2000	1 074	90 872.65	121 796	0.75
2001	850	84 773.63	96 737	0.88
2002	597	51 677.02	74 295	0.70
2003	578	43 496.10	67 697	0.64
2004	493	38 770.41	59 844	0.65
2005	42	7 176.44	8 359	0.86
Total	13 791	1 139 233.02	1 575 512	0.72

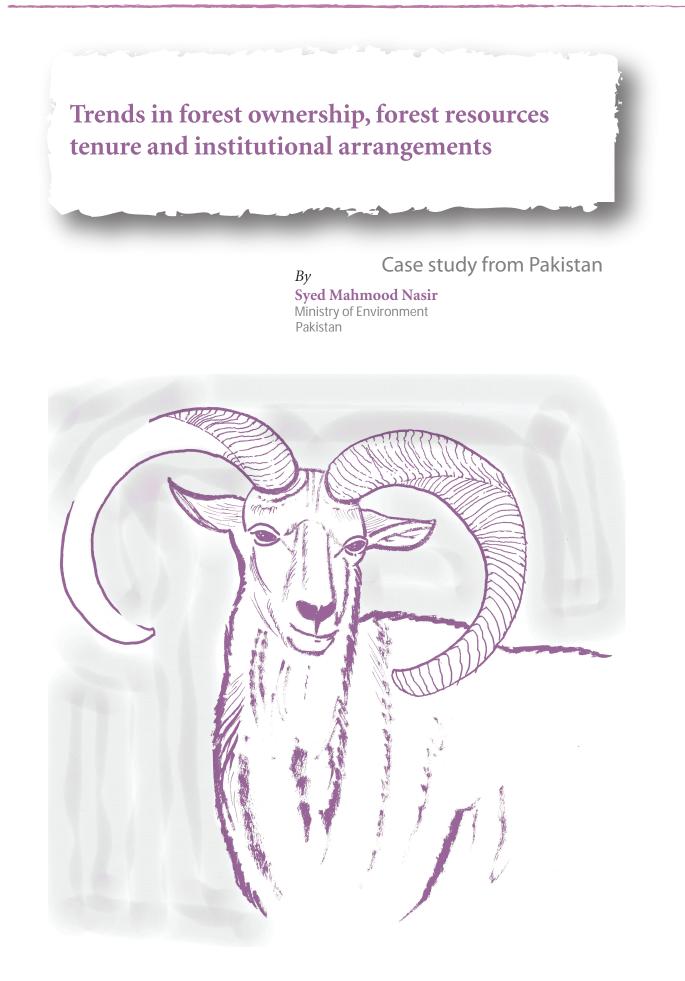
ANNEX 4: TREND IN EXPANSION OF COMMUNITY FORESTRY

Source: Department of Forests, 2005.

Year	No. of groups	Beneficiary households (No.)	Leased area (ha)	Area per household (ha)
1993	4	29	26	0.90
1994	62	451	391	0.87
1995	83	553	416	0.75
1996	166	1 178	647	0.55
1997	254	1 716	1 079	0.63
1998	408	2 694	1 673	0.62
1999	328	2 208	1 245	0.56
2000	249	1 766	1 045	0.59
2001	108	892	522	0.59
2002	44	330	142	0.43
2003	250	1 906	851	0.45
2004	165	1 399	470	0.34
Total	2 121	15 122	8 507	0.56

ANNEX 5: TREND IN EXPANSION OF LEASEHOLD FORESTRY

Source: Department of Forests, 2005.



Summary

With less than 2.5 percent of its total land area under natural and planted forests, Pakistan is a forest-deficit country, and the gap between supply and demand for forest goods and services is increasing with the rising population. At present, the population is 150 million people, but this is projected to increase to 210 million by 2025. Forestry receives less importance in national priorities, so many issues that need the attention of decision-makers at the highest level remain unresolved. The issue of land tenure arrangements and ownership rights has not been addressed in any of the policy statements or reform processes of the past 20 years. The basis of all rights to forest resources remains the settlement reports prepared by the United Kingdom colonial government in the last quarter of the nineteenth century. All forest management plans are based on these.

The land reforms that Pakistan has witnessed over the past 50 years have been limited to agricultural lands and lands termed waste and grazing land; forest land has not been subject to land reform. Title to forest land is determined by land revenue records and the records of provincial forest departments. Historically, forest land was available for everybody to use, and the available records show that tenure arrangements were made in terms of access to grazing, tillage and water. The Mughal kings maintained some areas as royal hunting grounds, but the first attempts at forest conservation, settlement of rights and demarcation were made by the colonial rulers between the mid-nineteenth and mid-twentieth centuries.

The large area covered by this case study made it impossible to categorize tenure arrangements, because of the great diversity in tenure systems, customary and formal laws and administrative arrangements among Pakistan's provinces. The relationships between customary law and formal law also vary from province to province. According to the Federal Constitution, forestry is a provincial subject.

Analysis of the present complex tenure system is difficult owing to a lack of reliable data on forest resources, and scant data on laws and customs further complicate an understanding of the complexities involved. However, there appears to be a pattern in the evolution of forestry legislation and management, from simple unowned land to tribal ownership, leading on to State intervention as the need for conservation started to be felt. State institutions kept local people's needs in mind, by leaving large chunks of land as either common grazing ground, or Guzara forests in the provinces of Punjab and North West Frontier Province (NWFP). Reserve forests with limited rights were meant for conservation and were exclusively State lands, while protected forests on State or private land aimed to restrict specific activities, for which permission had to be obtained. Protection measures included declaring certain trees royal or banning the harvest of certain herbs; activities that were not banned could be carried out unhindered in protected forests.

Other lands transferred to the forest departments were termed unclassed forests, and were protected by the departments without any legal support from forest laws. In the Northern Areas, there were two systems that determined local people's access rights to forests: the tribal ownership system, which was governed by customary laws; and the fief system of rulers, called Mirs. With the accession of the Northern Areas to Pakistan, both of these traditional systems broke down and were replaced by a far more complex system, which is barely understood by those it is supposed to serve. In the meantime, the apparently never-ending acrimony over forest protection in State-owned forest between forest departments and local communities continues. In privately owned forests, there is an increasing trend of deforestation, despite the stringent rules and regulations.

Forest working plans and land settlement reports form the basis of all management in both natural and planted forests, and the rights admitted in forest land settlements are reflected in the land revenue records (locally called *shart Wajib ul- Arz*). Hilly forests had been subject to management since the late nineteenth century; shelterbelts and selection systems were adopted with the objective of producing sustainable yields of commercial wood. Such systems were interrupted in 1985 with the imposition of a ban on the harvesting of green trees in the Punjab, which was extended to the whole country after the devastating flood in 1992.

Many forest management interventions have been made, such as the establishment of forest cooperative societies and the Forest Development Corporation for better management and the sharing of benefits with communities, but most have failed. Provincial and federal governments, donors and non-governmental organizations (NGOs) have taken a keen interest in NWFP over the last 20 years. NWFP has taken a lead by revising the 1927 Forest Act that *inter alia* provides legal coverage to joint forest management (JFM). If successful, this experience could be emulated in other provinces.

Recognizing the links between poverty reduction and forests as envisioned in the Millennium Development Goals (MDGs), the Government of Pakistan increased the development budget for afforestation for the years 2005 and 2006.

With more awareness of forest-related traditional knowledge, access and benefit sharing, and local/indigenous communities' rights and obligations, there is hope that legislation will be made to adapt to Pakistan's obligations under the Convention on Biological Diversity. There is a trend for more and more NGOs to become involved in forest policy issues and reporting on deforestation. Many medium-sized and small projects have been initiated – most with donor assistance – for forestry-related issues, but few projects deal directly with forest land tenure. Moreover no comprehensive study of forest land tenure and trends in forest ownership has been conducted. This case study is the first attempt in this direction and should pave the way for further studies.

Prior to any effective reform of forest land tenure, a thorough analysis of the complex existing systems is needed. The following needs for the future have been identified: forest land tenure reform; adaptation of policies and legislation and of planning and monitoring systems; identification of land tenure's role in farm forestry; and recognition of customary laws, traditional knowledge and the rights and obligations of local/indigenous communities.

Adapting provincial forest policies to fulfil national and international obligations for forest conservation, sustainable use and equitable benefit sharing would be a major leap towards sustainability. This could be achieved by establishing regular fora for policy analysis at the highest level. Although land reforms have been made in Pakistan – with varying degrees of socio-political impact – there has never been an attempt to address forest land tenure reform, and such an effort would be a step in the right direction. One of the main reasons for the failure of interventions in the forestry sector at the community level is the lack of cooperation from local communities, most of which are against the State functionaries of forest departments. This conflict is the result of forest departments' lack of sensitivity to the customary laws that communities have been practising and perfecting over generations of living with nature. Recognition of customary law, traditional knowledge and the vital role of indigenous communities could help forest dwelling and forest-dependent communities to develop a sense of ownership in and around the forest. Although farm forestry interventions have met with success in Pakistan, the massive potential of farm forestry has not been fully harnessed; a critical analysis of agricultural land tenure as it affects farm forestry needs to be made because most farmland is cultivated by tenants who do not favour tree planting. Tenants with tenure of only two or three years prefer not to sacrifice today's yield for the future.

Owing to non-existent or weak monitoring systems there is a shortage of reliable data on forest areas, tenure arrangements and trends of deforestation in Pakistan. A regular unbiased monitoring system would be of major assistance in improving forest cover, providing livelihoods to communities and equitably sharing the benefits from forestry resources.

Introduction

It is widely recognized that the forestry sector carries many hopes and promises for achieving the Millennium Development Goals (MDGs) for poverty reduction in the twenty-first century. Linking forest management with poverty reduction is one of the major challenges faced by the forestry sector in developing countries in general, and Pakistan in particular. Forests have the potential to reduce poverty not only for forest dwelling communities, but also for other low-income rural and urban communities. Pakistan is committed to achieving MDG 7 by increasing the forest cover on State-owned and private forest and farmland from the 1992 level of 4.8 percent to 6 percent by 2015. Reliable data for planning are essential to achieving this target, but reliable data on forest area, boundaries and land tenure are scarce.

Pakistan takes up the challenge of reducing poverty through the forestry sector with much previous experience in afforestation projects, management planning and farm forestry over recent decades. Community participation in forest resource management has been widely recognized in forest policy statements and in the Forestry Sector Master Plan (FSMP) of 1992. Over the past 20 years, the concept of community participation in natural resource management has been practised and tested through various projects and institutional arrangements of both the government and non-governmental organizations (NGOs) at different levels and in all provinces of Pakistan. However, these interventions do not appear to have achieved all of their desired results. Available

studies show an overall trend of decreasing forest cover in Pakistan, despite heavy investments in projects. Detailed surveys and assessments of forest resources were conducted in 2003/2004 by the Pakistan Forest Institute Peshawar. The total area under forest cover reduced from 3.59 million to 3.32 million ha between 1992 and 2001 – an average rate of 27 000 ha per annum. In the post-FSMP period, forest areas in Punjab and Azad Jammu and Kashmir (AJK) have increased, whereas in Sindh and Balochistan they have decreased. In North West Frontier Province (NWFP) there was no change. The highest rate of deforestation was in Northern Areas, where forest cover declined by more than half in ten years.

Literature studies and experiences from other countries show that a major shortcoming of past interventions was their lack of sensitivity to issues related to forest land tenure. Understanding the impact of tenure is essential to the formulation of effective policies and the promotion of forest management. With the recent trends of privatization, devolution of powers to the district level and community involvement in forest management, the issues related to forest land tenure are becoming increasingly complex as more and more stakeholders are involved. Forest land tenure is a broad concept that includes ownership, tenancy and other arrangements for the use of forests; for the purposes of this case study, forest land tenure is a combination of legal and customary ownership and other rights, arrangements and conditions for forest management and usage.

The limited availability of reliable data on forest resources is a major issue that affects the planning of appropriate actions to achieve these targets. After 1947, the government took over large chunks of land, and uncultivable land was transferred to the provincial forest departments through the Federal Land Commission. These transfers of land are reversible because no tenure arrangements are defined, and their main purpose appears to be safeguarding the land from encroachment. Policies regarding tenure arrangements for forests could help achieve the MDGs, but this issue has attracted little attention so far. There is a lot of literature on land tenure for agricultural lands, but little on tenure in forest areas.

In response to growing concern about the depletion of forest resources, some steps were taken in the late nineteenth century to conserve, demarcate and settle forests. During these settlements, large chunks of land were left to satisfy the needs of local populations, while others were declared State forests for conservation and scientific management for sustained timber yields. This system worked well for almost a century, but in the absence of management and inputs the communal forests have deteriorated drastically. The condition of State forests is much better, because of the forest departments' protection, restocking and scientific management efforts. Forest departments do not prepare scientific management plans for the regeneration of communal forests, except for regulating the harvesting of timber; in their records, the departments refer to community rights as a "burden" on forest.

This study analyses forest ownership, rights and institutional arrangements in order to assist planners in achieving the MDGs by linking the implications of forest resource ownership and management to poverty alleviation. The main problem encountered was the lack of reliable data, especially on forest ownership and tenure.

For example, the Forest Department in Abbotabad Circle, NWFP does not keep ownership records for communal (or Guzara, as it is known locally) and private forests as these can be sold, so their ownership keeps changing. The ownership of communal forests is recorded in the revenue record maintained by the Revenue Department, and can be collective or joint. When a parcel of forest is sold, the permission of all the owners is necessary, as it is when a single owner wants to sell his/her individual rights in a joint-ownership parcel. Sales can be either with or without rights in the forests, and individuals with rights in communal forest can sell those rights to other individuals. Private forest owners can sell the ownership of forest land with or without rights to grazing, the proceeds of commercial harvesting, wood collection, etc.

In the hill district of Rawalpindi in Punjab province, on the other hand, Guzara forest rights cannot be sold because the Forest Act of 1927 provides that rights can be transferred only through inheritance. An owner of a Guzara forest can therefore sell his/her share of ownership (with the consent of other co-owners), but not the associated rights. Therefore, the sale and purchase of Guzara is rare. The Revenue Department in this region keep records of ownership and right holdings while the forest department issues wood cutting permits to right holders and transit permits for the movement of wood that has been legally extracted from private or communal forests.

It is difficult to gather information in the Northern Areas because of poor access and the extent of privately owned forest, over which the State has no control other than through banning the movement of timber to markets in the settled areas of other provinces. However, in the presence of such complex tenure arrangements, the ownership of forest can hardly be termed as private. Forest owners often do not participate in the preparation of the management plans that determine the extent of forest to be harvested. They cannot auction their forest, decide who to contract to carry out the harvest, or penalize forest offenders because all of these decisions are made by the forest department. Owners are involved only in determining usages such as grazing, and even then it is the forest department that decides the extent to which these can be carried out. The *de jure* owners of forest therefore become passive spectators to the decisions made by the forest department.

Forestry does not appear on the concurrent or residual list of subjects in the Constitution of Pakistan, making it a provincial subject for which each province makes its own laws. These laws are a legacy of the first forest legislation made in the late nineteenth century. The overall objectives of forestry laws are conserving forest and fulfilling the needs of local communities. Management of private or communal lands in NWFP is carried out through agreement on the sharing of sale proceeds. There have been many experiments in NWFP for better forest governance and reducing the role of the forest department to a minimum through devolution. The latest of these was an experiment with forest cooperative societies in the early 1980s, but this failed and led to further deforestation, forcing the government to reverse the policy. The NWFP Forest Ordinance of 2002 was drafted after years of consultations and reflects many hopes for the improvement of forests, especially jointly managed forests.

There is no single compendium of laws regarding forest landownership rights and tenure arrangements in Pakistan; existing laws on this subject are diverse and complex. Figures on the extent of each category of forest are not reliable, and data collection efforts tend to lead to the creation of new data. The data collected under the 1992 FSMP are the most reliable so far, but they contain very little on forest ownership and tenure. Some of the data in this case study have not been published before, especially those regarding the rights of communities in reserve forests in Punjab and the complex forest management scenario in privately owned forests for the Northern Areas.

Forest settlements form the basis of all rights in forest areas; for areas where no settlement has been made customary law prevails, as is the case for the rights of communities and individuals in the Northern Areas. The Settlement of Jhelum Forest Division was one of the first settlements made in the province of Punjab, and the original settlement report reflects the importance that the colonial government of the time assigned to this task (see Annex 2). The rights admitted in this settlement form the basis of all the rights still exercised.⁴²

During analysis of forest ownership patterns and communal rights for this case study, it was felt that some hitherto neglected areas, such as revival of the seigniorage fee, need careful study and discursive analysis, as they may have the potential to create a system for forest resource ownership in forest dwelling communities. Society needs to know about the steps taken by the Government of NWFP to control the sale and purchase of rights in forests by making right holders aware of what they are selling so that their poverty is not exploited by rights purchasers.

PAKISTAN COUNTRY PROFILE

Pakistan occupies more than 880 000 km² in the South Asian subcontinent. It is bordered by India on the east, China on the northeast and the Islamic Republic of Iran and Afghanistan on the west. It is characterized by significant variations in altitude and topography across its territory. According to the Koppen Geiger classification of climatic zones, which defines zones on the basis of monthly temperature and precipitation data, there are 11 distinct but overlapping climatic zones in Pakistan. Pakistan's diversity also extends to its socio-economic and environmental characteristics, which differ significantly from region to region. Pakistan's Arabian Sea coastline stretches for more than 990 km and consists of two distinct units in terms of physiographic outline and geological characteristics.

⁴² This study had no access to the settlement reports of other provinces/areas.

The country has four provinces – Punjab, NWFP, Sind and Balochistan – and two federally administered territories: the Federally Administered Tribal Areas and the Northern Areas. In addition, the territory of AJK is under the administration of the Government of Pakistan. Each province or territory is divided into administrative districts.

Pakistan has a population of 150 million, which is expected to rise to 210 million by 2025, and is the eighth most populous country in the world. Agriculture contributes about 24 percent of gross domestic product (GDP) and provides employment to 48.4 percent of the workforce (Economic Advisory Wing data for 2003). Forestry provides about 0.8 percent of this. The Pakistan Agriculture Research Council has divided the country into ten agro-ecological zones based on physiographic characters. Almost a third of the country is classified as rangeland, which supports two-thirds of the total sheep and goat population and more than half of its cattle. Millions of herders and pastoralists depend on rangelands for their livelihoods.

The tenure system, facts and figures

For a better understanding of the origins of land tenure arrangements it is important to have an overview of the historical perspective, because most of the present system is a continuation of the past system, whose history stretches back for more than a century. Annex 1 provides such an overview. The provisions of the Forest Act of 1927 (including the recent NWFP Act 2002) and the Land Revenue Act of 1867 (amended as the Provincial Land Tenure Act of 1967) remain the main legal instruments that determine the legal aspects of landownership, including of forest land. The following are the main legal categories of forests based on ownership and rights.

State-owned forests:

- reserve forests with limited community rights;
- reserve forests with no community rights, including the demarcated forests of AJK.

Protected forests :

- private or community forests with restrictions on usage and harvesting limits imposed by the forest departments in hilly areas of Punjab, NWFP and AJK;
- State lands declared as protected, with access and usage rights for communities (except for banned activities);
- Guzara or community-owned forest managed by forest departments;
- private forest with exclusive ownership managed and harvested by forest departments in hilly areas, and fully managed by owners in the plains;
- forest plantations, including roadside and canal sides, owned and managed by the government;
- privately owned forest plantations, including farm forests, shelter belts and blocks, managed and harvested by owners; movements of harvested timber regulated by the forest department in some areas.

An overview of the evolution of forest ownership patterns in Pakistan shows that the pattern followed was similar to that of other systems in which feudalism persisted. Although the local feudal chiefs were replaced by the United Kingdom colonizers in the eighteenth and nineteenth centuries and by the creation of Pakistan in 1947, it appears that many issues still need to be resolved. Pakistan has a long way to go in adapting its forest land tenure systems and ownership patterns, with the involvement of local communities, forest owners and other beneficiaries at all levels. There have been land reforms for agricultural land, but not for forests.

TENURE SYSTEMS

The land tenure systems prevalent in public, communal and private forests vary somewhat from province to province and across administrative units. The forest settlement reports are the basic documents that determine the extent of ownership and rights to forests in the provinces; an example is given in Annex 2. No forest settlements have been drawn up for Balochistan or the Northern Areas, so neither boundaries nor ownership are clear. In the past, forest settlements sought to balance the needs of local populations with forest conservation. This balance was achieved by setting aside large chunks of forests for the use of communities, especially those adjacent to reserve forests. However, while the State forests were scientifically managed, the communal forests were under increasing pressure from human usage as the population grew. During the course of this study, it was revealed that the revenue record for Ziarat district in Balochistan provides local communities

with the right to clear juniper forest for agricultural purposes. As a result, hardly any cultivable land still has forest cover, and juniper has survived only on poor-quality soils.

Reserve forests leave the local population with no or very few rights, which are limited to satisfying the needs of residents in the settlements/villages surrounded by reserve forests. Such rights include grazing of domestic cattle, collection of fuelwood from fallen trees or brushwood, and rights of water and way. In protected forests, whether State-, community- or privately owned, all activities are allowed except those that are specifically prohibited by special orders. Privately owned forests, especially natural forests in the hills, are subject to a complex ownership and usufruct rights system. *De jure*, private forest is the property of its owner, who can sell and buy forest land with or without rights. However, only the forest department has the right to harvest trees, and the owner is not allowed to cut a single tree for his/her domestic use without the department's permission. There are certain rights to use trees for house construction, or on the death of a family member in Guzara and protected forests in hilly districts of Punjab and NWFP.

There is a general sense that the stakeholders and users of resources are seldom involved in public and communal forests and rangelands. The existing legislation, however, includes many legal provisions that cater to the needs of local communities in the chapters on village forests in the Act of 1927. During the initial settlements in the early 1900s, elaborate procedures were followed to admit rights prior to declaring a forest a reserve and to ensure the impartiality of forest settlements by balancing the opposing views of conservators and forest settlement officers.

The management and protection of forests was handed over to provincial forest departments with the aim of protecting the rapidly depleting forest cover and wildlife habitat while providing sustainable yields of timber and fuelwood for the State and the economy. Large chunks of dry lands were handed over to the forest departments for management as grazing land or as a result of land reforms/settlements. Under the Forest Act of 1927, all forest and range areas were classified as reserved, protected or unclassed on the basis of the rights of communities. Some rights were purchased, bartered or otherwise settled at the time of forest settlement when the reserve and protected forests were declared. Unclassed forests were notified under the act pending their final settlement as reserve or protected forest; the act is not applicable to unclassed forests, so provisions in the Land Revenue Act of 1967 and the Provincial Laws Act provide legal instruments for forest protection and the prosecution of forest offences on such lands. Forest laws and regulations notified by the provincial governments under the act of 1927 include provisions for the regulation and private/Guzara forests.

The following sections provide more detailed descriptions and discussions of tenure arrangements in each province.

PUNJAB

Forests and rangelands in the Punjab that are in the public sector are managed under the Forest Act of 1927. The rights and concessions in reserve forests that were admitted for the local population at the time of settlement are rights of way and water, collection of fuelwood for domestic use, and grazing rights, which are granted free or on payment of half or full grazing fees. These rights are non-transferable and cannot be sold; the only method of transferring rights is through inheritance. Rights in reserved forests are rare in high hill forests, but frequent in scrub forests. Grazing is further regulated by grazing control forms in the working plans for Rawalpindi, Jhelum, Chakwal, Attock, Pail and Sodhi ranges within Jauharabad Forest Division. All newly afforestated areas are closed for ten years, and in some forests grazing is closed for three months to allow the trees to rest during the growing period. Some scrub forest areas within reserve forests are managed purely as rangelands by a separate Range Management Circle. The grazing fees charged by the Punjab Forest Department (PFD) are fixed by the government. Protected forests, including blocks of natural and artificial plantations and roadside and canal side plantations, allow rights and concessions for timber, grazing, grass cutting, lopping and the collection of dry fuelwood. Unclassed forests are areas that have been transferred to PFD pending final legal classification. Resumed lands have been given to PFD as a result of land reforms or evacuee property and have not yet been classified.

Section 38 forests are privately owned lands that have been voluntarily and temporarily put under the control of PFD for the conservation and preservation of soil and vegetation. These are notified under section 38 of the 1927 Forest Act on the written request of the individual owner or of a two-thirds majority of the owners in cases of joint property, for periods of 25 or 30 years. Owing to the peculiar nature of Guzara forests and the rangelands of Cholistan, the dynamics of their stakeholders and legal positions are discussed in more detail in the following sections.

Guzara forests in Punjab

Guzara means subsistence, and Malkiat means privately owned. Guzara forests are located in Tehsils Murree, Kotli Satian and Kahuta in Rawalpindi district and are managed by a divisional forest officer (DFO) based in Rawalpindi. Forests on communal land that has not been divided and is meant for collective use to satisfy the requirements of all the village community are known as Guzara forests. Forests on communal land that has been taken over by its owner(s) for personal use are known as Malkiat forests. Table 1 provides the areas of land under Guzara and Malkiat forest and Table 2 the numbers of villages with Guzara forest. The area of a Guzara forest in each village varies from 4 to 5 609 acres (1.6 to 2 271.6 ha).

TABLE 1 Areas of Guzara and Malkiat forest

Range	Guzara forest	Malkiat forest	Total	
Kahuta	27 529 acres	29 090 acres	56 619 acres	
Murree	20 502 acres	13 836 acres	34 338 acres	
Karor	20 544 acres	10 794 acres	31 388 acres	
Lehtrar	31 834 acres	14 488 acres	46 322 acres	
Total	100 409 acres	68 208 acres	168 617 acres	

1 acre = 0.405 ha.

TABLE 2 Numbers of villages with Guzara forest

Tehsil	No. of villages
Kahuta	79
Murree	72
Kotli Sattian	45
Total	196

The Guzara Forest Division is self-financed, and the records show no government investment in forestry operations since its creation. Timber from dead, dry, windfall and uprooted trees in Guzara forests is put to public auction, and the revenue generated is divided, with 70 percent going to the village Guzara fund, 25 percent to the central Guzara fund, and 5 percent to the staff welfare fund.

Dead, dry and windfall timber from Malkiat forests is sold at the request of its owner, who must obtain approval from the Guzara Forest Chairperson. The revenue is then divided, with 70 percent to the landowner, 12.5 percent to the village Guzara fund, 12.5 percent to the central Guzara fund, and 5 percent to the staff welfare fund.

The right of Haqdari

The inhabitants of Murree, Kahuta and Kotli Satian are entitled to three chir pine trees from Guzara/Malkiat forests for house construction every three years. Owing to a ban on green felling, permission to cut only dry fallen pine trees is granted by the Guzara Forest Division, after verifying the claimant's rights with the revenue staff.

For the last 20 years, efforts have been made to prepare a working plan for Guzara forests but owing to unclear boundaries and the local communities' fear of uncovering encroachments, no demarcation can be carried out, so no working plan can be prepared.

NWFP

All previous forest enactments, especially the Forest Act of 1927, have been consolidated under the NWFP Forest Ordinance of 2002, which provides for the management of reserve, protected, Guzara and all types of private forest in the province. The NWFP Management of Protected Forests Rules of 1975 regulate the rights of communities in protected forests by providing free grants of trees in all the districts except for Swat and Kalam. The rates charged for trees in these districts are given in Table 3.

TABLE 3 Rates for trees in Swat and Kalam

Area	Rate per tree (Rupees)			
	Deodar	Kail	Fir/spruce	Chir
Madyan, Behrain, Fatehpur and Matta Tehsils	700	500	400	-
Khabbal, Babuzai and Charbagh	600	400	300	-
Alpuri, Kanam Lilowni Puran and Chakesar Tahsisl	600	400	300	
Buner Sub-Division	600	400	350	

A system of quotas for right holders is maintained in the revenue records, and the law provides for grants of trees to local people, subject to the verification and recommendation of the tribal communal system. Commercial sales are allowed subject to approved working plans and payment of 15 percent of sale proceeds to the local right holders through the appropriate district officer revenue. The schedule of tree quotas for the domestic needs of local people in Swat district is given in Annex 3.

Ownership and tenure are generally well defined in NWFP, except for in Federally Administered Tribal Areas. Reserve forests owned by government and managed by NWFP Forest Department are situated in Hazara (Haripur), Galliat (Abbotabad), Kaghan, Siran and Agor Tanawal (Manshera district). All of these forests were demarcated and set aside under permanent land settlements in 1872 and 1905, and their total area is 100 000 ha. Under the NWFP Forest Ordinance of 2002, rights of pasturage or to forest produce can be admitted by the Forest Settlement Board, but no right can be acquired over reserve forests except by succession, and no right can be alienated by mortgage, grant, lease, sale or otherwise without the sanction of the government. In practice, however, studies indicate that the sale and purchase of rights has been one of the major causes of deforestation in NWFP (Javed and Fawad, 1998)

The following are prohibited in reserve forests: all acts of encroachment, trespassing, grazing and browsing except where rights are admitted; cutting of trees; and quarrying of stones, etc. Violations are punishable with imprisonment for up to two years, fines of up to 50 000 rupees (Rs), or both. If the offender is a woman, the magistrate, for reasons to be recorded in writing, may permit an agent to appear on her behalf. If a child under 16 years of age is in charge of cattle that trespass into the reserved forest, the owner of the cattle is deemed the offender. The provincial government has the power to declare a forest no longer reserved, but has exercised this power rarely.

Village forest

A unique feature of the NWFP Forest Ordinance of 2002 is the power of the government to assign any reserve forest to any community as village forest; such assignments are reversible. The government may make rules to regulate the management of village forests, prescribe conditions for the provision of timber and other forest products to the village community, and prescribe joint responsibility and liability for the contravention of provisions of the rules. So far, no rules for village forests have been notified by the Government of NWFP, nor have there been any requests for reserved forests to be declared village forest.

Protected forests in NWFP were inherited from the princely states of Chitral, Dir and Swat at the time of accession to the Government of Pakistan in 1969. Protected forests are State property, and right holders are subject to the payment of 60 to 80 percent royalties on timber sales. Originally the royalty was 15 percent. These forests are situated in the districts of Chitral, Dir, Swat and Kohistan to the right of the River Indus. The total area of protected forests recorded by NWFP Forest

Department is 590 000 ha. The NWFP Forest Ordinance of 2002 gives the government powers to declare as protected forest any forest that has not been declared reserve forest, as long as the rights of communities are settled. When emerging conservation issues warrant the immediate closure of a forest, the government may declare that forest protected without abridging or affecting any of the existing rights of individuals or communities. The government may also reserve certain trees or close forests for periods of up to 30 years, but the law provides that when a portion of forest is closed, the remainder of the forest left open must be sufficiently large and accessible for communities and individuals to exercise any rights suspended in the closed portion. The activities prohibited in protected forests are similar to those prohibited in reserve forests, as are the penalties for violations.

Local communities' rights to shares from the sale proceeds of timber harvesting have been a subject of intensive study. Studies indicate that there is a group of timber traders, often referred as the "timber mafia", who purchase the rights of poor communities many years before working plans for timber harvesting are prepared (Khan *et al.*, 2001). Under public pressure against the selling and purchasing of rights, the NWFP government passed legislation in 2001 that makes the presence of the original right holder necessary when royalties are distributed. This new initiative has not been tested, however, as no commercial harvesting has been carried out since imposition of the national ban in 1992.

Guzara forest

According to the NWFP Forest Ordinance of 2002, Guzara is the protected village wasteland that was set aside at the time of settlement to meet the needs of landowners and right holders in areas comprising the districts of Haripur, Abbotabad, Mansehra, Kohistan and Batagram. Tenure arrangements for Guzara forests in NWFP are somewhat different from those in the Punjab. The main differences are that there is no owners' representative body equivalent to the Punjab Guzara Advisory Committee and that all deodar (*Cedrus deodara*) growing in Guzara in the Kaghan area, whether on government or private land, is declared government property. For deodar trees on private land, the landowner is paid half the price of any timber sold, after deduction of NWFP Forest Department's costs for extraction, taxes and management.

A Guzara may be individually owned (Malkiat) or jointly owned by families and communities (Shamilat). According to one survey (Rafique, 1990), 81 percent of Guzara is owned by 12.3 percent of the households in the area, with each household owing an average of 196 acres (80 ha). Guzara may be bought and sold, but the sale of community Guzara is not common. The legal definition of Guzara implies that the trees growing or grown on it are subject to government control and regulation, regardless of who owns them. The complex pattern of Guzara ownership, rights and control has several management and policy implications for any programme seeking to improve forest management and poverty alleviation. The following is a brief outline of the issues involved in Guzara ownership (see also Annex 4).

Usufruct rights in Guzara

Guzara lands are shared commonly or divided as forest and/or pasturelands and owned and utilized by the village landowners. They are not open to all villagers for fuelwood and fodder collection; even the grazing of animals is restricted in some villages. Tree felling for timber in Guzara forests is controlled by NWFP Forest Department. Owners can cut from one to three trees after obtaining a formal permit from the DFO, but tenants and the landless do not have any right to cut timber.

Guzara forest management by NWFP Forest Department

Until the ban on commercial harvesting of 1992 stopped all exploitation, Guzara forests were directly managed by the forest department through working plans. These contain a wealth of information on social and biophysical aspects and the history of past management.

Rights in Guzara forests

Until the first regular land settlement of 1872, there was no record of rights to Guzara forests. The settlement recognized that arable lands in the possession of the people were their property, but treated forest land differently. Portions of forest in villages were set aside as Guzara for meeting the needs of local people, while the remainder was constituted into State-owned reserved forests. During the course of settlement, the people's customary uses of forest were ascertained from the village elders, recorded in the village record of rights and admitted as rights to the forests. These rights survived the two subsequent land settlements of 1904 and 1946.

Rights in a Guzara forests are inherited, along with property in the village concerned. The descendents of the people who were admitted as landowners in the first land settlement enjoy the full rights that go with the property, including rights to the Guzara forests. Anybody acquiring property in the village by means other than succession may or may not be entitled to exercise rights to the Guzara forest, depending on whether the property was acquired with or without such rights.

People acquiring only land or only Guzara rights in a village may be entitled to exercise only some of the rights to the Guzara forest. For example, a person who purchases rights in village Guzara (without landholding) is not entitled to free grants of trees, while certain privileges such as the utilization of dry and fallen wood may be available even to non-right holders. Among the most important rights to Guzara forests are seigniorage fees, timber for domestic use, royalties from sale proceeds, collection of dry, brush and green wood, use of wood for charcoal and kilns, lopping of trees for fuelwood and fodder, and grazing of animals. Exercise of these rights is governed by the Hazara Forest Act of 1936, the Guzara Forest Rules of 1950 and village records of rights.

Seignorage fee: This is a reciprocal right enjoyed by the people for State-owned reserve forests and by the government for privately owned Guzara forests. The fee is payable on the revenue earned from the sale of harvested trees; the rates to be paid are fixed by the government. Table 4 gives the most recent rates.

	Product	Botanical name	Fee per green tree (Rs)			
			At least 24 inches diameter at breast height	16–23 inches diameter at breast height	Per dry tree	
1	Deodar	Cedrus deodara	50.00	25.00	One-quarter of the rates for green trees	
2	Blue pine (Biar)	Pinus wallichiana	40.00	20.00		
3	Silver fir (Paludar)	Abies pindrow	30.00	15.00		
4	Chir	Pinus roxburghii	30.00	15.00		
5	Walnut (Akhrot)	Juglans regia	6.00	3.00		
6	Ash (Sum)	Fraxinus floribunda	10.00	5.00		
7	Spruce	Picea smithiana	30.00	15.00		

TABLE 4 Schedule of seignorage fees (2002)

l inch = 25.4 mm.

The fee was first enforced in 1873, long before enactment of the Hazara Forest Act of 1936, and has since been applicable at uniform rates everywhere. The law requires the rates to be revised every ten years, but the rates fixed in 1912 were not revised until the NWFP Forest Ordinance of 2002. During key informant interviews for this case study, some NWFP forest officers expressed the opinion that reviving the seigniorage fee would not contribute to poverty alleviation because it is reciprocal, i.e., NWFP Forest Department charges fees on private sales while paying fees on sales from State forests. In recent years, the payment of seigniorage fees to Guzara owners has not been regular owing to oversight and the owners' lack of interest. Some of the fees that should be paid to the people from the sale proceeds of reserved forests have ended up in the public exchequer, and even when NWFP Forest Department sends the fees to be paid to the people to the Deputy Commissioner, they often remain undisbursed.

Trees for domestic use: The right to free grants of trees is available to people who acquired their rights in the Guzara forest through succession, and – in some cases – to those who purchased their Guzara rights along with a landholding in the village. The number of trees granted is determined by the village record of rights. Resident right holders have first priority, but each family can receive only one grant every three years. Non-resident right holders are allowed a grant once every ten years, but only if there are excess trees after residents have received their grants. Gifts of trees are allowed only to charitable institutions and for community purposes, and can only be made with the agreement of right holders and owners when there are excess trees after right holders have received their grants.

Royalties from commercial harvesting in Guzara forests: The Guzara Forest Rules of 1950 obligate NWFP Forest Department to manage Guzara forests with the same technical considerations as for reserve forests, including preparing working plans. Such plans assess the anticipated needs of right holders and prescribe the volume of timber available for commercial harvesting each year. Revenues from Guzara forests are shared between the people, who receive 80 percent, and NWFP Forest Department, which receives 20 percent as Guzara management charges. On receipt of the sale proceeds of wood, the forest department deducts its 20 percent share and sends the remainder to the Executive District Officer Revenue for distribution among the owners according to the shares determined in the revenue records. The volumes removed from different landowners and the corresponding revenues collected are indicated by the DFO, who records the landholding numbers of every tree marked for harvesting through the village revenue official.

All the right holders in a Guzara are entitled to free and unrestricted use of dry wood, whether it is standing, fallen or brush. Non-right holders may also use dry wood free as long as the right holders and NWFP Forest Department do not object. Resident right holders and non-right holders specifically authorized by NWFP Forest Department may collect dry wood for sale, but non-right holders need to obtain a licence for this, on payment of a fee. The sale of dry wood by right holders is permitted in head loads within or outside the village, provided that the majority of right holders do not object. Collection of any dry or green wood from a forest that is being harvested is prohibited. Right holders, and non-right holders if the former do not object, may use - free and without restriction - the bark of felled or fallen trees and green wood to make agricultural implements and for burial purposes. Collection of medicinal herbs from Guzara forests, except with the permission of NWFP Forest Department, is prohibited. Revenues from the collection of medicinal herbs are shared between the Guzara owners and the forest department at a ratio of 80:20. Rights to Guzara forests do not clearly include the rights to lop trees for fuelwood and fodder, to cut grass, or to graze cattle. The extent to which non-owners may exercise these rights is determined during land settlement, and recorded in the village record of rights. Forest working plans for the area suggest that people have full rights for animal grazing and grass cutting.

Joint forest management

NWFP is Pakistan's leading province for joint forest management (JFM) in terms of both joint forest management committees (JFMCs) placed and legislation. The Forest Ordinance of 2002 gives the DFO revocable powers to designate any reserve forest, protected forest or Guzara to a JFMC, whose functions are to protect, harvest and manage the forest. Under amendments made in 2001 to the Hazara Management of Wastelands Rules of 1950, a Guzara JFMC can be registered on the request of more than 50 percent of the Guzara owners, as long as their total holdings account for more than two-thirds of the Guzara area. JFMCs have 15 elected members: seven from among the owners; three from among the non-owner beneficiaries; one from a local NGO; and two as elected councillors. The DFO also nominates two NWFP Forest Department staff members to the JFMC.

Each JFMC approves its own bylaws, carries out timber harvesting under written agreement from the forest department, sells the timber and distributes the net income to the owners. JFMCs also reforest and plant on farmland, at the request of owners. The JFMC collects departmental charges at prescribed rates from the auction of timber and deposits these in the Guzara forest development fund for afforestation and reforestation activities.

Annex 5 lists the substantial number of JFMCs in Hazara Forest Circle; these will become active when the 1992 ban on commercial harvesting of forests is lifted. An experiment with JFMCs has been initiated in two villages in Hazara Forest Circle: Methal, in Panjul Reserve Forest, Siran forest division; and Fateh Bandi, in Doga Protected Forest, Agror Tanawal forest division. Villagers are already cooperating with the JFMCs, but the litmus test of the system will be when the JFMCs can take up commercial harvesting. There is concern that a lack of capital for harvesting will force the JFMCs to rely on the old harvesting contractors.

SINDH

According to the latest data on landownership in Sindh, there are 1.1 million private farms covering 5.67 million ha of a total area of 14.01 million ha. Only 2 percent of these farms have holdings of 20 ha or more, 22 percent are from 5 to 20 ha, and 42 percent are less than 5 ha (Govrnment of Sindh, 2000). Regarding tenure systems, the land of 62 percent of owners, accounting for 50 percent of the

total area, is cultivated by tenants, 8 percent is cultivated by tenants and owners jointly, and 30 percent by the owners themselves. The usual tenancy arrangements involve the equal sharing of inputs and outputs.

The forests of Sindh were scientifically managed during the colonial era for the production of considerable quantities of wood for the Indus steam flotilla. In 1843, game reserves became the nucleus of forest management activities, resulting in well-defined and demarcated forest areas. In 1871, the first conservator of forests initiated scientific management on 2 500 km² of forest; plans drawn up in 1877/1878 had the main objective of providing wood for railway fuel and sleepers. During the same period, 24 529 ha of riverine forests were very well maintained.

In April 1936, Sindh was declared an independent province, separate from the Bombay Presidency. The completion of the Lloyd canal system in 1930 had made sufficient water available for the establishment of irrigated plantations. In 1947, Sindh Forest Department was managing 269 511 ha of reserve and 24 369 ha of protected (mainly riverine) forests under the Forest Act of 1927. In 1954, the vast mangrove forests at the mouth of the river Indus were recognized as a vital and unique ecosystem, and this 364 000 ha area was declared protected forest in 1958, as was 457 000 ha of rangeland in Registan and Kohistan. Mangrove forests provide an excellent breeding ground for fish and prawn, which are important high-earning export items.

In the private sector, plantations of *Acacia nilotica* are a useful source of pit props and fuelwood. They have the additional benefits of reclaiming saline soils and providing additional income to farmers.

BALOCHISTAN

The forests and rangelands of Balochistan in the public sector are generally managed as State forests under the Pakistani Balochistan Forest Regulation of 1890. This was amended by the Balochistan Forest Regulation Act of 1974, which bans the cutting, removal and sale of juniper wood, and the felling, girdling, lopping, burning and bark stripping of juniper trees for timber or fuelwood. Such offences are punishable by up to a year in prison, a fine of up to RS500, or both. Public forests and rangelands are administered and protected as State forests under section 3-10 of this regulation. The following are features of the 1890 regulation and other legal instruments that affect land tenure arrangements:

- *State forests:* Under section 3, any woodland, permanent grazing ground or other land that is government property may be declared by notification in the Official Gazette to be State forest. No rights of any description adverse to the government can be acquired in or over State forests by lapse of time or otherwise than under grant or contract in writing made by or on behalf of government. Acts such as setting fires, felling, girdling, tapping, quarrying or clearing for cultivation or other purposes are prohibited, except with permission of the government or a forest officer authorized by the government. Offences are punishable with fines.
- *Reserved trees:* The government may declare any trees or any specified class of trees standing on any land at the disposal of the government to be reserved trees from a date to be fixed by notification. The government may vary or cancel any such notification. Felling, girdling, marking, lopping or injuring such trees by fire or otherwise are prohibited and punishable with fines.
- *Forest produce in transit:* Under sections 13, 14 and 15 to 17 of the 1890 regulation, the government may establish a forest station within or outside any State forest for the examination of timber and other forest produce and for the collection of dues payable in respect of the same. Offences are punishable with up to six months in prison, fines of up to RS500, or both.

Data on tenure arrangements for forests and rangelands in Balochistan are scarce.

AZAD JAMMU AND KASHMIR

In AJK, the forests and rangelands in the public sector are managed by AJK Forest Department, under the legislative provision of the Jammu and Kashmir Forest Regulation 2 of 1930, as

demarcated forests and undemarcated forests. Demarcated forests are forest and wastelands whose boundaries have already been demarcated by means of stone or masonry pillars or other conspicuous marking, or that have been declared demarcated under section 3 of the 1930 Regulation. There are two main differences between demarcated forests and reserve forest under the Forest Act of 1927: demarcated forests can by put under the control and management of any department or local authority and not just the forest department; and, in demarcated forests, all rights, concessions and activities can be exercised or carried out with the written permission of the forest officer. In cases of the wilful or negligent causing of fire or the felling/killing of trees, the Chief Conservator of Forests (CCF) is empowered to suspend rights, concessions or privileges in pastures or forest produce for periods of up to two years.

Undemarcated forests include all forest and wastelands (other than demarcated forests and wastelands or forest under the management and control of the revenue department) that are the property of the government and are not appropriated for any specific purpose. In undemarcated forests, the Government of AJK is vested with powers to declare any class of tree reserved and to prohibit any activities. Infringements are punishable with up to three months in prison, fines of up to RS300, or both. According to the latest reports on forest land tenure, nearly all undemarcated forests have been converted to demarcated forests, and there are practically no undemarcated forests at present.

Rights and concessions in forests

In all State forests, usufruct rights include the obligation to extinguish fires in or near forest and to prevent other forest offences. Failure to do so is punishable as for the offences themselves. Concessions in demarcated forest are granted for domestic and agricultural uses to landowners and tenant farmers living within 3 miles (4.8 km) of the forest boundary. Such concessions cannot be sold or bartered and are made only if the forest is silviculturally capable of meeting the demands. Concessions granted include grazing, grass cutting and timber collection – excluding Deodar wood – for house repairs. Revenue and settlement departments can demarcate forests on any land that is not used for cultivation.

Village forests

The government may assign any Khalsa (crown) lands to any village community as village forest, and may make rules governing community members' use of forests, including their duties to protect and improve them.

Buffer zones

When undemarcated forests are demarcated, the Forest Law Manual provides for a buffer zone of 15 to 25 Karam (25 to 42 m) between the forest and cultivated farmland. A buffer zone of 25 m must also be established around royal trees. Buffer zones are meant to protect forests from encroachment, but cases of mismanagement have been reported. A buffer zone can be declared demarcated forest to all intents and purposes if it contains at least 20 trees per hectare. Buffer zones that are required for community use can be notified as village forests or Guzara and brought under some kind of management system. Buffer zones used to be under the control of the Land Revenue Department, but are now under AJK Forest Department. According to the Ministry of Environment (2005), the Revenue Department is still allotting buffer zones to private owners, without documenting them properly.

Closure of forests

Rules allow the CCF to close 25 percent of the area of a range as long as right and concession holders have access to water and passage. Such closures must be notified two months in advance.

Royal reserved trees

The AJK Land Revenue Amendment Act of 1955 declared all trees of deodar (*Cedrus deodara*), chir pine (*Pinus roxburghii*), blue pine (*Pinus wallichiana/Pinus excelsa*), chilghoza pine (*Pinus geradiana*), Himalayan spruce (*Picea morinda*), cypress (*Cupressus torulesa*), pencil cedar (*Juniperus excelsa/macropoda*), chenar (*Platinus orientalis*) and mulberry (*Morus spp.*) State reserved/royal trees. Such trees on any public or private land cannot be harvested without the explicit sanction of the AJK Forest Department.

Private forests

A unique legislative provision in AJK are the rules for private forest under section 2 of the Azad Kashmir Land Revenue Act of 1955. The 1984 Azad Kashmir Rules for Sale and Development of Private Forests define private forests as areas bearing trees that are assessed for land revenue and over which the owner has undisputed right of ownership. According to the rules, the CCF is authorized to sanction the sale of trees on written application from the owner after joint demarcation by high-ranking officers from the revenue and forest departments. Sales are sanctioned only if 50 trees of 24 inches (0.6 m) diameter at breast height are available for selection–improvement, or if 400 trees of smaller diameter are available for thinning–improvement; the owner must undertake in writing to abide by the operations prescribed by AJK Forest Department for the protection and development of private forest. The private forest of owners who infringe these rules is brought under AJK Forest Department management for a period that is fixed by the CCF. The DFO marks trees for felling, and the CCF arranges the extraction and sale. The total sales from private forests cannot exceed 200 000 cubic feet (566 m³) of conifers and 20 000 cubic feet (57 m³) of broad-leaved trees throughout the whole state. In exceptional cases, the CCF may allow owners to carry out the felling themselves, provided they have adequate finances and capability.

The government charges 25 percent of the gross sale proceeds as supervision and development charges, and the balance is paid to the owner. These royalty rates are fixed by the CCF. According to the Ministry of Environment (2005), only 223 ha have been registered as private forests, but this is not reflected in the official forestry statistics of AJK Forest Department. This discrepancy implies that owners do not register their land areas under trees as private forest unless they want to cut the trees. Consequently, data on private forests are not reliable. The rules need to be more participatory, and owners should be given adequate time to register their private forests with AJK Forest Department after verification by the Revenue Department. Owners' working of private forests was suspended in 1978 on the recommendations of a Commission of Enquiry seeking to prevent such malpractices as smuggling and theft. The AJK Sale and Development of Private Forest Rules were revised in 1984 to remove the grey areas. According to these rules, 70 percent of the sale proceeds are paid to the owner, 18 percent are earmarked for forest development, 10 percent go to the AJK government consolidated fund, and 2 percent are AJK Forest Department supervision charges. Any amount saved from the regeneration or reforestation of forest land is paid to the owner.

Distribution of timber to concessionaries

Under the AJK Interim Constitution Act of 1974, the President of AJK promulgated the AJK Protection of Forests and Distribution of Timber Ordinance of 1980 under which a forest committee was constituted for each Union Council. Each forest committee comprises a chairperson, three elected members from the Union Council and one coopted official from AJK Forest Department. The committees are responsible for dealing with all forest offences up to a value of RS100, with powers to direct offenders to pay compensation and damages as laid down in the Forest Regulation of 1930. When the culprit is not traceable, the forest committee may impose collective compensation to be paid by the local community. In cases of forest encroachment, the forest committee ejects encroachers with the help of local revenue, forest and police authorities. Compensation and costs are recovered as arrears of land revenue. The chairperson of the forest committee has the power of a magistrate to summon, issue warrants of arrest to the accused, call witnesses and try cases. The forest committee makes allocations of up to two trees for repair or construction of concession holders' houses. The DFO can sanction allocations of up to two trees free of cost for the reconstruction of houses destroyed in natural disasters or the construction of village mosques, when recommended by the Union Council chairperson. The village Union Council is responsible for providing all possible assistance in tracing forest offenders, effecting closures, impounding cattle, etc.

NORTHERN AREAS

Area statistics, geographical distribution and rights in the forests of the Northern Areas are given in Annex 6. The Northern Areas land tenure system is clear; at the Northern Areas' accession to Pakistan in 1952, the Government of Pakistan admitted all private forest ownership rights in an agreement with the tribes. According to this agreement, the government respects the propriety rights of the tribes and manages private forests in the best interest of their owners and with their consent. From 1953 to 1967, the tribes were free to sell their forest products to contractors, but the sales agreements had to be attested by the assistant political agent. The attested deeds were then passed to the DFO for tree marking. Harvesting was regulated through written contracts that gave Northern Areas Forest Department power to control violations. In 1957, the forest department received RS12 per log as royalty, increasing this to RS 25 per log in 1958, irrespective of species and size.

The Gilgit Private Forests Regulation was enforced in the 1970s, with royalties fixed on the basis of species and volume. Three working schemes and a working plan for the scientific management of forests have since been prepared. However, Northern Areas Forest Department lacks trained staff and technical expertise, so the reliability of the data on which the plans are based is questionable, especially when the area concerned has not been settled and the boundaries have not been demarcated. In addition, rights have not been specified in government records. The Northern Areas Forest Department has prepared maps on the basis of information provided by local tribes and through consultations. The shortage of expertise at Northern Areas Forest Department has led to many civil suits arising from the sale of forest produce, which are still pending in the law courts.

Ownership rights to forests

The forests in Diamir district are unsettled, and ownership has not been properly defined in the official records. In such situations, customary law is applied and all claims of ownership are settled by Northern Areas Forest Department in consultation with the tribes. The Government of Pakistan has accepted the private ownership of forests that extend in total for 30 percent of the Northern Areas' overall area (219 802 ha). The Accession Deed of 1952 lays down that the government should spend 30 percent of the income from forest sales on developing the area, and that the protection and scientific management of forests is the responsibility of the government in consultation with owners. The deed provides for the imposition of restrictions on free grazing in regeneration areas. The Gilgit Private Forests Regulation of 1970 was enacted for the protection and scientific management of forest conservation under rules framed in 1975. The penalties for forest offences stipulated in the Forest Act of 1927 have also been adopted in the Northern Areas.

Rules under the Gilgit Private Forest Regulation of 1970 provide access to forest resources for communities residing in the vicinity of the forest; these rights include the free grant of trees, grazing and the collection of dead/dry trees. Grazing is allowed only in those areas that are not closed for regeneration.

Some tribes, including the Soniwals, Dooms, Kamins, Gujars and Syeds, settled in certain areas do not enjoy ownership rights in forests under customary law and are not entitled to the 50 percent share of royalties from forest lessees, nor to any royalties from the direct sale of trees by owners. The dynamics of Northern Area tribes' acquisition of rights and migration has been a subject of special interest to anthropologists, and many studies have been produced by local and international researchers. In Diamir, Chilas, Darel and Tangir, private or clan owners have 100 percent ownership of prime forests, but are not consulted during the preparation of working plans or the sale of trees (Bilal, Haq and Moore, 2003).

Features of forest management

FARM FORESTRY

In Pakistan, the importance of farm forestry and its roles in providing wood for markets and in poverty alleviation were recognized in the 1970s. Several provinces implemented farm forestry projects with a good degree of success, but the major impetus to farm forestry came with the United States Agency for International Development (USAID) Forestry Planning and Development Project of 1985 to 1994. This project's concept of farmers' nurseries was widely accepted as the model for subsequent projects. As a result of successful farm forestry interventions, farm-grown wood provides 80 percent of the total fuelwood used in Pakistan. The provinces of Punjab and NWFP have established regular forest circles to deal with forestry extension and farm forestry. Trees outside forests are grown on privately owned land and sometimes on communal land.

Ownership rights to trees on private land are well defined; the owner of the land owns the trees. Many private landowners lease their agricultural land to tenants, with well-defined terms and conditions, but the ownership of trees remains with the landowner in all cases. The result is that tenants do not favour growing trees as boundaries and shelterbelts, because they see the trees as competing for water and sunlight with their own agricultural crops. Further studies are needed to identify the role of land tenure arrangements in farm forestry and to devise policies that would promote farm forestry.

FOREST AREA TYPE AND CONDITION

Forests in Pakistan cover 4 224 000 ha, or 4.8 percent of the country's total surveyed area of 87.98 million ha. The percentage coverage of forests varies considerably across provinces and territories. The forest area of AJK accounts for 20.7 percent of the total land area, followed by NWFP, with 16.6 percent forest cover, the Northern Areas, with 9.5 percent, Punjab and Sindh, both with about 2.8 percent, and Balochistan, with 0.7 percent.

Forest vegetation in Pakistan is diverse in structure and composition, owing to variations in climatic and ecological conditions. Latitude ranges from 24 to 37 °N, and altitude from zero, or sea level, in the south to more than 8 000 m in the north. These changes also account for a progressive decrease in mean annual temperatures and an increase in rainfall from the south to the north. Forest areas, vegetation and conditions are given in Annex 7.

STAKEHOLDERS

The main focus of forestry activities in Pakistan are government forests, and forest departments are answerable for all forest issues owing to the immense powers they hold. Provincial forest departments deal with all issues, including afforestation, deforestation, sustainable forest management (SFM), trade in forest products, and regulation of commercial forest harvesting. Although large areas are classified as communal or private forest, there is no forum where forest owners/traders and forest-dependent communities can voice their concerns. The federal government has established the Federal Forestry Board, which is chaired by the federal Minister of the Environment and meets at least twice a year to discuss forestry issues at the policy level. The nomination of non-governmental members to the board is still under discussion.

Civil society has made efforts to influence the forest policy design and implementation process, with some success; civil society organizations were fully consulted during framing of the latest forest policy in 2002 (in its draft stages). Civil society is also adequately represented on the National Steering Committee of the FAO National Forestry Programme (NFP).

Civil society has developed its own programmes, mainly on advocacy, and holds consultative workshops and other activities, most of which are donor-driven and -funded. At present, major NGOs, such as the World Conservation Union (IUCN), the World Wide Fund for Nature (WWF)

and Leadership for the Environment and Development (LEAD), are not implementing any major forestry programmes. One of the activities approved under FAO's NFP is the development of fora for forest policy analysis (at a cost of US\$35 000). It is hoped that communities will be fully involved in consultations and that their concerns will be duly reflected in the final output of this activity.

In NWFP, JFMCs are expected to support the forest department in protecting forests and safeguarding the interests of local communities. However, during a seminar organized by LEAD Pakistan in December 2003 (LEAD Pakistan, 2003), it was found that many office bearers in the JFMCs are related to timber contractors and forest officers, and that JFMC operational activities, such as timber harvesting, are hampered by a lack of capital.

In Pakistan, strong farmers' organizations regularly influence policy in the agriculture sector; it is time that such bodies are established for the forestry sector.

OWNERSHIP FIGURES, RIGHTS AND RESPONSIBILITIES

Figures on forest ownership are not readily available, especially for the Northern Areas and Balochistan where the demarcation of forest boundaries is not clear. In addition, the accuracy of the available figures is not reliable. In NWFP, data on owners of Guzara forest are not available, mainly because ownership of private and Guzara forests keeps changing as these forests are saleable and transferable. Land revenue records of ownership are kept by the District Revenue Officer under the Land Revenue Act of 1967. All the applications for felling or wood removal from private forests that the forest department receives are referred to the revenue authorities for verification of the land title (Conservator of Forests Abbotabad, personal communication). According to forest authorities, it is practically impossible to keep records of private/communal forest landownership. In the hilly districts of Rawalpindi, Attock, Jhelum, Chakwal and Khushab in Punjab, the movement of all wood and wood products is regulated through the issuance of transit permits by the DFO; here too, authentication by the revenue authorities is a prerequisite to the issuance of permits.

Private and communal forest ownership is shared with forest departments through complex legal arrangements that confer joint responsibility for protection; owners can use forest resources for their daily subsistence uses only, while management, harvesting and sales are carried out by the forest departments. The shares of sale proceeds are disbursed by the departments according to ratios fixed for each area through agreements between the government and the owners. New forest arrangements in NWFP include the establishment of a Directorate of Community Development at the Forest Management Centre at Peshawar.

There is consensus that the existing arrangements of ownership rights and responsibilities are not serving the objectives of SFM and are leading to deforestation. Many projects implemented in the past 20 years had a strong community participation component, but the desired results do not appear to have been achieved. Although institutional and legal arrangements have been made in NWFP through projects supported by the German Agency for Technical Cooperation (GTZ) and aimed at promoting community participation in forest management, protection and harvesting, the results of these cannot be assessed until the ban on commercial harvesting has been lifted. In all other provinces, arrangements for forest ownership, rights and responsibilities have remained unchanged for the last 50 years.

The non-availability of data, and gaps on ownership and tenure arrangements appear to be a major obstacle for appropriate SFM planning in Pakistan. At present, people have no access to data and information on the activities undertaken by forest departments on the behalf of communities.

MANAGEMENT AGREEMENTS: FIGURES, RIGHTS AND RESPONSIBILITIES

Public sector forest and range resources are managed by the provincial forest departments. All legal categories of forests and rangelands are affected by the rights and concessions of local communities for grazing, grass cutting, and rights of way and water. In addition, forests are under pressure from human and livestock populations that are pushing them beyond their productive capacity. Forest resources are managed, protected and conserved through a regulatory and punitive legislative framework that does not include community consultations and participation. This lack of ownership and participation creates multiple protection and management problems, and sustainable development is almost impossible in most cases.

Reserved forests are mostly free from local community rights and are protected, but are conserved through a punitive enforcement system, resulting in illicit and unsustainable removals. In spite of the ban on green felling, forests and rangelands continue to degrade rapidly. Nomadic and local grazers and other forest users are exhausting meagre resources, even in valuable watersheds and fragile mountain ecosystems.

Protected forests are often affected by rights, which have been admitted since the time of permanent land settlement. These include grazing, grass cutting, lopping for fuelwood and – above all – the cutting of three mature trees every five years for the repair of houses and of one tree at the demise of a family member for burial purposes. The increase in numbers of families has increased the number of right holders beyond the productive potential of protected forests. Forest departments perceive communities as not caring about sustainability, in spite of having ownership rights and shares in forests and rangelands. However, except for the removal of trees, communities have no tenure or sense of ownership of forest resources. Many forests do not have any mature trees left, having allowed right holders to fell them all. The plight of unclassed forests and rangelands is even worse.

Communal forests and rangelands

There are different types of communal forest and rangeland, including village common lands and grazing lands under Board of Revenue control, and Guzara (subsistence) forests under the control of provincial forests departments with various levels of community participation. There is no clear management system for village common and grazing lands. Guzara forests and rangelands, which were initially meant for the subsistence of local pastoral and rural communities, have tended to fall into the clutches of influential and political people, and all management options appear to have failed to protect and conserve them. Common ownership and tenure seem to result in nobody assuming responsibility. The management history of Guzara forests in NWFP and Punjab shows that resources continue to degrade.

The NWFP government introduced a system of forest cooperative societies on an experimental basis in 1981 to develop confidence among the owners of Guzara forests. Initially, 18 cooperative societies were registered in a pilot project, and ten of these had been made functional by 1983. Of these, two were subsequently liquidated owing to serious irregularities and another two were suspended. Between 1986 and 1988, five new societies were registered, eight others were organized and two of the suspended societies were reinstated, raising the total to 21. The major drawback in this arrangement was that large landowners benefited from subletting the sale of standing trees to contractors who were in league with them. Smaller owners lost out to large owners, who deprived them of the benefits they derived from cooperatives for paltry sums of money. The influence of large owners and rich people led to overexploitation and mismanagement of felling, and the experiment with cooperative societies led to large-scale deforestation. Large-scale corruption led the federal government to ban all cooperative societies in 1993.

Private forests in AJK are exploited and reforested under the Sale and Development Rules of 1984. Owners who want to exploit the trees on their land have to apply for permits and are barred from selling and/or transporting timber to the lucrative markets in other provinces. The AJK government has the legal provisions to formalize private forests either by land-use classification or by setting a deadline for owners to register their forests. To this end, incentives are offered and owners can only exploit their registered forests on the basis of management plans for felling and regeneration.

Private forests and rangelands in the Northern Areas are managed by the forest department as protected forests under the Forest Act of 1927. The owners of these forests in the Northern Areas are not yet ready to take over their responsible management. There is a great risk of forest destruction, which would worsen the already harsh living conditions of people in the valleys of the Northern Areas, the economy of downstream communities and the country as a whole.

Private forests in the hilly areas of Punjab are managed under similar arrangements in which owners have to seek forest department approval for the harvesting and marketing of timber and fuelwood, even for domestic use. The forest department has enormous powers to check all forest produce, whether stored or in transit.

Forests, rangelands and wilderness areas in Cholistan

Cholistan covers 2.59 million ha in the three southern districts of Punjab, and is the site of local communities' traditional grazing grounds. This area was managed by the former rulers of Bahawalpur State and later transferred to the Punjab Forest Department on accession to Pakistan in 1952. The rulers of Bahawalpur collected small grazing fees and shares from the auction of Khar (*Haloxylon recurvum*), a raw material for the soda ash industry; the forest department has continued with this practice. Grazers are willing to pay the fees because the payment record is the only proof that they are residents on the land. The other important right of the local community involves employment in Khar collection. Khar collectors are entitled to half of the Khar they collect, but as there is no local market, they are forced to sell it to the one purchaser that buys all the Khar in the area.

PLANNING AND MONITORING IN DIFFERENT FOREST TENURE TYPES

The tenure systems adopted a century ago continue unchanged, in spite of some professionals' belief that they need change at the macro level. Such change would require political will, and many of the civil society organizations that would like to see change are faced with inadequate data and knowledge on the complexities of forest landownership and tenure arrangements. The first systematic study of forest land tenure arrangements was conducted by the Inspector General Forests (IGF) under and Asian Development Bank (ADB) loan project, Strengthening of the Office of the IGF (1997 to 2005). The only reliable monitoring is that of forest cover under the FSMP project of 1992, but forest ownership and forest land tenure arrangements were not in the mandate for this, so no such data are provided in the final report. Forest working plans for ten to 20 years prescribe forest management, including harvesting, revenue sharing, rights and responsibilities; excerpts of some working plans are given in Annex 8.

Changes and trends

The basis of most land tenure in Pakistan is feudalistic; territories that are now included in the country have been subject to many invasions, the United Kingdom being the last foreign invader. Each invasion caused significant changes in land tenure, the winner generally taking over the property of the losers, who either migrated to less hospitable tracts or, as happened to the Kohistanis when the Yusufzais invaded Swat, were forced to accept the role of tenants. The United Kingdom did not take over agricultural lands, but redistributed them among loyal tribes. The same happened to forest settlements; settlement officers were more liberal in acceding the rights claimed by loyalists. However, the best forests were declared United Kingdom crown property, although limited rights were admitted. Since then, land tenure has principally been shaped by history, which has not been the same in all provinces. As a result, the current tenure in forest and grazing lands is a mosaic of ownerships and rights varying from place to place.

The common denominator is that landowners residing near forests have rights to timber and to shares in the income accruing from the sale of trees. Tenants can graze livestock and collect fuelwood for domestic use, but at the will of the landowners, who can stop them. Exceptions to this general rule are in Hazara and Swat, where each male member of a family is an entity on his own and has equal shares in all the benefits from forests, including timber and the income from sales. All over Pakistan, such arrangements are for men only, and it is rare for women to inherit rights.

Changes in land tenure have been gradual responses to the changing political and social structure. The ways in which ownership rights are apportioned between the State and the landowners, and the essential subsistence needs of the landless are accommodated, have been determined by local customs and traditions, laws and rules and the manipulations of local elite groups. Land tenure change has not kept pace with the rapid increases in population and the incidence of poverty and landlessness. Control of deforestation is a daunting challenge in an era of declining natural resources, increasing demand, deteriorating governance and eroding social controls, and a common complaint of natural resource managers is that landless communities with or without rights in forests do not cooperate with forest departments in this task. A first step in addressing these complex problems would be to study the existing land tenure systems to find ways of reforming them so that they can help to curb deforestation and alleviate poverty. Forest tenure reforms have attracted very little attention from the government and civil society, as witnessed by the fact that the seigniorage fee established in 1904 was not revised until 2002.

The forestry sector is changing as a result of the forestry reform process that is driven mainly by donors and NGOs; government agencies are slow but they are interacting with civil society and working towards change. The shifts in focus to farm forestry in the Punjab and to JFM in NWFP may lead to change if followed up properly. IGF's recent involvement in the Convention on Biological Diversity, as the convention's focal point for Pakistan since 2004, may help to draw more public attention to the issues of traditional forest-related knowledge, customary law, indigenous communities and their rights, and the access and benefit sharing international regime. This would be a big step forward for forest land tenure arrangements.

PROCESS AND DRIVING FORCES

The initial legislation and policies discussed in the previous chapters were direct responses to the growing concern about dwindling forest resources during the later part of the nineteenth and the early twentieth centuries. As a result of these measures, adequate forest and grazing lands were left to meet the needs of local populations, while other areas were declared reserve forests to meet the needs of conservation and sustained yield management. Later, continuing concerns about dwindling forest resources and the additional pressures that were being put on forests led the State to promote farm forestry on a large scale. Farm forestry has been a success in Pakistan, and farm-grown wood now accounts for a major proportion of the wood sold in the market.

Donor-driven projects in NWFP have played a major role in forestry reforms, forestry roundtables and the drafting of the NWFP Forest Ordinance of 2002. This ordinance enhances the

powers of forest officers, but gives the communities a share in decision-making for the joint management of forests. A large number of JFMCs are in place. The NWFP government came up with new directions for safeguarding community rights in its Reforming the NWFP Forest Management document of 2001. FAO's NFP is expected to create much enhanced public and civil society awareness of forestry issues.

FOREST MANAGEMENT

The forest management systems developed during the United Kingdom colonial era were adopted for all types of forests in Pakistan; the driving objective was sustained yields of timber and fuelwood. No management systems were devised for communal/Guzara and private forests, except for in NWFP, where working plans for Guzara forests were more concerned with felling series than with the protective role of forests. In general, management systems paid very little attention to the potential for alleviating poverty through fair and equitable distribution of the benefits from forests. Elaborate working plan procedures were devised in the first half of the twentieth century, which the provinces adapted and improved after the creation of Pakistan in 1947. Shelterbelt, selection and group selection silvicultural and management systems were used in Pakistan until a complete ban on green felling in natural forests in 1985.) Current rules, regulations and procedures are a legacy of the colonial systems, which were based mainly on distrust among stakeholders, i.e., owners, shareholders, forest officers and contractors/purchasers.

ORGANIZATIONAL SET-UP

Each provincial forest department is headed by an administrative secretary who may be an administrative services officer or forester. The technical head of the department is the CCF. CCFs, conservators, DFOs, sub-divisional forest officers/range forest officers, foresters/block officers and forest guards form the hierarchy of the forest department, and are responsible for forest management at the provincial, circle, district/division, range/tehsil, block and beat levels, respectively. The duties, responsibilities and jurisdiction of each rank as defined in colonial times are still in force, with some amendments. There is no institutional set-up for community forestry, indigenous communities, traditional knowledge, customary laws and/or communal rights, apart from NWFP's recently established Directorate of Community Development and Punjab's Extension Forest Circle based in Lahore. Civil society recognizes the need to encourage the forest departments to address communal issues.

LIVELIHOODS

In addition to timber and fuelwood, forests also provide livelihoods to local communities, directly, indirectly and potentially. Direct incomes can be derived from grazing and browsing pasture, non-timber forest products (NTFPs), traditional medicines and food. Indirect contributions to income include fresh air, water and soil, and potential sources of income include ecotourism, forest-related traditional knowledge, and access and benefit sharing regimes. Most of the income derived from these sources is not accounted in national GDP calculations. Women are the main collectors of small fuelwood and sometimes also graze ruminants in forest areas. Specialized nomadic and transhumant tribes are fully dependent on natural forests for their livelihoods, and the lack of policy to safeguard the livelihoods of nomadic tribes that have to cope with closures for new plantation and regeneration areas is making it difficult for them to follow their traditional migration routes.

The fate of the traditional grazer tribes in the deserts of Cholistan is even worse, especially during drought, when they are compelled to live as lower-status groups with the landowners in irrigated areas. Punjab Forest Department (PFD) has stopped releasing annual grazing programmes, which were a requirement of the old working plans, so grazers are left at the mercy of local forest staff. PFD's policies and programmes for safeguarding trees from the effects of nomads are forcing mobile indigenous people to adopt a settled life style. Following PFD's ban on grazing, some mobile people purchased small pieces of land from the holders of grazing rights, only to find that the right of grazing is non-transferable, even when the land has been purchased. There is a need to sensitize decision-makers to the necessity of fulfilling the livelihood needs of forest-dependent people, so that Pakistan's poverty alleviation commitments can be met.

CAPACITIES

The NFP concept note clearly identified the need to enhance the capacities of government forest staff and civil society organizations so as to create an aware society. Communities also need capacity building, because at present their knowledge depends on what they have been told by knowledgeable people, and their main concerns are meeting their immediate food and fuelwood requirements.

POLICY AND LEGISLATION

In Pakistan, the federal government's role in forestry, through IGF, is limited to coordination, research and training. Except for a federal act declaring the Margala hills as a national park, there is no federal legislation on forestry. The provinces of NWFP and Punjab have framed their own provincial forest policies, which generally meet the needs for SFM but do little to safeguard tenure rights in communal and private forest or to improve communal forests and the rights of local populations. All policy documents acknowledging the role of farm forestry. The importance of trees outside forests is recognized in the Forest Act of 1927; under Section 38 private owners can hand their lands over to the forest department for tree plantation and protection, for fixed periods of 25 to 30 years at mutually agreed terms and conditions. However, this section of the law appears to favour the rich who use the policing role of the forest departments to restrict the access of local populations to their private forest lands. The NWFP Forest Ordinance of 2000 provides a legal and institutional mechanism for involving communities, and this is a major development in the area of community participation in forest management.

WHICH TENURE SYSTEM CONTRIBUTES BEST TO SFM AND POVERTY ALLEVIATION?

It is a difficult to analyse the comparative effectiveness of the different forest tenure systems in Pakistan, and more studies of specific sites and locations are required. The NWFP Forest Ordinance of 2002 seems to offer the greatest potential by providing adequate provisions to safeguard the rights of local communities while conserving forestry resources. The final test for this law, however, will be when the ban on commercial harvesting is lifted and the JFMCs are operational. Although provincial forest departments and forest owners are vociferous in their demands for lifting of the ban, the political will to do so still seems to be lacking.

Proposals for the way forward

An improved forest management system that alleviates poverty, supports livelihoods, provides employment in a multiplier effect, and conserves the environment and ecosystems is an idealists' dream that can come true only when the political will exists; it was the political will of the Indian government that brought forestry on to the concurrent list of the Indian Constitution, for example. It is hoped that continuous efforts and awareness raising will create a critical mass that pushes for a better future for forestry in Pakistan. It is also hoped that forest land tenure and ownership will attract attention for further studies. In the meantime, the following are proposals for now or the very near future.

Adapting policies and legislation

There is a need to adapt provincial forest policies to fulfil national and international obligations for forest conservation, sustainable use and equitable benefit sharing. Analysing the existing legislation and devising dynamic procedures for adapting and responding to changes is a massive task. At present, there is no regular system for policy analysis and revision and no mechanism for monitoring implementation. The best option in the present scenario is to invest in education for foresters, civil society groups and communities. The involvement of legislators will be a major breakthrough in this process.

Forest land tenure reforms

The need for forest land tenure reforms has not been recognized in Pakistan. There is much talk of giving communities a role in forest management, and various models of participatory forestry have been tried through projects. There is also some continuation of the reform process after the completion of these projects, as in NWFP's creation of the Directorate of Research and Community Development, but in most cases there is no such continuity. The government has been sensitive and responsive in making land reforms for agricultural landholdings and granting ownership rights to the landless, but forest tenure reforms have been anecdotal and lacking in vision. Forest land tenure and ownership reforms are needed because the common perception is that the State is the best manager of forests.

Revitalizing the seignorage fee

The seigniorage fee is a reciprocal amount exchanged between forest owners and the Forest Department in NWFP at the time of forest harvesting. The rate of seignorage fee is so low that forest owners do not collect their shares, which lie undisbursed in the State treasury. Rationalizing the seignorage fee so that forest owners/right holders feel that it carries adequate monetary benefits would probably enhance a sense of ownership and encourage communities to protect forests for their own interest.

Adapting planning and monitoring systems

The only monitoring of forest cover and extent since the 1992 FSMP study that covers the entire country was the ADB-funded study conducted in 2004/2005, which was restricted to monitoring the forest cover and extent of change since 1992. This study was supposed to cover the socio-economic impacts of forest change, but it produced little that could assist decision-makers in adapting policies and legislation for the reform of forest land tenure arrangements.

Identifying the role of land tenure in farm forestry

The importance of farm forestry in meeting the timber demands of the country is widely recognized, and many projects have successfully promoted the concept at the farm level. However, more analytical studies are needed to find the linkages between farm forestry and land tenure, because it appears that there is divergence of opinions between landowners and tenants regarding the planting of trees alongside agricultural crops.

Recognition of customary law, traditional knowledge and the role of indigenous communities

Indigenous communities hold forest-related traditional knowledge that they have been putting into practice for thousands of years in their struggle for survival in close proximity to nature. With increased population and urbanization there are fears that this knowledge may be lost. Forest dwelling communities have also developed and adapted systems for resource management, but the imposition of formal forest laws is threatening these age-old traditions with extinction (Cholistan DFO, 1994). Forest dwelling/-dependent communities all over the country practise customary law, which often conflicts with the formal laws followed by forest departments (an overview of NWFP customary law is given in Annex 4). There are no moves to recognize indigenous communities and their traditional knowledge; attention must be paid to these issues so that Pakistan can comply with its international obligations under Articles 8 (j), 10 (c) and 15 of the Convention on Biological Diversity, to which it is a party. Traditional knowledge has become a particular focus of attention following fears of biopiracy and the trend for patenting such knowledge at the global level.

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ANNEX I: THE HISTORICAL PERSPECTIVE

"Ownership of all land vests with God" has been the subject of much analysis in Pakistan (Punjab Land Administration Manual). As a Covenant State, land revenue has been collected by the State since the Mughal period (seventeenth century AD), throughout United Kingdom colonial rule and up to the present. Without entering into debates about the justification or otherwise of this, for this study the main point is that ownership and tenure arrangements for all lands, except those declared forest lands or transferred to the forest department, are regulated by the Land Revenue Act of 1967. Land revenue is not collected from private forest owners or communal forests, but the State charges royalties and taxes from owners and right holders on the income generated from the sale of trees. Tenure in non-forest lands follows the landowner, the peasant and the Riyatwari systems (FAO, 1974). In the landowner system, individuals own large estates, most of which were granted by the State for political reasons or for services to the government; land revenue is not usually levied on these estates. In the peasant system, land is owned and cultivated by individual families. In the Riyatwari system, land is acquired on a tenancy basis directly from the State. There used to be another system - Jagridari landownership - which was similar to the feudal holdings of Europe. In this system, the king granted large areas to influential lords, who were given governance autonomy in exchange for the payment of a fixed annual amount to the king's exchequer. Cases of default in payments were dealt with by armed invasion, but defaults were made only when the Delhi throne was weak.

Another forest tenure system, called Wesh, was unique to Swat and Dir Kohistan and had been practised by the rulers of Swat since the occupation by Yusufzai Pathans in the seventeenth century (Sultani-I-Rome, 2005). Under this system there were no permanent ownership or tenure rights to land; cultivable land was allotted to the local Pakhtuns for periods of eight to ten years, on a rotation basis; similar rules affected forest lands. Non-Pakhtun tribes had rights to graze and collect fuelwood, but the felling of trees was permitted only to Pakhtun leaseholders.

In Pakistan, there was no commercial exploitation of natural forests in the hilly areas of NWFP until the first quarter of the twentieth century, when the United Kingdom political agent intervened to curb deforestation. Landowners still collect traditional Qalang fees for land usages such as grazing in forested areas and rangelands. In the Punjab a similar fee – tirni, which is also for grazing land usage – was introduced by the Nawabs of Bahawalpur State and later adopted by the Punjab Forest Department in the early 1950s.

The United Kingdom colonial rulers recognized the need for forest conservation in the later part of the nineteenth century, when they took steps to enact forest laws, demarcate forest lands and make forest settlements. The first attempt at forest administration in India was made in 1806 in connection with the supply of timber for the navy. The Forest Act of 1870 and the Forest Policy of 1894 were the first steps to regulate forests.

The Forest Conservancy Rules were replaced by the Forest Regulations of 1872, followed by the Hazara Forest Regulation of 1873. These regulation were enacted during the course of the first regular land settlement in 1872/1873, which classified forests into government-owned reserve forests and privately owned wastelands (Guzara forests). Management of reserve forests was entrusted to the forest department, and the administration of Guzaras stayed with the deputy commissioner. Subsequent regulations of 1874, 1879, 1893 and 1911 modified the original regulations.

The colonial government renewed its commitment to forest conservancy when it enacted a comprehensive law, the Hazara Forest Act of 1936, repealing the last forest regulation of 1911. In 1950, the Guzara Forest Rules were framed under this act, most of the provisions of which have been adopted in the NWFP Forest Ordinance of 2002. Under these rules, the management of Guzara forests was transferred from the deputy commissioner to the forest department. Guzara forests were to be managed according to technical considerations, following the same pattern as State-owned reserve forests.

Under the control of the deputy commissioner, from 1873 to 1950, Guzara forests were protected by people employed by their owners and paid in cash or kind at the time of harvest. Each household was entitled to cut up to four trees per year for domestic use. Owners could cut trees at their own discretion after notifying the village revenue official or representative. The trees for sale were marked by a non-forester revenue officer. At the time of independence (1947), Pakistan inherited a land tenure system that was essentially feudalistic: there were no limits on landholdings; and 53 percent of the land was owned by 7 percent of the population under the Jagridari system.

ANNEX 2: EXCERPTS FROM A DETAILED REPORT ON JHELUM RAKHS

"In several cases it has been found that rights of way and access to water require recognition. The opinion of the Deputy Commissioner and Settlement Officer may be accepted at to the necessity or otherwise in each case. Mr Clarke has passed orders, which he hopes that the Punjab Government will endorse. In several cases he was obliged to disagree with the Conservator, who seemed to him to take too departmental a view of the requirements of the people in this respect. Many of the recommendations refer to the future management of the forests. In some cases, Mr Clarke has expressed an opinion, but as a rule, he thought these might be left to be decided by the Deputy Commissioner in approving of the yearly plans of operation.

In this further note the Settlement Officer proposed: (1) the abandonment of some rakhs; (2) the transfer of others from the Forest Department to the Deputy Commissioner; and (3) from the Deputy Commissioner to the Forest Department. The officiating Financial Commissioner has recorded his views, in each case accepting (1) and (2). As regards (3), the Settlement Officer gives good reasons against the transfer and the mere fact that the transfer would round off the District Forest Officer's charge is not, Mr Clarke thinks, sufficient under the circumstances (see paragraph 4 of Government letter No. 287-F., dated 21st June 1881). These rakhs are not, I am to say, capable of afforestation.

As regards fees for dry wood, Mr Clarke considers that it is only necessary to abolish the distinction between large and small wood in the case of head loads, and charge in anna for both; the other rates remaining as before. In being an accepted principle that the rakhs are to be managed for the benefit of the people, and not with a view to making a profit, it follows, I think, that the rates to be charged should be made only so high as to prevent the risk of the rakhs being exploited by speculators – a risk that, at any rate in the case of rakhs near the railway, is not entirely imaginary. We must of course in all cases provide that the wood is to be used for private purposes, and is not to be sold; but rates that would leave a very large margin of profit must also be avoided.

This risk of a traffic in wood is one reason for making no change in the rates for camel, bullock and donkey loads: another reason is that by lowering the head load rate alone we sufficiently provide for the poor man, who is the person chiefly to be considered. As one maund is a moderate estimate of the average weight of a head load, the present rates seem at first sight moderate enough, but the zamindar has to pay for his fuel in labour as well as in cash, and if the value of the former be added, it may be estimated that his fuel at present rates costs him from 2 to 8 annas per maund, which is not in the circumstances very low. It should also be remembered that throughout the Shahpur Salt Range, free collection of fuel is allowed, though this is a consideration affecting the adjoining parts of the Jhelum bills rather than the district as a whole. On these grounds I am of the opinion that the rate for head loads, should be reduced to 6 pies, and I would abolish the distinction between large wood and brushwood, which it must be almost impossible to give effect to in practice, while its necessity in the case of head loads is not clear, when no such distinction is made in the case of bullock loads, etc. If doubts are entertained as to the result of fixing a rate so low as that proposed, it might be sanctioned subject to reconsideration after five years."

Forest Department May, 1902, Abstract of Proposals

Sr. No.	Area	Central quota	Local quota
1	Babuzai-Manglawar	50	150
2	Babuzai-Jambil	50	150
3	Charbagh Masurizai	20	180
4	Azai Khel	30	270
5	Janki khel	20	180
6	Madyan	30	270
7	Behrain	40	360
8	Shamzai (Bar Swat)	40	360
9	Si-Boojnai	40	360
10	Kabal	40	370
11	Barikot	30	270
12	Badezal (Buner)	40	360
13	Salarzi (Buner)	40	360
14	Daggar (Buner)	60	540
15	Gaggara (Buner)	60	540
16	Chamla (Buner)	50	450
17	Chagbarzai (Buner)	60	540
18	Amazai (Buner)	40	360
19	Khudu khel Tutalai	60	540
20	Alpuri	40	360
21	Kana (Shahpur)	40	360
22	Lilowani	20	180
23	Chakesar	40	360
24	Puran	40	360
25	Martung	30	270
26	Bisbain	20	180
27	Seo	20	180
28	Pattan	30	270
29	Dobar	20	180
30	Ranolia	20	180
31	Karang	10	90
32	Jajshuai	10	90
33	Kalam	50	100
34	Ushu	30	70
35	Uttor	30	70
Total	•	1 250	9 900

ANNEX 3: ANNUAL QUOTAS OF TREES FOR THE DOMESTIC NEEDS OF THE POPULATION IN SWAT DISTRICT

ANNEX 4: TENURE SYSTEM FOR AGRICULTURAL LANDS, INCLUDING FOREST LANDS, IN NWFP

Sharecropping

There are two main sharecropping systems: in one the tenant gets a share of 20 to 25 percent, and in the other a share of 50 percent:

- 20 to 25 percent share: A tenant, permanent or temporary, who provides only labour in operating the lands gets 20 to 25 percent of the grains of each crop worked on. A 25 percent share is more common, but in Oghi, Shergarh area, which was part of the former Amb State, 20 percent shares are paid to tenants.
- 50 percent share: A tenant who provides all inputs (seed, manure and bullocks, ploughing and labour) receives a 50 percent share of grains. Generally, items that do not involve major cash expenditure, i.e., seed, manure, bullocks for ploughing and labour, are provided by the tenant, while the owner provides or shares the cost of items that need cash, i.e., fertilizer, tractors, etc., depending on the mutual agreement and socio-economic conditions of the two. Some villages (e.g., Ismail Bandi) operate systems in which tenants provide only work with their own pairs of bullocks, and receive 50 percent of the grains and some straw/stalks for fodder.

Land rent (Qalang)

The tenants manage the land fairly independently and give 25 percent of the produce (or its value) to the owner. This system is common in villages owned by large landowners with several permanent tenant families mostly in small hamlets up in the mountains. The collection of this 25 percent share as land rent depends on the degree of control a landowner can exercise over the tenants. Some tenants delay (or at times avoid) the payment of Qalang to the owners, but strong landowners can collect their 25 percent shares of grain and some straw/stalks for fodder. In a few areas (e.g., Panjool), land is also leased at a fixed rent for short periods (one crop season or one year). This is locally termed Bauli Tawan.

Farm trees and grasses: Farm trees are the exclusive property of the landowner, who does not allow tenants to fell them. However, landowners may allow tenants to prune trees for fodder and/or fuelwood.

Similarly, grasses on field bunds are often utilized by the owners, who may sometimes let tenants cut some. Crop weeds are not so strictly controlled. Tenants and even non-tenants may be allowed to collect grasses and other weeds from crops. Weeding is considered beneficial for the crop, provided it is carried out carefully so that the crop is not damaged. In late winter (January to February), most villagers face fodder shortages and prune green wheat tops for mixing with hay fodder. After the crop harvest, grazing is usually allowed for the livestock of tenants and others.

Free labour (begar)

Tenants, especially permanent ones, are expected to provide labour to landowners. The frequency of this free labour varies from village to village, depending on the degree of control that the landowner exercises over the tenants. Such labour is usually for crop and hay harvesting, fuelwood, hay and fodder carrying, house building, and weddings or funeral feast arrangements. Strictly speaking it is not absolutely free labour: the landowner provides food for the day and may let tenants take fodder, hay, stalks, fuelwood, etc., either immediately or when they need it. This again depends on how generous the landowner is.

Exchange labour (ashar)

Most small landowners and tenants exchange labour among themselves. This labour exchange is fairly flexible; a villager who receives help with hay harvesting does not necessarily have to return help with the same activity, but is expected to help with any socio-economic activity as required, and not to refuse when help is needed. There is a lifelong mutual help system in the villages, but in some areas this system is slowly vanishing and being replaced by daily wage labour.

Artisan fee (saep)

Village artisans, such as blacksmiths, carpenters and barbers, receive a bundle or two of harvested crops and 5 to 10 kg of grain for each cropping season from all of the farmers (both owners and tenants) they serve. The water carrier (who works mostly for the mosque) and the Iman (if landless) also receive quantities of harvested crops and threshed grains. The donkey rider who carries grain and straw from the farms to the houses receives 10 to 15 kg of each grain crop plus straw/stalks, depending on the quantity of the produce carried.

Fuelwood collection in Guzara forest

Owners and forest departments usually allow tenants to collect dry wood from the Guzara forest for household fuel consumption.

Guzara pasture

In Guzara lands where there are few or no trees and grass grows well, some villages leave portions of their Guzara land treeless for use as pasture. Many of these Guzara pastures are open for animal grazing to the whole village, although most are closed in the rainy season to protect grass growth for cutting in September/October for haymaking for the winter season. Grass in areas that are protected during the rainy season is cut by permanent tenants, and 25 percent of the hay or its value is given or paid to the owners as annual land rent. Patches of standing grass can be purchased. Village wastelands, on the other hand, are seldom closed from grazing; animal grazing is usually open all year round. A few large-scale landowners control their Guzara lands very strictly and do not let villagers graze animals or cut grass, even after the hay has been harvested. This is particularly common where there are young tree plantations.

Private forests, pasture and wastelands

Most private forests and pasturelands are in Oghi-Shergarh (former Amb State) area, where they are owned and managed by large-scale landowners as individual private patches of land. Tenants are allowed very limited use of these resources, except for grazing animals for eight to nine months a year. Small quantities of hay and field grasses are also allowed to the tenants. The owners protect almost all of their grass in the rainy season, selling it only to whoever needs and can pay for it. Tenants are allowed very little fuelwood, because the owners consume it themselves.

ANNEX 5: JFMCs IN NWFP

		Composition					
Division	JFMC/Guzara	Owners	Non-owners/ beneficiaries	SOĐN	Representatives of forest department	Local councillors	Total
Kaghan	Bahoonja	7	ε	-	2	2	15
	Chushad	7	3	-	2	2	15
	Bagir	7	3	-	2	2	15
	Batsangra	7	3	1	2	2	15
	Kaushian	2	3	1	2	2	15
	Suan	2	3	1	2	2	15
	Jagir	8	3	1	2	2	16
	Satbani	7	3	1	2	2	15
	Bhangian	7	3	1	2	2	15
Hazara Tribal	Keola C – 5	7	3	1	2		13
	Keola C 1 and 2 Mankai 3 and 7	6	5	2	2	1	19
	Batila C 7 and 8	8	2	1	2	2	15
	Rimadar C 4	8	2	1	2	2	15
	Barray Akorrian	6	3	1	2	1	12
	Kana – Gangwal	7	2	1	2	1	13
	Ganja Gangwal	8	2	1	2	2	15
	Jhakh – Gangwal	8	2	1	2	1	14
	Jabhour – 6	3	2	1	2	1	9
	Rimdara C – 5	8	2	1	2	1	13
	Mankai Guzara C – 1 and 2	10	2	1	2	1	16
	Jabar Guzara C – 16	8	2	1	2	1	14
	Mankai Guzara C – 8	6	2	1	2	1	12
	Reindara Guzara C – 3 and Jabar C – 5	11	2	1	1	2	17
	Gantar Guzara C 2, 3 and 4	8	2	1	2	1	14
	Rashang Guzara C – 13	6	2	1	2	2	13
	Gantar Guzara C 12 and 13	10	2	1	2	2	17

Reindara Guzara C – 7	6	5	-	2	-	12
Roonga C – 5	5	2	2	2	-	12
Devli Guzara C 1, 4, 7, 10, 28, 29, 38, 41, 43, 45 and 49	7	m		2	2	14
Devli Guzara C – 19, 24 and 25	10	-		2	2	15
Ghori Pair C – 1 and Laam C-1	7	2	1	2	2	18
Kala Dob C – 2	6	S	-	2	2	14
Panjool Guzara C 20 and 21	7	S	,	2	2	14
Devli Guzara C – 10	7	3	,	2	2	14
Mandagocha C –16	11	2	,	2	2	17
Mandagocha C – 1, 2, 3, 5, 8, 10, 25, 26, 27 and 28	11	3	1	2	2	15
Mankay Guzara C – 5	۷	2	1	2	1	13
Darrah Pashto C – 2	6	2	2	2	2	17
Roonga Karr Baik C – 1	8	2	1	2	1	14
Rashang C – 9	10	2	1	2	1	16
Koela C 3, 4 and Gantar C – 22 (ii)	6	2	1	2	1	12
Dheri Guzar C –17 and Rashang Guzara C –16	۲	3	1	2	2	15
Rashang C – 2, 3	6	3	1	1	1	15
Rashang C – 5, 6	8	2	1	2	1	14
Rashang C – 11, 12	8	3	1	2	1	15
Keri Guzara C 3, 4	7	2	1	2	2	14
Jachha Guzara C – 11	9	2	ı	2	2	15
Jachaa Guzara C 12	7	2	1	2	2	15
Devli Guzara C 8, 9	9	2	1	2	1	14
Hillan Guzara C 15 to 19	7	3	1	2	2	15
Jachha Guzara C 3	12	2	ı	2	2	18
Rashang Guzara C 7, 8	10	2	1	2	1	16
Jabar C – 13	7	3	1	2	2	15
Hillan Guzara C – 22, 23, 25 to 27	7	4	1	2	2	16
Hillan Guzara C – 21, 24, 28, 29	7	3	1	2	2	15
Gaggar Guzara C 1, 2, 3	8	2	1	2	2	15
Jachha Guzara C – 2	13	2	ı	2	2	19

	Jachha Guzara C – 6	16	2	,	2	2	22
Siral	Battal	7	3	-	2	2	15
	Keri	7	3		2	2	14
	Mandagocha	8	2		2	2	14
	Hilkot	2	3	1	2	2	15
Alpuri	Chakisar C – 8	2	3	1	2	2	15
	Chakisar C – 7	2	3	1	2	2	15
	Kana East C 13	18	1	I	1	1	18
	Kana East C 5	13	I	1	1	1	13
	Kana East C 9, 11 and 12	15	ı	I	-	1	15
	Lilowanai C – 8, 9, 10, 11, 26 to 31, 33, 39, 40 and 41	20	-	I	-	1	20
	Kana West C 11 to 16 and Kana West C 14 and 15	10	1	,	2	1	12
Upper Dir	Jarjori C – 66, 67, 68	8	2		2		12
	Gorkohi Forests C 46	6	2	1	2	1	14
	Gorkohi C 47	7	1	4	2	2	15
Dir Kohistan Sheringal	Biar Forest (Village)	8	-	2	2	3	15
	Kalkot Forests (Village)	13	2	3	4	2	26
Swat	Bar Lalko C 17 to 31, 39 & 40	8	3	1	2	2	15
	Gujarao Kalay Mian Adam C 16 to 19	7	4	1	2	2	15
Chitral	Berir Valley Forests	15	5	1	2	2	20
	Kana West C 11 to 16 and Kana West C 14 and 15	10	-		2	1	12

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No. of JFMCs	6	49	4	3	6	2	1	77
Division	Kaghan Forest Division	Hazara Tribal Forest Division	Siran Forest Division	Upper Dir	Alpuri	Dir Kohistan Sheringal	Chitral	Total
S. No.	1	2	ñ	4	5	9	7	

ANNEX 6: AREA STATISTICS AND GEOGRAPHICAL DISTRIBUTION IN THE NORTHERN AREAS

The area under protected forests – conifers – in the Northern Areas is 64 512 ha. Total forests are 381 200 ha, and further classification into private or protected forests is not reported. The distribution of protected forests in the Northern Areas is given in the table on the next page.

The protected forests in various locations of districts are listed below:

- Diamir district (only in Astore sub-division): Bunji, Rama, Bulan, Gurikote, Tarshing, Parshing, Bulushber, Rattu, Mir malik, Rehmanpur, Buluchi, Qamari, Ooian, Harcho, Mushkin-Dashkin-Turbiling, Faqir, Kot, Gudai Valley, Kala Pani, Gurais in Minimurg Tehsil.
- *Baltistan district:* Sadpara, Thorsay Bilamik, Munthokal Gasing, Torgan Memosh, Hargosil, Bilarmo, Basho, Gangi, Talu, Harpo, Mendi, (Hingo), SKB, Kachura, Kharmang.
- *Gilgit district:* Minower, Sakwar, Jutial, Barmus, Nowpura, Healter, Juglote, Rehmainabad, Sharote shikiote, Danyour nullah, Bar valley, Skindarabad, Jafarabad, Minpin, Thoal/Nilt, Haramosh, Sai Nallah, Bagrot, Kargah Nallah, Naltar and Chalt-Chaprote.
- *Ghizar district (Punial):* Assumber, Pakora, Thandar Mathandar, Sherqillah Nallah, Ghulapur, Singul Nallah, Gich Nallah, Isi Nallah and Bargal Nallah, Birga.
- *Ghizar district (Yasin):* natural forests of poplar and willow in Darkot.
- *Ghanche district:* natural scrub forest of willow and sea-buckthorn in almost all nullahs and riverbeds; juniper forest in Thala, Kharfuk, Khaplu nullah and Hushe valley.

Ownership rights and tenure in other areas of the Northern Areas

A review of the evolution of ownership rights and tenure arrangements in the forest lands of the Northern Areas is very interesting in the context of this study: forest management in areas formerly owned and managed by the Mirs is different from the management and control followed under the tribal system, locally called shinaki. Until the principalities were abolished, there were two categories of forests in the Northern Areas:

- tribal forests in Chilas, Darel, Tangir and Diamir districts;
- feudal forests owned by the ruling princes.

Although customary rules still operate, it is statutory law that primarily governs the use of forest resources in Northern Areas today. Under customary law, tribal institutions regulated the usage of forests, permitting access to wood and grazing to fulfil local needs but not for commercial purposes. In the customary law prevalent today, the tribal communities decide how to use forests with a 60 percent majority vote; the forest department imposes a 50 percent royalty on trees sold by the communities to contractors. The State now owns forests that formerly belonged to the feudal rulers, and traditional right holders are allowed to continue using them, but with some variations. Before the abolition of the Rajgiri system, rights holders had to apply to the Raja for permission to take felled timber; since 1972, they apply to the forest department. An IUCN study in 2003 found that the local communities do not have a sense of ownership or rights in these forests, and deterioration continues.

District	Area			Forest type	Significance	Rights	Remarks
	Mile ²	km²	ha				
Gilgit (Gilgit and Nagar)	66	169	17 028	Montane dry temperate and sub-alpine	Subsistence timber, fuelwood, grazing and other NTFPs; biodiversity, watershed, ecotourism, and logging for civil works	In Nagar, free grant of timber and fuelwood to local right holders, as per notification of 1974. In Gilgit, timber at concessional rates to locals; free fuelwood from dead and dying trees	No forest in Hunza
Ghizar (Punial)	30	77	7 740	Montane dry temperate and sub-alpine	Subsistence timber, fuelwood, grazing and other NTFPs; biodiversity, watershed, ecotourism, and logging for civil works	Free grants of timber and fuelwood to local right holders, as per notification of 1974	Scarce forest resources in Ghizar; no forest in Punial and Gupis
Diamir (Astore)	120	307	30 960	Montane dry temperate and sub-alpine	Subsistence timber, fuelwood, grazing and other NTFPs; biodiversity, watershed, ecotourism, and logging for civil works	Free grant of timber and fuelwood to local right holders, as per Alian No. 40 of 1940	All forests in Chilas, Darel and Tangir are private forests
Skardu	36	92	9 288	Montane dry temperate and sub-alpine	Subsistence timber, fuelwood, grazing and other NTFPs; biodiversity, watershed, ecotourism, and logging for civil works	Timber at concessional rates to locals; free fuelwood from dead and dying trees	Limited forest resources in Skardu district. No forest in Ghanche district.
Total	252	645	65 016				

Source: Northern Areas Forest Department.

Protected forest in the Northern Areas

ANNEX 7: FOREST TYPES AND CONDITION

Forest ecosystems in Pakistan are classified primarily on the basis of Seth's 1935 descriptive classification of Indian forest types. Although there are other classifications in use, the descriptive classification summarized in the following sections is valid and serves all practical purposes. This classification is based on climatic and others factors and amply reflects the diversity of forest types in Pakistan. A major portion of the total area is under natural coniferous and broad-leaved forests. About 5 percent of forests are entirely the results of planting. The range of forest starts with alpine scrub in the north Himalayas and finishes with mangrove forests in the Indus deltaic swamps along the Arabian Sea.

The following table gives the distribution of forest area according to forest type.

		Production	Protection	Total	(%)
1	Coniferous forests	867 000	1 092 000	1 959 000	42.75%
2	Scrub forests	158 000	1 568 000	1 726 000	37.65%
3	Riverine forests	158 000	138 000	296 000	6.50%
4	Mangrove forests		347 000	347 000	7.60%
5	Irrigated plantations	83 000	151 000	234 000	5.10%
6	Linear plantations		17 000	17 000	0.40%
	Total	1 266 000	3 313 000	4 579 000	100%
	Area (%)	27.6%	72.4%		

Forest areas, by category of forest (ha)

Coniferous forests

Sub-alpine forests

This is the most common tree formation in the Himalaya and other mountain ranges between 3 350 and 3 800 m elevation, occurring in AJK, Northern Areas and Malakand and Hazara civil divisions of NWFP. Tree vegetation such as Himalayan silver fir (*Abies pindrow*) and blue pine (*Pinus wallichiana*) are the important conifers, which occur mostly in pure form with a lower storey of broad-leaved trees, among which *Betula utilis* is typically prominent. Other associates, such as *Prunus* and *Salix* spp. and viburnum bushes, complete the cover. The trees in this zone are comparatively short in height. There is a spring flush of herbaceous flora, among which are primula and ranunculaceous. Ferns are also in abundance. *Aconitum heterophyllum, A. chasmanthum, A. leave* and *Saussurea lappa* plants are important medicinally and are intensively exploited.

Dry temperate forests

These are distributed throughout the dry inner mountain ranges, beyond the reach of the monsoon, in the Northern Areas, AJK (Neelum valley), NWFP (Chitral and Kaghan valley) and Balochistan (Takht-i-Suleman, Shinghar and Ziarat), at 1 525 to 3 350 m or higher. Natural vegetation is mostly conifers. The main species are *Cedrus deodara, Pinus gerardiana, Juniperus excelsa, Pinus wallichiana* and *Picea smithiana. Quercus ilex* predominates as a pure crop on lower elevations. The commonly found associates are *Fraxinus* and *Acer* spp. The scrub vegetation includes xeromorphic species of *Daphne, Lonicera, Prunus, Artemisia, Astragalus* and *Ephedra*. Medicinal plants such as *Ephedra nebrodensis, Artemisia maritima, Carum bulbocastanum, Thymus* sp. and *Ferula* sp. are exploited commercially. Dried fruits of walnut (*Juglans regia*), chilghoza (*Pinus gerardiana*) and unab (*Zizyphus vulgare*) are collected in sizeable quantities to increase household income.

Juniper forests

There are few pure stands of juniper species in the world, and the juniper forests of Balochistan are believed to be the most extensive of these. Many of the juniper trees (*Juniperus excelsa*) are known to be at least 2 500 years old. The forests lie at between 2 000 and 3 000 m altitude in an area of

montane steppe, and are composed of scattered trees with no closed canopy. They contain unique flora and fauna, with Sino-Himalayan, Central Asian, Iranian and Turkish affinities.

There is no commercial exploitation, but cutting of the trees for fuelwood has depleted the forest, and regeneration is hampered by unrestricted livestock grazing. Junipers are particularly susceptible to the effects of overexploitation and prolonged drought, and have an extremely slow rate of regeneration. About 37 247 ha of juniper forest is now included in the Ziarat Juniper Wildlife Sanctuary, but there is no management plan for this.

Moist temperate forests

The main character of this forest type is the extensive growth of conifers. This formation extends along the whole length of the outer ranges of the Himalaya, between subtropical pine and sub-alpine forests at 1 375 to 3 050 m altitude, varying markedly in aspect and configuration in the Murree hills, Galies, Kaghan, Dir, Swat and AJK, with annual rainfall of 630 to 1 500 mm and average annual temperature of 12.2 °C. Most of this precipitation derives from the southeastern monsoon from July to September, but an appreciable part is brought by the westerly disturbance during the winter and spring months. This largely falls as snow, and is an important factor in determining the type of forest formation.

The main coniferous species are *Pinus wallichiana*, *Cedrus deodara*, *Picca smithiana* and *Abies pindrow*, attaining heights of 24 to 36 m and diameters of up to 1.5 m. *Taxus* sp. also occurs locally in the lower canopy. Among the broad-leaved trees, *Quercus incana*, *Q. dilatata* and *Q. semicarpifolia* are prominent, with *Rhododendron arboreum* as their most common associate.

Subtropical pine forests

Chir (*Pinus roxburghii*) forests are nearly at their western limit in Pakistan at altitudes of between 925 and 1 675 m, ascending sometimes to 2 150 m on ridges with southern exposure. They commonly occur in Hazara, the Murree hills and AJK. Chir forms practically all of the top canopy, which may grow to up to 37.5 m high with 0.8 m diameter. Broad-leaved species include *Quercus incana* with occasional *Lyonia ovalifolia, Rhododendron arboreum, Pistacia integerrima, Sizygium cuminii, Mallotus philippinesis, Xylosma longifolium, Quercus glauca, Ficus spp.* and others.

Scrub forests

Dry subtropical broad-leaved forests

This area is badly eroded and deep ravines have been formed. Torrents form shallow drainage lines that criss-cross the undulating and broken country. Rocks and boulders are common features. Weathering of sandstone produces some insoluble matter, which forms small units of infertile soil that support only very poor vegetation. There are extensive areas of sheet rock and limestone from which surface soil has entirely disappeared. The climate of this tract is extreme in nature: winters are cold and summers very hot. Winds blow all through the summer. The rains come in July and August and in January and February, but are erratic, often falling in a few heavy storms with long intervals of aridity. These forests grow in the foothills and lower slopes of the Himalayas, the Salt range, Kala-Chitta and the Suleman range, and may occur throughout the country at suitable elevations, merging downwards with tropical thorn forests and upwards with subtropical pine and temperate forests. These are forests of low branchy trees, varying in density from complete closure under the most favourable conditions to scattered single trees or groups on dry sites. The type has a fair amount of shrub growth, but this too varies in density. The tree species are mostly thorny, often with small evergreen leaves. Diameters of reasonable size can be seen in those valleys where deep soil and enough moisture are available. The main species are Olea fernlginea, Acacia modesta, Pistacia integerrima, Dodonea viscosa, Reptonia buxifolia, Capparis decidua, Tecoma undulata, Gymnosporia royleana and Zizyphus nummularia.

Dry tropical thorn forests

This is the natural vegetation over all of the Indus plain, and is known as Rakh forest in the upper part and desert forest in the lower part of the country. These species have the capacity to survive and grow in an area where temperatures often reach 45 °C and rainfall ranges from 75 to 140 mm. There are an average of only 16 rainy days a year. Vegetation consists of trees that are usually thorny and stunted, dominated by *Acacia* spp. Common species are *Acacia modesta*, *A. nilotica*, *A. senegal*, *A.jacquemontii*, *Salvadora oleoides*, *Prosofis cineraria*, *Tanwrix aphylla*, *Zizyphus mauritiana*, *Z*. nummularia, Capparis decidua, Tecoma undulata, Calotropis procera, Commiphora mukul and Euphorbia caudicifolia. Of these, A. senegal, A. jacquemontii, C. mukul and Euphorbia occur in the subtropical semi-arid maritime region. While sand dune tracts are overgrown by species of Calligonum, saline parts are occupied by species of Sueda, Salsola, Haloxylon and Salvadora persica, and areas that are periodically inundated by water have Tamarix dioica. Among the grasses, species of Aristida, Eleusine, Panicum, Cenchrus and Lasiurus are prevalent on appropriate habitats.

Riverine forests

These forests, commonly known as Bela forests in Punjab and riverine forests in Sindh, occur on the floodplains and banks of the major rivers that form the Indus basin. Flooding for about six weeks appears to be necessary for their good growth. Erosion and deposition in succession is a constant feature of these areas. The main species include *Acacia nilotica, Tamarix aphylla, Tamarix dioica, Prosopis cineraria, Dalbergia sissoo* and, to some extent, *Populus euphratica*.

Mangrove forests

More or less dense evergreen forests of very low average height, further reduced by biotic agencies, occur in the Indus delta swamps on the coast of Karachi and Lasbela. *Avicennia marina* is the most important tree in these forests. Adverse factors have not allowed natural regeneration to take place.

Other tree associates are *Rhizophora mucrona* and *Ceriops fagal*. All the tree species are markedly gregarious and evergreen with leathery leaves. The best patches reach 6 to 7 m in height and are found on sites that are difficult to reach on account of soft mud; elsewhere the crop rarely reaches 3 m. These forests have not been managed scientifically so far.

Irrigated plantations

These forests are the outcome of human efforts on submarginal lands where irrigation water is available. Plantations are created after the vast tropical thorn forests have been cleared. Plantations are spread over the plains of Pakistan, primarily in the provinces of Punjab and Sindh. Their areas vary from 200 to 8 000 ha. Major species grown include *Delbergia sissoo, Morus alba, Bombax ceiba, Eucalyptus camaldulensis, Acacia nilotica, Melia azedarach, Populas* spp. and *Salix* spp.

Linear plantations

These consist of trees planted along rail, road and canal sides. The main species are *Dalbergia sissoo* and *Acacia nilotica*. These forests are mainly for protection and aesthetic purposes.

Forest areas

Forest areas in Pakistan are difficult to assess, as all estimates include the area under orchards as forest. The best estimates available are those of FSMP study of 1992; the latest figures on forests collected by IGF are given in the following tables.

Туре	NWFP	Punjab	Sindh	Balochistan	AJK	Northern Area	Total
Coniferous	994.0	68.9	-	131.0	407.0	284.9	1 885.7
Irrigated plantation	-	138.6	98.2	0.3	-	4.0	241.1
Riverine forests	-	51.5	241.1	45.0	-	-	337.6
Scrub forests	63.0	289.6	-	141.4	9.3	-	503.3
Coastal	-	-	344.8	-	-	-	344.8
Private plantation	764.0	-	-	15.0	-	-	779.0
Range lands	150.0	2 680.2	457.6	795.0	150.0	1 601.0	5 833.8
Miscellaneous	-	-	-	-	-	-	-
Total	1 971.0	3 228.8	1 141.7	1 127.7	566.3	1 889.9	9 925.4

Forest area under the jurisdiction of provincial forest departments, 2004/2005 (thousand ha)

Sources: Provincial Forest Departments.

Area of forests by legal classification, 2004/2005 (thousand ha)

Category	Punjab	NWFP	Balochistan	Sindh	AJK	Northern Areas
State	-	-	684.0	-	567.0	-
Reserve	324.4	100.0	-	323.4	-	-
Protected	224.7	590.0	403.0	802.4	-	65.3
Unclassed	64.2	64.0	-	13.5	-	-
Resumed lands	6.4	22.0	-	2.4	-	-
Guzara	40.3	261.0	-	-	-	-
Communal	-	-	-	-	-	219.6
Section 38	17.6	30.0	-	-	-	-
Chos Act	1.3		-	-	-	-
Miscellaneous	50.8	764.0	-	-	-	-
Total	729.6	1 831.0	1 087.0	1141.7	567.0	284.9

Sources: Provincial Forest Departments.

ANNEX 8: EXCERPTS FROM FOREST WORKING PLANS ON RIGHTS OF LOCAL POPULATIONS IN STATE FORESTS OF SELECTED DISTRICTS

Revised working plan for the cantonment forests Murree (1971/1972 to 1980/1981)

"In 1885 the residents of Birgran village were given rights to graze their cattle unlimitedly free in Gahrial forest, when first revenue settlement was completed" "taking two cows equal to four sheep the incidence of grazing over an area of 313 acres comes to 45 animals per acre, which is extremely heavy compared with carrying capacity."

Working plan for the scrub forests for Rawalpindi district (1966/1967 to 1975/1976)

"The reserved forests in Murree Tehsil are in addition open to free grazing of kine, horses and donkeys. The divisional forest officer may, however, close one-quarter of the area at a time for regeneration to ensure cooperation of the local people in preventing incendiary fires."

Working plan for Utror Desan forests Kalam valley, Swat

"The landowners having land adjoining the forest are entitled to grazing of their livestock in the forest. They could also realize fees from gujar nomads for allowing them to graze their cattle in forest adjoining their lands."

Working plan for Giddar forests Hazara

"Although the tract dealt with was declared the sole property of the Khan of Giddarpur during the settlement of 1872/1873, rights such as grazing and grass cutting were admitted and recorded in favour of all residents of Gidarpur and its hamlets."

Working plan for Upper Kaghan forest Hazara (NWFP)

"Guzara forests are the property of the local zamindars (and owners) jointly or exclusively. They enjoy every right unless suspended by the conservator of forests, Abbotabad for the preservation of these forests."

Working plan for Lower Siran and Agror Reserved Forests, Hazara (NWFP)

"In case of the reserved forests of Siran forest division, included in this plan, the rights consist of grazing, grass cutting and collection of dry fallen wood for the bonafide domestic use of the right holders."

Implications of forest utilization, conversion policy and tenure dynamics on resource management and poverty reduction

Case study from Pasir district, East Kalimantan, Indonesia

By Dicky Simorangkir TBI Indonesia and Mustofa Agung Sardjono Mulawarman University Center for Social Forestry, Samarinda

Summary

As one of the world's forest-rich countries, Indonesia has struggled to resolve problems of deforestation and poverty, especially over recent decades. The forestry sector has been a major contributor to the national economy over the last three decades, accounting for almost 10 percent of total gross domestic product (GDP). The cost of this, however, has been immense. At the beginning of the twenty-first century, about 60 million ha, or approximately 40 to 47 percent of the total forest area, was degraded, and annual deforestation rates were between 1.6 and 2.3 million ha. At the same time, massive forest exploitation had not contributed significantly to the livelihoods of communities living in and near forests. While most local communities are still poor, and rural areas have not developed much, conflicts among forest stakeholders – particularly between local communities and private timber and plantation companies or the government – have become more intensive and extensive. Lack of clarity over land tenure issues, failure to consider existing local systems and cultures, and the top-down approach of the central government are the main causes of this. Radical political changes in 1998, followed by the implementation of regional autonomy in 2001, created optimism about better resource management and community well-being. So far, however, the situation has not changed significantly.

The objectives of this study are to gain a better understanding of forest use and land tenure policies in Indonesia, to observe their development and trends, especially since the beginning of regional autonomy in 2001, and to use this information as the basis from which to analyse the impacts on better resource management and poverty reduction.

More detailed data and real-life information come from a case study of Pasir district, East Kalimantan. Data and information were collected and compiled from secondary data exploration/document studies in Pasir district, combined with primary data from interviews with key informants, government and non-governmental organizations and local communities. Field observations and visits to selected villages were conducted to obtain a better understanding of field realities.

The study resulted in the following important findings:

- Forests play an important role in the lives of local traditional communities, which for generations have occupied forest lands and managed/utilized the resources to meet their ecological and subsistence needs and to generate cash income for better well-being. The situation changed dramatically with Agrarian Act No. 5/1960, which gave the Government of Indonesia full authority to control, regulate and manage forest land and resources. This act and Forestry Law No. 5/1967 led to the declaration of all forest land as State forest land. This and the gazettement of forest land through the Consensus Forest Land Use Plan in 1980, followed by regional spatial planning in 1992 and the harmonization of gazettements in 1999, created a situation in which local communities have no clear rights and have lost their traditional access to land and natural resources. Many land tenure-related conflicts have erupted, and were suppressed by the government during the New Order regime (1967 to 1998).
- After gazetting State forest areas, the government started to allocate forest land to various development activities, with the aim of increasing revenue from the forestry sector to support the country's development programme. This was done in a top-down manner, starting with capital-intensive timber exploitation in the early 1970s, followed by the development of timber processing, pulp and paper industries in the mid-1980s, and large-scale forest conversion for industrial timber estates (from the mid-1980s) and oil-palm plantation (in the 1990s). Although these activities made the forestry sector one of the most important contributors to the country's economy, the overutilization and conversion of natural forest led to the massive degradation of large forest areas, and scarcities of raw materials (timber). Little was achieved in terms of improved livelihoods for local communities, which instead ended up losing much of their existence base (land, forest products).
- The situation has worsened since the fall of Suharto in 1998 and the issuance of Act No. 22/1999 and Government Regulation No. 25/2000, which triggered autonomy euphoria across Indonesia. Provinces and districts have started to voice their disagreements and disappointments with the system, claiming more independence and rights in governing their natural resources through, for example, the issuance of permits for forest resource utilization. As a result of weak law enforcement, lack of supervision from the central government, uncontrolled legal and illegal forest logging, and the encroachment and conversion of forest land, forest destruction has accelerated and intensified over the last five years. Adherence to the slogan "Increasing local incomes for local development and improved livelihoods" has often been at a cost to the environment.

- Decreasing forest resources have increased local stakeholders' interest in managing forest areas. Oil-palm plantations are a very promising alternative because they provide cash income relatively quickly. The expansion of oil-palm plantations has accelerated over the last decade and continues to increase, mainly because of strong support from district governments and local communities. The study found that although non-timber forest products (rattan, aloe wood, honey, etc.) still play an important role in livelihoods, more and more local communities are developing oil-palm plantations on converted forest areas. In addition, district governments are making agribusiness the core for future district-level economic activities, and are reserving large tracts of land for the expansion of oil-palm plantations. In areas where existing agricultural land is already in use, such as in Pasir district, the expansion of plantations will most likely involve converting remaining forest areas, including conservation and protection areas.
- Based on an analysis of the situation, the study makes the following recommendations for better forest resource management and the reduction of land tenure-related conflict:

Improvement of policies on resource management through:

- reformulation/revision of Agrarian Act No. 5/1960;
- development of forest resource management policies with clear objectives and a long-term focus on the government's five priority programmes;
- consistent implementation of decentralization and deconcentration of authority, with lines of responsibility from central to local governments accompanied by strict law enforcement and supervision, as well as strengthened political, administrative and technical facilitation/guidance from the central government;

- encouragement and support for local stakeholders, especially district governments, in implementing existing regulations and mechanisms that can help to resolve problems at the local level.

Stronger involvement of local communities in forest resource management through:

- identifying and recognizing traditional rights and lands;
- developing appropriate community-based forest management models/systems;
- empowering local communities.

Development of integrated and collaborative resource management that secures the participation of local communities in collaborative action, while facilitating other stakeholders in increasing their social management capacity and sensitivity.

Introduction

BACKGROUND TO THE STUDY

Indonesia has some of the world's most extensive and richest forest resources in terms of biodiversity and economics. Forest covers about 120 million ha,⁴³ or about 60 percent of Indonesia's total land territory, mostly in the outer islands of Sumatra (18.77 percent of total forest cover), Kalimantan (31.99 percent), Sulawesi (9.52 percent) and Papua (30.99 percent) (Sardjono, 2004a).

These forests have been used for many generations by the communities living in and near them. Since the 1970s, the government too has used them more extensively to contribute to national economic development through State-owned and private companies. This has made the forestry

⁴³ Based on official figures from the Ministry of Forestry in 2003.

sector one of the most important contributors to Indonesia's economy over the last three decades. The export value of processed forest products (e.g., sawnwood and plywood) reached US\$200 million/year during the 1980s, increasing to US\$2 billion/year in the 1990s. Shortly before the monetary crisis that hit Indonesia and many other Asian countries in 1997, the forestry sector was contributing about US\$20 billion/year, or about 10 percent of total gross domestic product (GDP) (ITTO, 2001). In addition, forest industries have created millions of direct and indirect employment opportunities; the number of employees in the forestry sector increased from 113 000 in 1980, to 389 000 in 1997, when plywood production was at its highest level, before decreasing slightly to 362 000 in 2002, following the Asian economic crisis (Simangunsong, 2004).

In spite of these impressive figures, however, by the beginning of this century, about half of the natural forests in Indonesia had been destroyed or degraded to varying degrees through various kinds of forest use and conversion. In addition, forest utilization in the last three decades has done little to develop rural areas or improve the livelihoods of people living in and near forests. This is owing mainly to the overwhelming problems of unclear land tenure and local communities' lack of participation or involvement in the management and use of forest resources.

The fall of the New Order regime of former President Suharto in May 1998 radically changed the political, economic and social landscape of Indonesia, particularly with the release of Act No. 22/1999 and Government Regulation No. 25/2000 regulating the decentralization and deconcentration of authority and responsibility from the central to regional (provincial and district) governments in almost all sectors. These rulings triggered autonomy euphoria all over Indonesia. Issuance of Forestry Act No. 41/1999, which superseded Forestry Act No. 5/1967, marked the onset of reformation in the forestry sector. However, neither this new act, nor the other natural resource regulations issued in the last five years – partly in favour of local communities – have changed the situation significantly. Some individuals and groups have taken advantage of the ambiguity of the laws and regulations to abuse the system, leaving the majority of local communities still insecure over the ownership of land and natural resources.

OBJECTIVES

The objectives of this study are to gain a better understanding of forest utilization and land tenure policies in Indonesia, to observe the development and trends of these, especially since the beginning of regional autonomy in 2001, to analyse their impact on improved resource management and poverty reduction, and to formulate proposals for the way forward.

The discussion emphasizes the issues of forest concessions and forest conversion to oil-palm plantations and their impact on the livelihoods of local communities. These issues will be discussed with reference to Pasir district in East Kalimantan, which was chosen as a study area because it illustrates all the relevant issues and developments in Indonesia's forestry sector, in the following ways:

- Pasir is one of 13 districts in East Kalimantan, the Indonesian province that is richest in forest. Its forests have been logged since the beginning of the economic development push in the 1970s. Most of its natural forests have been destroyed or are heavily degraded; all that remain are small, scattered pockets of forest, most of which are classified as conservation or protection forest.
- Pasir started to convert forest areas into oil-palm plantations earlier than the other districts in Kalimantan. This thrust has intensified since the beginning of regional autonomy.
- Local communities in Pasir district have a long tradition of using forest resources for both socio-cultural and economic purposes. Trends of forest utilization and/or forest conversion not only provide an interesting picture of the impacts on resource management and communities' livelihoods, but also reflect the importance of land tenure.

METHODOLOGY

Data and information were collected and compiled through secondary data exploration and document studies in Pasir district (reports, project/programme documents, previous research data, etc.), combined with primary data gathered from interviews with key informants, government and

non-governmental organizations and local communities. Field observations were conducted to obtain a better understanding of field realities.

The collected data were analysed according to the study's objectives. Literature and other references were used to enrich this analysis with theoretical and empirical background.

Forestry, land tenure and poverty

LAND TENURE AND FOREST LAND CLASSIFICATIONS

Article 33 of the Indonesian Constitution of 1945 states: "Branches of production which are important for the State and which affect the lives of most people, shall be controlled by the State. Land and water and the natural riches therein shall be controlled by the State and be made use of for the greatest welfare of the people." This gave the Government of Indonesia authority to control, regulate and manage forest land and resources, which was reiterated in Agrarian Act No. 5/1960 (Section 2; Article 1).

In 1966, the government established the Ministry of Agriculture to manage forest land and resources according to the provisions and implementing regulations of Basic Forestry Law No. 5/1967. Based on Article 7 of this law, the Ministry of Agriculture gazetted forest land as official/State forest land. Deforested land could be included as official forest land area if it was designated for reforestation.

By gazetting the land, the government basically declared all forest land other than that in private ownership or governed by traditional community rights to be State land. Private ownership is proved by personal landownership certificates or specific institutions, a few of which the government acknowledges as being equivalent to communal permanent rights, such as customary land. Traditional community rights – as stipulated in Agrarian Act No. 5/1960 – are acknowledged only when they apply to traditional groups with functioning social structures and institutions and clearly defined traditional territories, which are officially supported by local administrative authorities. For many local communities, these conditions are practically impossible to satisfy, so their traditional and access rights to forest resources have been dramatically reduced or even abolished, especially outside Java.⁴⁴

Systematic implementation of the Basic Forestry Law did not begin until 1980, with the Ministry of Agriculture's Consensus Forest Land-Use Plan (CFLUP). In 1981, the ministry issued a set of guidelines and ministerial decrees determining which forest land was to become permanent forest and which could be converted for agriculture and other uses (conversion forest). Ministerial Decree No. 680/1981 divided permanent forest land into four functional classifications: protection forest, conservation areas, production forest, and limited production forest.

The CFLUP for each province was prepared by the provincial forest service and the Regional Forest Mapping and Inventory Agency in consultation with other relevant agencies in the province. The final CFLUP approved by the Governor and the Minister included maps delineating all the forest land areas in each province according to their classifications. In 1987, according to the CFLUP, of a total 147 million ha of forest land (77 percent of Indonesia's land area), 75.49 percent was permanent forest land and 24.51 percent conversion forest. Of the permanent forest land, 19.95 percent was protection forest, 13.08 percent conservation areas, 22.44 percent production forest, and 20.02 percent limited production forest (Table 1).

The CFLUP has not been fully implemented and demarcated in the field, however. Based on Spatial Planning Act No. 24/1992, each province has developed its own provincial spatial planning

⁴⁴ The intensive management of forest areas in Java following the colonial-period "*Domeinverklaaring*" policy was relatively successful in solving land tenure problems on the island (Simon, 1993).

(PSP), and these are not fully compatible with the CFLUP. Lack of skill, and the vested interests of sectors such as forestry, agriculture, mining and transmigration have resulted in overlapping and conflicting land allocations and uses between the CFLUP and the PSPs in many parts of Indonesia.

	Con serv a- tion are a	Pr ot ect io n for est	Limit ed prod uctio n fores t	Produ ction forest	Total perm anent forest	Prod ucti on fores t for conv ersio n	Tota I fores t Iand
CFLUP (1982–	19 229 498 ha	29 326 072 ha	29 437 667 ha	32 997 701 ha	110 990 938 ha	36 036 822 ha	147 027 760 ha
1987)	13.08%	19.95%	20.02%	22.44%	75.49%	24.51%	100.00%
Synchroni- zation of	20 500 988 ha	33 519 600 ha	23 057 449 ha	35 197 011 ha	112 275 048 ha	8 078 056 ha	120 353 104 ha
CFLUP and PSP 1999/2000	17.03%	27.85%	19.16%	29.24%	93.29%	6.71%	100.00%
2003*	18 154 607 ha	29 100 016 ha	16 212 527 ha	27 738 950 ha	91 206 100 ha	13 670 535 ha	104 876 635 ha
	17.31%	27.75%	15.46%	26.45%	86.97%	13.03%	100.00%

TABLE 1 Forest land areas in Indonesia

* Does not include the forest land in North Sumatra, Riau and Central Kalimantan provinces, totalling 11 108 308 ha.

The CFLUP was developed and applied in a top-down manner that did not involve local stakeholders, particularly local communities. Many long-established, forest-dependent communities suddenly found that their land had been declared State forest area, meaning that they lost their rights to the land and/or their traditional access to land and natural resources. As a result, many land tenure-related conflicts have erupted.

In 1999, the government synchronized the CFLUP and the PSPs. The Ministry of Forestry⁴⁵ began to regazette forest land areas in collaboration with local authorities, taking PSPs into account. These recalculations showed a smaller total area of forest land – of about 120 million instead of 147 million ha – 93.29 percent of which was permanent forest land and 6.71 percent conversion forest. By July 2003, the CFLUP and the PSPs had been synchronized in all provinces except North Sumatra, Riau and Central Kalimantan; a Ministerial Decree was issued stating that the adjusted boundaries are valid. Changes to forest land designation and allocation are listed in Table 1.

Once again, this exercise involved no local stakeholders, especially local communities, but only government agencies. As a result, land tenure-related conflicts have continued and increased in the five years since decentralization. Furthermore, most local communities still have no access to forest land and resources.

FOREST MANAGEMENT AND USE

Capital-intensive timber industries were established in the 1970s, especially in the outer islands, with the aim of increasing revenue from the forestry sector to support Indonesia's development programme. Concessionaires were granted forest use permits (FUPs) to carry out extensive mechanical exploitation. Since the early 1970s, hundreds of timber companies with permits have

⁴⁵ The Government of Indonesia created the Ministry of Forestry in 1983 based on Presidential Decree No. 45/1983. This ministry took over full jurisdiction for forest land areas from the Ministry of Agriculture, and has sole authority to control, regulate and manage forest lands and resources in Indonesia.

exploited production forests across Indonesia; in the early 1990s there were 580 FUPs exploiting 61.38 million ha of natural forest.

Until the early 1980s, the focus of forest exploitation was the production of logs or timber, mainly for export to East Asia; Indonesia was one of the world's major tropical log exporters. This changed between 1980 and 2002, when the forestry sector experienced both rapid and increasing structural modifications resulting from changes in government policies. One of the most important of these policy changes was the introduction of a ban on log exports, which was announced in 1980 and fully imposed in 1985. This ban led to massive development of the timber processing industry, particularly for sawnwood, plywood and veneer, with the aim of reaping greater revenue from the higher prices of processed wood. Total production of sawnwood increased rapidly from 4.8 million m³ in 1980 to 7.1 million m³ in 1985, reaching a peak of 10.4 million m³ in 1989. Plywood production also grew significantly, from 1 million m³ in 1980 to 8.3 million m³ in 1990, peaking at 9.6 million m³ in 1997 and making Indonesia one of the world's major producers of plywood.

In the mid-1980s, the government started to promote development of the pulp and paper industries. Total production of pulp increased continuously from 0.5 million tonnes in 1985 to 3.1 million tonnes in 1997, reaching 5.0 million tonnes in 2002. Paper production also grew significantly from 0.5 million tonnes in 1985 to 4.8 million tonnes in 1997 and 7.2 million tonnes in 2002.

The rapid development of the forest industry and the continuing exploitation of timber for domestic use put massive pressure on Indonesia's natural forests and caused the degradation of large areas of forest and a scarcity of raw materials (timber). In order to secure wood supplies for the timber industry and reduce the dependency on natural forests, the government started to promote the establishment of industrial timber estates (ITEs) in the mid-1980s. Large tracts of forest land, particularly in Sumatra and Kalimantan, have been converted to ITEs; in 2003, 96 ITE concessions were developing about 4.4 million ha.

During the 1990s more intensive forest and land conversion took place with the development of oil-palm plantations (Casson, 2000; Wakker, Van Gelder and Telapak Sawit Research Team, 2000). Oil-palm was selected as a suitable crop because it is ecologically adaptable and economically productive. By the end of 2000, there were about 4 million ha of new oil-palm plantations across Indonesia.

A decade of overutilization, followed by conversion to ITEs, oil-palm plantations and other uses and accompanied by regular forest and land fires, mainly for land clearing (Gouyon and Simorangkir, 2002), have destroyed vast areas of natural forests in Indonesia. At the beginning of the twenty-first century, an estimated 60 million ha of forests were degraded, and the annual deforestation rate ranged from 1.6 to 2.3 million ha (Table 2).

TABLE 2

No.	Type of land and degradation	Area affected (ha)
1.	Critical lands outside forest areas	15 106 234
2.	Critical lands inside protection forests	8 136 646
3.	Degraded forests:	
	(a) in FUP areas	11 659 109
	(b) in ex-FUP areas (State-owned enterprises)	2 591 184
4.	Logged over areas:	
	(a) in FUP areas	11 085 823
	(b) in ex-FUP areas (State-owned enterprises)	2 498 242
5.	Destroyed mangrove forests:	
	(a) inside forest areas	1 712 462
	(b) outside forest areas	4 189 512
	Total	56 979 212

Official estimates of deforestation and land degradation in Indonesia, 2000

Source: Directorate of Land Rehabilitation and Social Forestry and Agency for Forest Planning, Ministry of Forestry, 2000.

According to Forest Watch Indonesia (FWI/GFW, 2001), 60 percent of the lowland forest on the three main islands of Sumatra, Kalimantan and Sulawesi was massively exploited between 1985 and

1997; unless conservation efforts are made, this forest will have disappeared by 2010. In Kalimantan alone, 20.5 million ha of degraded forest had already been identified at the beginning of the 1990s, 8.9 million ha of which was in East Kalimantan.

CONTRIBUTION OF FOREST MANAGEMENT/UTILIZATION TO LOCAL LIVELIHOODS

Long before independence in 1945, forests played an important role in the lives of Indonesian traditional communities. In many parts of the country, forest-dependent people had occupied forest land for many generations, managing and utilizing its resources not only for their own socio-cultural and subsistence needs, but also as sources of cash income for improved well-being. According to the Center for International Forestry Research (CIFOR, 2004), about 50 million people out of Indonesia's population of more than 200 million currently live in forest areas, and 20 million in villages near forests.

The government's exploitation and conversion regime of recent decades has changed the situation for local communities in many parts of Indonesia. Rather than improving their livelihoods, massive forest exploitation has destroyed their environment and denied them access to resources. There are two underlying causes of this. First is the overwhelming problem of unclear land tenure, which was inherited from the colonial period and has not been resolved. The government has allocated forest lands in a top-down manner, ignoring the existence of local communities and their traditional rights to and rules over forest resources. Second, according to Agrarian Act No. 5/1960 and Forestry Act No. 5/1967, the control, regulation and management of forest land are solely in the hands of the government, and are based on the issuance of utilization permits to private companies (for timber and plantations) with very limited space for the participation or involvement of local communities.

The extensive utilization of forests by timber and plantation companies has not brought benefits for local communities. Some community members earn money working for the companies, but generally they are only "silent watchers" to the companies' logging and conversion activities in their traditional forests.

In response to this, and to the increasing number of conflicts since the early 1990s, the government started to insist that timber and plantation companies develop and implement Forest Village Development Programmes (FVDPs) that support and assist agrarian and non-agrarian activities in local communities. This was expected to result in companies contributing to local livelihoods.

The programmes did not meet this expectation, however. Most of the companies were not seriously concerned about the livelihoods of local communities, and implemented FVDPs only to comply with government rules. In addition, the programmes were assessed on the basis of how much money the companies allocated to local communities, and not the actual activities that were carried out. Most FVDPs did not address the needs and demands of local communities for long-term, sustainable local development, but instead created only short-term income opportunities and developed infrastructure such as houses, churches and mosques. Sardjono *et al.* (1998) evaluate the implementation of FVDPs in six large-, medium- and small-scale FUPs in East Kalimantan.

Other, more specific reasons for forest policies' limited positive impact on community welfare are given in Table 3. Because most local communities are poor, and rural areas have not developed much, conflicts between local communities and private companies are becoming more intensive and extensive. Under the very powerful and authoritarian New Order regime, these problems were suppressed by a government that favoured the private sector.

Forestry policy/phase	Reasons for limited impact		
Natural forest exploitation/FUPs Since the early 1970s	Most mechanical forest exploitation activities are capital-intensive and need skilled workers (e.g., for tree felling with chainsaws and bulldozers); they are therefore beyond the capacity of local communities.		
	The regulations of many companies limit the activities of local communities inside concession areas (e.g., forbid collection of forest products and shifting cultivation).		
Timber/wood industries Since the mid-1980s	Almost all factories are located near big cities, distant from rural areas and communities.		
	The modern technology used by timber companies offers few opportunities for those with higher education (especially younger generations) to participate.		
	There is a lack of employment opportunities.		
	Urban migration for better jobs generally leaves only children, women and old people in the villages.		
ITEs Since the late 1980s	Negative perceptions of local communities (who are seen as lacking education, being lazy, and holding fast to traditional culture) mean they lose out when competing with migrants for jobs in tree plantation companies.		
	The establishment of ITEs depends on legal aspects only (via permits from the central government).		
	ITE activities do not involve local institutions and frequently overlap or conflict with local interests.		
	Poor communication with local communities causes the misperception among them that ITEs cause only the destruction of potential natural forests.		
Rural development programme/FVDPs Since the early 1990s	The concept was developed top-down and based on the misperception that local communities are the main cause of forest destruction so should be controlled and their aspirations minimally adopted.		
	Replacing local communities' reliance on forest with physical facilities increases their dependence on external bodies.		
	Most timber companies focus on financial and profit margin aspects, and have little concern for social issues.		
	The programme was not properly integrated into the wider regional development programmes of local governments.		

TABLE 3
Factors in the limited positive impact of forestry policies on the welfare of local communities

Sources: Sardjono et al., 1998; Sardjono, 2004a.

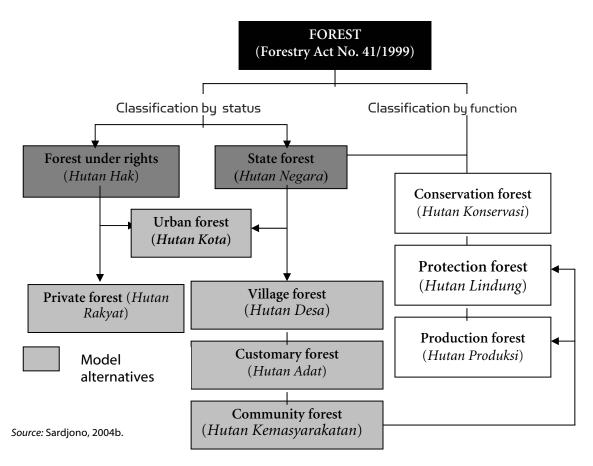
After the reform

The forestry sector reform that started in 1999 was partly a response to heavy pressure from community groups demanding change, particularly the recognition of traditional law and greater clarity about local communities' forest use rights and involvement in forest management.

The new Forestry Act of 1999 theoretically provides more space for people to participate in the management of State forests without disturbing predetermined forest functions. In addition to systems for large-scale logging (FUPs, etc.), five community-based forest management models have been developed: private forest; urban forest; village forest; customary forest; and community forest. Private forest is forest under personal/private rights, urban forest can be either private or State forest, and the other three models are all State forest; only protection and production forests have been allocated to these models (Figure 1).

FIGURE 1

Forest management models for local community participation



Currently, the implementation of only three of these five models has the legal backing of a government regulation or a ministry decree: private forest, community forest and urban forest.

Customary and village forest have no legal basis or framework.⁴⁶ This is probably for three reasons: (1) the establishment of village or community forest implies recognizing local communities' rights over land and resources, which the government is reluctant to do; (2) recognizing the rights of some community groups (villages or traditional communities) would lead to other groups claiming recognition, which could reduce State control over resources that are considered important capital for the country or region; and (3) horizontal conflicts among community factions or groups could break out because land tenure is still unclear. This third reason results from the artificial development of the village as the lowest administrative and political structure of governance, based on acts No. 5/1974 and No. 5/1979. Village boundaries have been set without taking into account the traditional land boundaries of community groups. As a result, some communities have lost their traditional land, because it has been assigned to other villages, or several different groups have traditional rights over the same land and resources. In addition, since the implementation of regional autonomy, many new provinces and districts have been established by dividing existing ones. This has also led to conflicts among provinces/districts claiming the same forest resources.

The following chapter illustrates these developments with a case study from Pasir district, East Kalimantan.

⁴⁶ The government drafted a Government Regulation for Customary Forest in 2002, but this has not been officially issued.

Implications of forest resource use and land conversion policies in Dasir district

BIOPHYSICAL AND SOCIO-CULTURAL ASPECTS

Pasir district is one of 13 districts in East Kalimantan province and covers a territory of approximately 11.6 km^2 , of which 10.6 km^2 is land.

The administrative boundaries of the district are as follows:

- North: West Kutai and North Penajam Paser districts;
- South: Kota Baru district (South Kalimantan province);
- West: Central Kalimantan province, Tabalong district (South Kalimantan) and North Hulu Sungai (South Kalimantan);
- East: North Penajam Paser district and Makasar Strait.

Most of the district – 69.52 percent or about 967 100 ha – is low-lying land of 0 to 1 000 m above sea level (asl). The remaining 424 100 ha (38.48 percent) is mountainous. The highest mountain is Gunung Lumut (1 183 m asl), which has been declared a protection forest because it has a significant hydrological role in protecting several water catchments. Pasir has four water catchments: Kandilo, Telake, Big Apar and Kerang. Most soil in the district, and in other districts in the province, is acidic, low-fertility red-yellow podsole.

The climate is humid (70 to 85 percent humidity) with average annual precipitation of more than 2 000 mm. The natural vegetation is tropical rain forest, but after a decade of forest exploitation, and owing to the shifting cultivation and slash-and-burn agricultural practices of the local community, many parts of the district are now secondary forest or unproductive land, especially grassland.

The population of Pasir was 176 608 in 2004, with annual growth over the last three years of 1.2 to 2.4 percent, compared with the province's 4 percent. The population is unevenly distributed across ten sub-districts, with population density ranging from 4 to 134 people/km² (Table 4).

No.	Sub-district		Population	Density
		Area (km²)	(no.)	(people/km²)
1.	Batu Sopang	1 111.38	11 002	9.90
2.	Muara Samu	855.25	3 424	4.00
3.	Batu Enggau	1 507.26	8 643	5.73
4.	Tanjung Harapan	714.05	6 236	8.73
5.	Pasir Belengkong	990.11	20 239	20.44
6.	Tanah Grogot	335.58	45 254	134.85
7.	Kuaro	757.30	19 120	25.59
8.	Long Ikis	1 204.22	30 956	25.74
9.	Muara Koman	1 753.40	10 137	5.78
10.	Long Kali	2 385.39	21 375	8.78
Total		11 603.94	176 426	15.20

TABLE 4Population and population density in Pasir, 2004

The local communities of Pasir consist of two groups: local indigenous people, called the Orang Paser; and migrants, especially from Java and south Sulawesi, many of whom came through the

government's transmigration programme. The Orang Paser are believed to be descendants of Central and South Kalimantan Dayaks, who are the indigenous people of Kalimantan (Riwut, 1979; Heriyanto, 2004).

LAND USE AND ALLOCATION IN PASIR

Table 5 shows land-use classifications for Pasir, based on official data from the district government.

TABLE 5 Land use in Pasir, 2005

No	Land use	%	Remarks
1.	Settlement	1.08	
2.	Agriculture	3.85	Including animal husbandry
3.	Crop estate	8.21	Mostly oil-palm
4.	Fish pond	0.37	
5.	Forest area	84.37	State forest
6.	Unproductive land	2.13	Bush, <i>Imperata</i> grassland and other bare land
Total		100.00	

Source: Annual Statistics of Pasir District, 2005.

Forest areas cover almost 85 percent (or about 980 000 ha) of the district's total land area, and are all categorized as State-owned. Only 54 percent of the forest area is designated permanent forest for protection, conservation and production. The remaining 46 percent is under local government responsibility and can be converted to different land uses, including oil-palm plantations.

TABLE 6	
Forest functions and zones in Pasir, 2005	

Forest function	Forest zone	Area (ha)
Protection forest	S. Kendilo–G. Ketam	45 462
	Gunung Lumut	35 350
	Hilir S. Sawang	25 910
	Sungai Samu	10 230
	Subtotal	116 952
Nature reserves	Teluk Adang	62 402
	Teluk Apar	46 900
	Subtotal	109 302
Limited production forest	Hulu S. Toyu	36 590
	Hulu S. Kendilo	43 870
	Hulu S. Payang	22 760
	Hulu S. Sawang	42 130
	Subtotal	145 350
Production forest	Sungai Toyu	55 240
	Sungai Kuaro	128 925
	Sungai Samu	386
	S. Kendilo–S. Biu	6 690
	S. Segendang–S. Samu	65 885
	Subtotal	257 126
Total permanent forest areas	1	626 730
Total non-permanent forest areas		531 664
	Total forest area	1 160 394

Source: Pasir Forestry Service, 2005.

These land classifications do not reflect the situation on the ground, however. Local communities have claimed many parts of the district as traditional lands, which have been regulated by traditional rights since long before they were declared State land, and even since before Indonesia became independent in 1945. For instance, Pasir Kingdom occupied areas of Pasir district and South Kalimantan since the sixteenth century (Wijaya, Effendi and Herlina, 2005), and granted many community groups and/or individuals the right to manage or occupy certain pieces of land as gifts for their services. Many community groups have occupied land communally for centuries, using natural markings as territory boundaries (Heriyanto, 2004).

Traditional communities' occupation of the land usually consisted of opening up primary forest for farmland, or hunting and collecting products in forest areas. Under communal rights, individual community members have access or use rights to land, which is supposed to be returned to communal ownership when it is no longer used (Sardjono, 2004a). However, many individual users try to occupy communal land permanently, or for as long as possible, especially since population increase has intensified the competition for resources. These users therefore cultivate valuable tree crops such as fruits and rattan on the land they occupy.

The situation became more complicated when the government declared all uncertified forest area as State forest under Agrarian Act No. 5/1960. Almost all traditional forests were taken over, and local communities lost their access to and rights over community forest. Certified rights to land were granted for only 20 years, so certified forest land was meant to be returned to the State in 1980. Many community groups in Pasir district retained their land, however, and the confusing landownership and rights regime has led to many land tenure conflicts. In 2003, creation of the new Paser Penajam Utara district on one-third of Pasir's territory in the north exacerbated the situation.⁴⁷ Many of the lands belonging to specific community groups or families have been divided according to the new administrative units.

DEVELOPMENT OF FOREST RESOURCE POLICY IN PASIR

Before decentralization

Pasir's early economic development was firmly based on its natural resources, especially the production and conversion forests that cover most of the district's territory. Following the expansion of timber exploitation in the 1970s and introduction of the FUP system, there were at least 11 timber companies operating on approximately 1.2 million ha of forest – about 60 percent of Pasir's territory – until the mid-1980s.⁴⁸

Since the 1998 reforms, however, only three timber companies have been operating on a total of about 245 000 ha.⁴⁹ There are four main reasons for this reduction in the number of FUPs: (1) the government revoked the FUPs of most timber companies in Pasir because of unsatisfactory performance;⁵⁰ (2) the timber export ban of the early 1980s halted the activities of companies that mainly produced logs for export and/or did not have wood processing facilities; (3) some timber companies could not continue their logging operations because of increasing problems/conflicts with surrounding local communities; and (4) the forest area with good timber stock had declined dramatically.⁵¹ Forest harvesting is no longer lucrative or economically feasible, so most timber companies – both long-established and new – have either stopped altogether or moved to other parts of Indonesia.

⁴⁷ The creation of new districts and provinces is a controversial issue. Some claim that it leads to better administration and boosts local economic development; others see it as helping local elite groups to gain more power and greater access to natural resources.

⁴⁸ More than 11 FUPs were operating in Pasir district, but as these were registered in Balikpapan they were counted as being Balikpapan FUPs. At this time, i.e., prior to its division into two districts in 2003, Pasir district covered about 2 million ha.
⁴⁹ In addition to the FUPs, there were also three ITE companies managing about 32 000 ha of plantation forest in Pasir.

⁵⁰ FUPs are granted to companies for 20 years, which can be extended for another 20 years subject to satisfactory evaluation from the Ministry of Forestry.

⁵¹ Timber companies can only cut trees with minimum diameters of 50 cm (in production forest) or 60 cm (in limited production forest).

Impoverishment of the forest area and timber stock is basically a result of unsustainable and/or illegal harvesting practices by the timber companies. Many companies harvested more timber than the government allowed and/or operated in areas outside their concession boundaries (District Forest Agency, personal communication). Other large tracts of forest have been converted to oil-palm plantations (see the following chapter) and/or are used by communities for agricultural activities such as shifting cultivation and crop plantations.

Sardjono (2004c) points out that "intractable" conflicts usually arise over the accumulation of several factors, most of which are rooted in the insecurity and unfairness felt by local communities living in and near forests. The main factors leading to conflict are: communities' loss of forest area and living space on land that is licensed as concession areas; the limiting of community activities in concession areas, particularly shifting cultivation and the collection of non-timber forest products (NTFPs) such as rattan, aloe wood and honey; lack of communication between communities and companies, owing to differences in economic orientation, education, etc., which lead to misunderstandings and distrust between the two groups; minimum benefits from the companies for local communities, both financially and in terms of employment provision, as companies prefer to recruit migrant/external workers; encroachment into local communities' traditionally protected and sacred sites; and deforestation and its impacts on the rural agro-ecosystem, such as erosion and increased river pollution.

Table 7 describes the interaction between companies' and local communities' forest use – including the resulting conflict – in Tiwei and Long Gelang villages in Pasir district between 1971 and 2004. During this period, timber companies with government-issued FUPs were logging on lands that included villages' traditional land. The local communities' traditional rights over their land were ignored, and they received practically no direct or indirect benefits from the companies' activities. At the time, local communities had no opportunity to protest or claim their rights, because the government backed the companies for economic reasons. When the companies started to withdraw in the first half of the 1980s, parts of the former concession areas were assigned to oilpalm plantation companies, again without consulting local communities, and ignoring their rights and needs. At the same time, however, local communities started to occupy other parts of the former concession areas, which they logged illegally. As soon as the reform process started in 1998, conflicts among local communities over the remaining forest land and resources escalated. Illegal activities, such as illegal logging, sawmills and timber trading, have also increased steadily in all types of forest, especially in logged over parts of former concession areas. Ex-FUP areas, which are legally still State forests, are effectively open-access areas for all users.

TABLE 7

Year	Events
1971	FUP Alas Kusuma (concession holder no. 438/Kpts/Um/9/73; with a total concession area of 135 000 ha) started to develop a corridor road for timber transportation from a log pond at Lombok River, crossing the customary lands of Tiwei and Long Gelang villages.
	The company continued to develop the corridor road across the area of another concession, FUP Nata Marga Jaya (concession holder no. 661/Kpts/Um/10/79; with a total concession area of 40 000 ha), which also overlapped with the customary land of Tiwei.
	Tiwei villagers claimed compensation. At the time, their bargaining position was very weak (the government supported the FUP as a source of national income) and they were compensated only for plants growing on the corridor road. The compensation (equivalent to about US\$350) was used to repair community houses.
	The people of Long Gelang shifted their village to the corridor to improve access to their farmland.
	FUP Alas Kusuma established its base camp in Tiwei village.
1973	To remain close to its logging area, Alas Kusuma moved its base camp to Tompuk (formerly in the area of Palembakan village).
1974	FUP Inne Dong Hwa (concession holder no. 141/Kpts/Um/4/71; with a total concession area of 120 000 ha) used the corridor road, without any knowledge of the compensation to local communities.
	Tiwei people moved their village to the ex-base camp of Alas Kusuma.
1979	Based on Act No. 5/1979, both villages were definitively declared villages.
1983	Following the log export ban of the Ministries of Agriculture, Industry, and Trade, the activities of Alas Kusuma and Inne Dong Hwa collapsed, because both companies focused on timber production for export.

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1983	State-owned enterprise PTPN XIII mapped the area of Tiwei for the development of oil-palm plantations within the framework of a nucleus estate programme.
1984	The FUPs abandoned their concession areas.
1984 to	With no maintenance, the corridor road became overgrown and was practically unused.
1986	Tiwei villagers collected the abandoned FUP heavy equipment, spare parts and other unused iron materials, selling it for about US\$0.15/kg.
1986	The local government started to develop the PIR oil-palm plantation in Tiwei.
1987/1988	Transmigration around Long Gelang, within the framework of commercial crop estate development, led to conflict. Local communities made a claim to central government because their farmlands were being taken over and converted into settlements and estates. The local government gave no compensation to the people of Long Gelang.
1992	FUP Nata Marga Jaya continued its timber operations.
1994/1995	Boundary (horizontal) conflicts broke out between the neighbouring villages of Tiwei and Long Gelang.
1997/1998	About 140 transmigrant families were settled in Tiwei village area to support the establishment of an oil-palm plantation.
1998	Illegal logging by outsiders, mostly from the nearby sub-district capital of Long Ikis (and reportedly not local people), started in the area. The illegal loggers' heavy trucks destroyed the corridor road.
	Following reform at the beginning of 1998, people in Long Gelang reclaimed their land that had been used for transmigration settlements and crop estates.
1999	FUP Nata Marga Jaya stopped its logging operations because there were no more commercially allowable trees to cut on its lands.
2002	The government's rehabilitation programme (through the district forestry service) distributed Jati (teak) and fruit trees to Tiwei villagers.
2004	Illegal logging activities have increased and at least three illegal sawmills have been established in the surrounding area.

Source: Heriyanto, 2004.

After decentralization

Following decentralization and regional autonomy in 2001, the forest management system completely changed. Before decentralization, only the FUP system was implemented, and all permits were issued through the central government. Since decentralization, local governments can issue timber forest product use permits (TFPUKs), but the annual allowable cuts (AACs) for timber companies with FUPs and TFPUKs are still determined by the central government. A company that has received a TFPUK from the local government cannot operate or harvest the forest until it has received an AAC from the central government.

So far, four companies in Pasir district have TFPUKs, with very limited concession areas totalling less than 140 000 ha. Only one of these companies was granted an AAC for 2005 and so can operate. This situation is a result of the government's "soft-landing" policy of 2004, which aims to conserve the forest by reducing the number of FUP holders (especially poorly performing ones) and/or AACs. Unfortunately, data for Pasir district regarding implementation of the soft-landing policy are not available, but the policy's effect on timber companies and their AACs can be seen from the data for East Kalimantan province in Table 8.

Year	Number of FUPs	AACs		Remarks	
		Area (ha)	Volume (m ³)	Remarks	
1987	79	180 537.00	13 100 000	Before implementation of the policy. The estimated volume is based on the average volume of commercial trees in East Kalimantan: 73 m ³ /ha.	
2004	39	46 245.96	1 555 000	After implementation of the policy. The government issued nearly all of these AACs in the middle of 2004, which was considered a political move in the lead-up to the presidential election of September 2004.	

TABLE 8 Effect of the soft-landing policy on FUPs and AACs in East Kalimantan

Since decentralization, as well as FUP permits for log production forest, the central government has also issued a new utilization permit, called a timber use permit (TUP), for private and State-owned commercial crop plantation companies. These permits allow companies to exploit (clear-cut) remaining residual stands to establish crop plantations. TUPs are also granted for exploiting the timber in forests in mining areas and in burnt-out areas (following forest fires) – when there are still some relatively good stands that can be cut. This is known as salvage logging. In 2004, there were three TUP companies in Pasir.

In general, therefore, the decreased number of FUP holders over the last decade has not necessarily led to decreased volumes of timber being removed from the forests of Pasir. Timber is also produced by TFPUK and TUP holders (Table 9). In addition, a lot of timber has come on to the market from illegal logging activities, as described in Table 7.

No.	Name/type of company	Area (ha)	Timber volume (m3)	Remarks
1.	Inhutani II/forest company	6 880	35 182	Forest in mining area (Kideco Jaya Agung) Extension permit
2.	Bintang Jaya Intercakrawala/ estate company	501	29 360	Forest area to be converted to commercial crop estate (Bintang Jaya Intercakrawala)
				Additional quota
3.	Bumi Mitratrans Marjaya/ estate company	6 000	217 520	Forest area to be converted to commercial crop estate (Bumi Mitratrans Marjaya)
				Extension permit
	Total	13 381	282 062	

TABLE 9	
Development of TUPs and timber volumes in Pasir, 20	04

Source: Pasir Forestry Service, 2003.

The new TUP policy created a new trend for companies to propose developing commercial crop plantations in Indonesia. Based on experiences in many parts of the country, however, implementation of the TUP system brings ecological and social problems because many TUP holders do not establish plantations after clear-cutting tree stands. They merely cut the timber and leave degraded or even bare land behind, often causing ecological damage. Some TUP holders use fire when preparing land for plantations, and this can lead to uncontrolled forest fires and haze pollution.

DEVELOPMENT OF OIL-PALM PLANTATIONS

Pasir is East Kalimantan's pioneer district in establishing large-scale commercial crop plantations as an economic solution to decreasing forest resources. Plantation expansion started in the early 1980s and has continued to increase. In 2004, Pasir's commercial crop plantations covered approximately 74 000 ha (Table 10), mostly on converted production forest land (or non-permanent forest areas under regional spatial planning classifications). The main commodities grown on these estates are oil-palm and, less extensively, rubber, hybrid coconut, coffee, pepper and cocoa. Since regional autonomy in 2001, local governments have administered commercial crop plantations.

No.	Commodity	Planted ar	lanted area (1 000 ha)					
NO.	Commonly	1999	2000	2001	2002	2003	2004	(%)
1.	Oil-palm	56 239	56 901	62 657	64 059	56 224	58 641	79.6
2.	Rubber	14 507	14 542	13 992	13 992	6 387	6 349	8.6
3.	Hybrid coconut	9 585	9 585	9 585	9 585	4 487	4 115	5.6
4.	Coffee	4 740	4 740	4 740	4 740	3 058	3 001	4.1
5.	Pepper	665	1 747	1 785	1 810	182	188	0.2
6.	Сосоа	1 574	1 574	1 574	1 574	902	890	1.2
7.	Others	598	598	598	598	440	414	0.7
	Total	87 909	89 668	94 933	96 360	71 680	73 649	100.0

TABLE 10 Development of commercial crop plantations in Pasir, 1999 to 2004

Note: The area of commercial crop plantations decreased in 2002/2003 after North Penajam Paser district was established.

Source: Anonymous, 2005.

These plantations are unequally distributed across subdistricts, with larger-scale plantations in the five subdistricts of Long Ikis (23 553 ha), Pasir Balengkong (12 071 ha), Long Kali (11 522 ha), Kuaro (10 296 ha) and Muara Engau (9 400 ha).

Between 1999 and 2004, oil-palm production increased from 337 39 to 389 337 tonnes, even though almost one-third of the district's land area was lost when Paser Penajam Utara district was established in 2003.

The situation regarding ownership of the plantations has changed noticeably over the last decade. Until the mid-1990s most plantations were owned and managed by State and private companies, but at the end of 2004, 66.46 percent of crop plantations were managed by local people under the smallholder estate scheme,⁵² which supports more than 17 000 families, representing between 58 000 and 85 000 people (Tables 11 and 12).

Field observations and interviews show that many communities are increasingly interested in participating in the smallholder model, because it gives individuals the possibility of claiming land that was formerly State forest. Other groups of villagers, especially those with an interest in conserving customary ownership, do not support the scheme, however. They are willing to participate in oil-palm plantations as a way of increasing their family incomes, but only if the land remains under community control. These contradictory views often lead to conflicts among different community groups and/or villages.

TABLE 11

No.		Area (1 000 ha)			
	Commodity	Smallholder estate	Government- owned estate	Private company estate	Total
1.	Oil-palm	34 745	13 526	10 370	58,641
2.	Rubber	5 740	399	210	6 349
3.	Hybrid coconut	4 155	-	-	4 115
4.	Coffee	3 011	-	-	3 001
5.	Pepper	188	-	-	188
6.	Сосоа	690	-	200	890
7.	Others	414	-	-	414
Total		48 944	13 925	10 780	73 649
(%)		66.46	18.91	14.64	100.00

Source: Anonymous, 2005.

⁵² Most of the smallholder estates developed by local communities are on their customary land; they form part of and are supported by larger plantation companies (District Plantations Agency, personal communication).

No	Subdistrict	Plantation area (ha)	Participants (families)	Average managed farmland/family (ha)*
1.	Batu Sopang	299.50	104	2.9
2.	Muara Samu	110.00	31	3.5
3.	Batu Enggau	8 345.17	300	27.8
4.	Tanjung Harapan	1 070 00	36	29.7
5.	Pasir Belengkong	10 535.50	2 972	3.5
6.	Tanah Grogot	910.00	536	1.7
7.	Kuaro	8 410.06	4 043	2.1
8.	Long Ikis	22 157.14	7 640	2.9
9.	Muara Koman	381.00	256	1.5
10.	Long Kali	6 423.00	1 229	5.2
Total		58 641.37	17 147	3.4

TABLE 12	
Local people's participation in oil-palm plantations in Pasir, 2004	

* Calculated by dividing the plantation area by the number of participants.

IMPLICATIONS ON LOCAL RESOURCES AND COMMUNITIES

Local community livelihoods

As discussed in previous chapters, the government policies for the forestry sector of the last three decades – particularly before decentralization – did not contribute much to local livelihoods.

Over the last five years, however, since decentralization and the extensive development of oilpalm plantations, the situation seems to be changing slowly. The numbers of local people involved in the oil-palm sector, and the area of oil-palm plantations in Pasir have increased significantly. This is particularly because oil-palm provides local communities with more income, more quickly than other options (timber and NTFPs), as a rough calculation of the possible income from oil-palm, based on data in Table 12, shows:

Assuming that average production reaches 7 298 to 8 492 kg/ha at 607.72 rupiahs (Rp)/kg (Disbun Pasir, 2005), each family can earn between Rp15 080 366 to Rp17 545 648 per year (or about Rp1.25 to Rp1.50 million/month). If each family has an average of five members, the income earned is between Rp250 000 and Rp300 000/person/month. (US\$1 ~ Rp9 000 in 2004.)

That oil-palm plantations are profitable for local communities was indicated by the fact that three of the four villages visited for this study proposed developing oil-palm plantations by converting forest areas, although NTFPs (rattan, aloe wood, honey, etc.) still play an important role in livelihoods.

Oil-palm plantations also make an important contribution to Pasir's regional GDP. In the last five years, about 80 percent of this has come from the mining and agriculture sectors (Table 13). In the agriculture sector, logs and particularly oil-palm products (oil) are the dominant commodities, representing 90 percent of the material uploaded at Pasir harbour (TKKPD, 2005).

Sector	1999	2000	2001	2002	2003
GDP (Rp1 000)	1 219 255 306	1 410 780 723	1 715 706 308	1 855 028 786	1 998 758 382
Population	N.A.	267 960	273 495	169 932	176 426
GDP/capita (Rp)	N.A.	5 264 893	6 273 263	10 916 300	11 329 159

TABLE 13	
Growth of regional GDP in Pasir valued at current prices, 1	999 to 2003

N.A. = no data available.

Oil-palm plantations will obviously play a more important role for the district in the future. The local government plans to make agribusiness (and agro-industry) the core of the district's economic activities, and has reserved approximately 250 000 ha for the expansion of oil-palm plantations (TKKPD, 2005). This indicates the economically promising future of that commodity in Pasir, and the possibility of greater participation for local people.

This development will also affect the district's remaining forests, however. Because most agriculture areas in Pasir district are already being used, the expansion of plantations will probably entail the conversion of forest or logged over areas. This will intensify the destruction and degradation of remaining forest, including the approximately 226 000 ha of conservation and protection areas.

Land tenure conflicts

As already described, there is much potential for land tenure conflict in Pasir owing to a longstanding lack of clarity over ownership and rights to land, particularly regarding local communities' traditional rights to land and natural resources. These conflicts did not emerge before decentralization because they were suppressed by the powerful and centralized New Order regime (1967 to 1998). During that period, although many local communities lost their traditional access to land and resources because of intensive and extensive timber exploitation, the development of ITEs and the conversion of forest to oil-palm plantations, they rarely voiced their protests or objections to government policies.

After reform and regional autonomy, the socio-political situation changed and resource use became more democratic. As a result, land tenure-related conflicts between government/companies and local communities and among local community groups have increased significantly in Pasir district, as elsewhere in Indonesia. Conflicts among community groups have taken on a particularly worrying dimension, with many physical fights between community groups breaking out in Pasir in recent years. These conflicts are usually caused by unclear boundaries or the incompatible traditional claims of two (or more) community groups or villages. Conflicts have also arisen because of different interests in using the same piece of land/territory among the members of one community. The situation is exacerbated by a scarcity of natural resources and Indonesia's currently poor economy, weak governance and lack of law enforcement.

As an example, Table 14 describes the forest exploitation and large-scale establishment of oilpalm plantations in Tiwei and Long Gelang villages, Long Ikis district.

It can be concluded that forest utilization policies based on the timber management system and the conversion of permanent and non-permanent forest land to plantations have not yet led to better resource management and poverty reduction. In Pasir, intensive timber exploitation in recent decades has created extensive areas of degraded land and unproductive forest. The remaining relatively good protection forest and conservation areas are under pressure from different uses, including land encroachment and illegal logging. In 2004 alone, for example, 41 800 m³ of illegal logs and sawntimber were confiscated. This is far more than the average volume of legal log production for the district between 2001 and 2003 - 36 100 m³ – and approximately 15 percent of the TUPs' total timber volume for the same period (Dishut Kaltim, 2004; UPTD Kehutanan Pasir, 2005). At the same time, there have been no reports of achievements in reforestation and land rehabilitation programmes, on which Pasir spent at least Rp25.6 billion for more than 112 000 ha between 2001 and 2003.

Forest concessions have clearly not increased the welfare of local communities. Instead of experiencing a trickle-down effect, the generally very poor local communities have had to subsidize the companies (a trickle-up effect) by giving up their living space and the forests where they used to collect timber and NTFPs. Forest exploitation has attracted outsiders to Pasir, who as unemployed migrants have entered the forests to exploit NTFPs.

Description	Village	
	Long Gelang	Tiwei
Conflicts within villag	ges	
Causes	Some families occupying land surroundin the oil-palm plantations developed by government/company programmes do n want to participate in the programmes because of possible permanent loss of the land rights, which the government/companies will replace with small parcels of land (about 2 ha). They ar willing to lend the land without giving ov their rights.	claimed that village land traditionally ot belonged to them. They objected to making family land communal land for eir oil-palm plantation programmes. The compensation paid for the land was too small.
Sources	Unclear land occupation rights under traditional law, and the recent price of lar	Unclear land occupation rights under traditional law, and the recent price of land
Conflicts with other v	rillages	
Causes Causes Causes Competition over strategic land (along the main roads of villages) that was proposed for use by the oil-palm plantation programme (conflict between Long Gelang and Tiwei).		the main roads of villages) that was proposed for use by the oil-palm
Sources	Land claims between users.	Land claims among users.

TABLE 14			
Implications of oil-palm	plantations on community	y conflict in Long Gelang	and Tiwei villages

Source: Heriyanto, 2004.

Oil-palm plantations have been declared the district's core business and are extended to the grassroots level through small-scale programmes. This is probably a rational solution for forest degradation. Farmers participating in the plantation programmes are assured of income, so local communities are increasingly interested in establishing oil-palm plantations. On the other hand, the establishment of oil-palm plantations has also been used as a justification for obtaining TUPs to exploit remaining residual stands and convert communal land to individual ownership. Conflicts over land occupation among local communities and villages in Pasir have increased over the last five years (Table 14).

Proposals for the way forward

The study of Pasir district presents all the issues and problems facing the forestry sector in Indonesia, including land tenure conflict, local communities' limited involvement in forest resource management, unsustainable forest harvesting practices, and forest conversion for plantation development, all of which lead to forest degradation and destruction. Although many programmes and initiatives from a wide range of stakeholders – the government, non-governmental organizations (NGOs), and international donors and projects – have aimed to improve the situation, no significant achievements have been made so far. On the contrary, the scale and intensity of forest destruction have increased alarmingly, and vertical and horizontal conflicts among forest stakeholders have been exacerbated. There are many reasons for these developments, but land tenure is one of the most important.

This chapter suggests ways forward for policies on resource management, the involvement of local communities in forest resource management, and integrated and collaborative resource management.

POLICIES ON RESOURCE MANAGEMENT

The design and implementation of policies for land and natural resource management have generally been strongly influenced by economic interests that tend to marginalize both the interests of local communities and environmental issues. Land allocation and forest utilization policies through the FUP system and plantation development in Pasir provide a good example of this. In spite of their failure to improve local communities' livelihoods, and their contribution to the massive destruction of forest resources, these policies have not been significantly altered. Forest areas, even protected natural forests, are still being converted, particularly for agriculture to meet the needs of a growing population and to satisfy economic demands.

Converting and using forest land to satisfy people's needs is acceptable. The concern is that this may be an empty claim to cover the economic interests of certain individuals or groups. This would explain why so many oil-palm plantations in Pasir have been developed in primary and good secondary forest instead of in heavily degraded secondary forest, bush/grassland or other unproductive areas, where the income from log sales would have been far less or non-existent (Simorangkir and Sumantri, 2002).

The situation in Pasir has worsened since the fall of President Suharto in 1998 and the following issuance of Act No. 22/1999 and Government Regulation No. 25/2000, which triggered autonomy euphoria across Indonesia. Prior to this, everything was controlled from Jakarta, and provinces or districts could not make political decisions without the permission of central government, which had full control over natural resource management. While many of the profits of resource exploitation were diverted to the central government (including elite groups and individuals in Jakarta), many regions of Indonesia, particularly outside Java, were left undeveloped and poor.

Since 1998, provinces and districts have started to voice their disagreements and disappointments with the system, and are claiming more independence and rights in governing their own natural resources. However, many local governments drew up local regulations under the slogan of "Increasing real regional income for local development and improved livelihoods" merely to justify their own (and local communities') exploitation of natural resources, often at a cost to the environment. As a result of weak law enforcement and lack of central government supervision, over the last five years uncontrolled legal and illegal forest logging, encroachment and conversion of forest land, and other kinds of forest and natural resources destruction have accelerated in Pasir.

The underlying causes of this situation are stakeholders' vested interests in using forest resources, unclear land tenure and local communities' limited access to resources. Policies and regulations should be developed and implemented with the following considerations:

- Priority should be given to the reformulation/revision of Agrarian Act No. 5/1960 and other natural resources acts, which should acknowledge and accept the traditional rights of local communities over land and forest resources.
- This should be done in line with policies for the Indonesian forestry sector that focus on five priority programmes for the period 2004 to 2009:³³ (1) combating illegal logging; (2) forest rehabilitation; (3) revitalization of forestry industries; (4) development of local economies in and near forest areas; and (5) gazettement of forest areas.
- A policy for forest resource management must be developed, with clear objectives and longterm vision towards sustainable forest management. Frequent changes in government policies (particularly in Pasir) that focused on reaping as much economic benefit as possible from timber exploitation and forest conversion have resulted in the massive destruction of forest resources.
- The decentralization of authority and responsibility from the central to local governments must be implemented consistently. So far, the government has been somewhat half-hearted in its implementation of the decentralization process. Currently, for example, local governments can issue TFPUKs, but the AACs for timber companies with TFPUKs are still determined by the central government. This means that many companies with TFPUKs from local government cannot operate because they have not yet received AACs from the central government.
- The deconcentration of authority and responsibility to local governments must be accompanied by strict law enforcement and strengthened political, administrative and technical facilitation/guidance from central government, in order to minimize the risks of corruption, collusion and manipulation at the local level.
- Central government should encourage and support local stakeholders, especially district governments, in implementing existing regulations and mechanisms that can help to resolve problems at the local level. For example, the Regulation of Agrarian and Land Affairs No. 5/1999 concerns resolution mechanisms for land claims and traditional rights and gives district governments greater authority to resolve land conflicts in their territories; owing to a lack of knowledge, skills and capacity at the local government level, and to overwhelming confusion about landownership and rights, however, this regulation has not been properly implemented.

INVOLVEMENT OF LOCAL COMMUNITIES IN FOREST RESOURCE MANAGEMENT

As described in previous chapters, Indonesia's land-use and forest policies still do not promote local community involvement. The process of allocating forest land was conducted in a purely top-down manner from Jakarta, ignoring existing local systems and failing to involve local people. As a result, villagers' traditional access to forest resources has been denied, and in many cases whole communities have been relocated to make way for logging and other activities – often with help from the police and military. Under these circumstances, it is understandable that local communities should oppose development activities in their forests. Since the 1960s, many of the conflicts related to land tenure issues in Pasir have had local people on one side and the government, companies and other parties on the other.

Forestry Act No. 41/1999 superseded Forestry Act No. 5/1967 and marked the start of the forestry sector reform process. One of the main drivers of change was the heavy pressure from community groups demanding recognition of traditional law, clearly defined forest utilization rights for local communities, and community involvement in forest management. Up to now, however, implementation of the new act has not changed the situation significantly. Some parties have taken advantage of ambiguous laws and regulations to abuse the system, leaving the majority of local communities still insecure over ownership of the land and natural resources. In addition, the livelihoods of local people have not been improved. In Pasir, for example, most people still have no

⁵³ Based on Forestry Minister's Decree No. 456/2004 of 29 November 2004.

skills or financial resources other than those of their traditional way of life – collecting forest products and clearing forest land for agriculture.

A combination of poverty and lack of rights and access to land and natural resources has led local Pasir communities to ignore the principles of sustainable land and forest management. As in many other parts of Indonesia, communities in Pasir seem not to care about the environment because they have little opportunity to do so. People are also reluctant to support government programmes and activities, and participate only when they can derive direct and short-term benefits, which is not often the case.

The following are practical measures that can be taken to solve these problems:

- *Identification and recognition of traditional rights and lands:* No natural resource (forest) management activities can be properly implemented unless forest and landownership are clearly defined. It is very important to identify and recognize the traditional rights of the local communities in and near forest areas, particularly regarding landownership and access and use rights to forest resources. This creates the basis for proper land-use planning and allocation of development activities. So far, however, the government has not fully identified and recognized the traditional rights of local communities, and no district in Indonesia has a spatial plan that does not overlap or even conflict with communities' claims to land and forest.
- Development of appropriate community-based forest management models/systems: Natural resource (forest) management has to provide direct and fair benefits to local communities. At present, there are no appropriate forest management models/systems that allow local communities to control and manage forest areas and derive benefits. Although issues still need to be resolved regarding the five national-level schemes for community-based forest resource management (Figure 2), this effort is a first step towards greater community involvement in forest resource management and the development of better mechanisms for reducing land tenure conflict and poverty. Of the five schemes, the most problematic are those for village forest and community forest, because their implementation depends on developing regional regulations that are recognized and supported at the central government level. Some districts have developed their own community-based forest management systems, but most of these cannot be implemented owing to objections from the central government (Ministry of Forestry).⁵⁴
- *Empowerment of local communities:* Lessons learned from the last five years of local community forest exploitation (legal and illegal) demonstrate that communities are not yet ready to use forests sustainably. Over the last five years, deforestation in Indonesia has increased at an alarming rate and intensity, and local communities have played an important role in this negative development. As well as the lack of law enforcement and supervision from central government, the main reasons for this are communities' lack of awareness, capacity and capital. It is therefore very important to empower local communities through, for example, strengthening community organizations/institutions, building the capacity of human resources, developing networks and promoting alternative income sources. Authorities at various levels should be facilitators in this. Participation of other forest stakeholders, such as local, national and international NGOs and universities, will also have a significant influence on the success of efforts.

INTEGRATED AND COLLABORATIVE RESOURCE MANAGEMENT

Given their complexity, forest management and land-use problems cannot be solved by one party alone. Integrated and collaborative action among stakeholders is crucial. For decades, many initiatives and programmes for natural resource (forest) management and poverty reduction have been promoted and conducted by the government, NGOs, universities and international donors/projects under the slogans of "integration" and/or "collaboration". Most of those initiatives

⁵⁴ For example, West Kutai district in East Kalimantan issued a Regional Regulation on Community Forests, which the central Forestry Department requested the Minister of Internal Affairs to abolish.

and programmes have, however, failed to achieve their objective of supporting better natural resource management.

Collaboration is more than just cooperation and/or coordination. Collaboration not only involves exchanging information, developing activities and contributing resources, but also needs to increase the capacity of actors/partners in order to gain collective benefits for collective objectives. Collaborative action in resource management therefore needs bilateral matching approaches (a combination of top-down and bottom-up planning) and conflict resolution.

In Pasir, as elsewhere in Indonesia, local communities are the most numerous stakeholder group, so the focus of efforts to solve forest management and land-use problems should be on involving and empowering local communities. It should also be kept in mind that empowered people will only participate in resource management if they can derive benefits from doing so. Sardjono (2004a) mentions four keys for people's involvement in resource management: (1) people are assured of having long-term (or even permanent) rights to manage the resource or its products; (2) they can participate fully in all stages of resource management (planning, organizing, implementing and monitoring); (3) resource management will bring them greater benefits, especially where activities are on their occupied lands; and (4) they are assured freedom from political or financial pressure from other stakeholders.

These requirements indicate that collaborative action needs improved natural resource policies, as well as sufficient social management capacity and sensitivity from more powerful stakeholders, such as governments and large-scale enterprises. The three proposals for the way forward made in the previous subsection lead into each other, forming the basis for an integrated effort.

Closing remarks

The relationship between natural resources (forest) management and poverty in Indonesia is a vast subject. Not only does the country cover a huge area and have a wide range of biological and sociocultural components, but also the complex problems faced have been politically embedded and have existed for decades, creating a vicious cycle. Decentralization and regional autonomy should enable actions to be focused locally but still be thought about nationally or even globally. The case study from Pasir district reflects the real resource and community issues that have to be managed in the field. Better resource management and poverty reduction in Indonesia depend on experimenting with new proposals and assessing the results. Optimism about the future can be great capital in managing resources for an improved future.

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Trends in forest ownership, forest resources tenure and institutional arrangements: are they contributing to better forest management and poverty reduction?

Case studies from Indonesia

By Vince Deschamps The Nature Conservancy, Ontario, Canada and Paul Hartman



Summary

This paper has been prepared for the Food and Agriculture Organization of the United Nations workshop on Trends in Forest Ownership, Forest Resources Tenure and Institutional Arrangements: Are they contributing to better forest management and poverty reduction?, which was held in Bangkok, from 17 to 21 October 2005. It presents case studies from Indonesia.

Since 2001, the Nature Conservancy (TNC) has been developing collaborative management models as a forest management approach in two sites in Indonesia. Forest ownership, tenure and institutional arrangements with the Ministry of Forestry and forest concessionaires are key components of the collaborative management approach.

This paper is comprised of four sections. The first section describes the environmental, socio-economic and political contexts in which TNC and its partners operate in Indonesia.

The second section summarizes the use of collaborative management as a forest management approach and describes TNC's collaborative management initiatives in the Segah watershed in East Kalimantan and Lore Lindu National Park in Central Sulawesi, including descriptions of the project areas and forest management systems employed at each site.

The third section provides an assessment of the socio-economic and ecological health of the rural communities in the project areas in relation to their associated land-use and forest tenure systems.

The fourth section summarizes the lessons learned to date from the two case studies and provides a discussion of the effectiveness of collaborative management as a forest management approach and means of poverty alleviation. The section concludes with a list of recommendations for the way forward.

Background on forest resources ownership and trends towards community management in Indonesia

Tropical forests are important for their abilities to protect genetic diversity (IUCN, 1980), and provide for the livelihoods of rural communities (WCED, 1987). However, these forests are quickly disappearing, and community participation in managing these areas is a critical component in ensuring that they survive in the future (WCFSD, 1999). This is especially true for biologically diverse forests located outside of established protected areas. Conservation cannot succeed unless it is linked to economic opportunities and investments targeted at those whose pursuit of livelihood threatens the viability of the conservation area. The Biodiversity Plan for Indonesia (Ministry of National Development Planning/National Development Planning Agency, 1993) provides clear support for community-based forest management as one of the means whereby communities can play a critical role in the planning and management of forested areas.

FOREST TENURE

Following a legal tradition introduced by the Netherlands and modified by the Basic Forestry Law of 1967 (UU 5/1967), all forests in Indonesia, whether on public or private lands, are subject to the jurisdiction of the Ministry of Forests (Colchester, 2004).

The Ministry of Forests has the responsibility to determine which parts of Indonesia are forests and assign them to the category of forest areas (kawasan hutan), zone all these forest areas into conservation, protection or production forests and then determine which areas are rights forests and which are State forest areas through the process of gazettement. Following gazettement, the ministry then has the authority to lease concessions within State forest areas to individuals, private companies, cooperatives and State-owned enterprises. Concessionaires, in turn, then have the responsibility to survey, delineate and gazette their concessions (Colchester, 2004).

Gazettement

According to government statistics and data furnished by the World Agroforestry Centre (ICRAF), of the 122 million ha of Indonesia currently assigned as forest areas, only some 16 percent (i.e., some 19 million ha) have so far been through the process of gazettement (Colchester, 2004).

Procedures for gazetted State forest areas require concessionaires – subject to the approval of local government, local forestry officials and communities – to delineate, demarcate and register the boundaries of their concessions to ensure that they do not contradict provincial land-use plans, overlap protection and conservation forests or overlap customary areas. According to ICRAF, data currently available from the Ministry of Forests indicate that only 47 of the approximately 600 logging concessions issued to date have fully defined their boundaries, representing only 7 percent of production forests (Colchester, 2004).

National parks

The Indonesian law on Conservation of Biological Resources (No. 5., 1990) states that people should not live inside the boundaries of the country's national parks. Given that most of Indonesia's national parks were overlaid on existing land-use systems and drawn up without the input of the communities most affected by the creation of these areas, conflict in these parks is almost inevitable. Impoverished communities find it very difficult to bear the full opportunity costs of setting aside for conservation the lands that they depend on for a portion of their livelihood (Jessup, 2001), which often leads to encroachment and degradation of national park resources through illegal extraction and conversion. Weak enforcement of park boundaries has led to the creation of numerous "paper parks" in Indonesia, where legal tenure and right to the land are ignored with little consequence.

COMMUNITY-LEVEL FOREST MANAGEMENT

Small rural communities have existed in and around forested areas in Indonesia since prehistoric times. Over the centuries, complex societies evolved with sophisticated relationships to the natural world. Over time, societal values developed that not only enabled individuals and communities to survive, but also allowed them to do so on a sustainable basis. Sustainable practices became common practice and were eventually institutionalized as traditional law, or Adat. Throughout Indonesia, Adat forms the basis for forest tenure by traditional communities that are dependent on the sustainable exploitation of natural resources for their livelihoods.

Basic principles of Adat

Adat is a set of traditional laws that regulate nearly all aspects of life in the community, and are not necessarily restricted to natural resource use. In many societies with a long history and presence in forested areas, such as the Dayak groups in Berau Regency, resource-based Adat has a clearly defined purpose. One definition of resource-based Adat that has been developed through previous studies is as follows:

"The protection role and use of communal forests is based on balanced conservation and use of natural resources considering cultural conditions, economy and equal distribution, and the well-being of present and future generations" (Deschamps, 2000).

Formulation of rules and regulations

Adat regulations are laws created by the community and administered by a local council of Adat elders. These regulations include both traditional and legal laws, and control the rights, responsibilities and legal sanctions of people residing inside and outside of the host community.

Rights of ownership and use

The extraction of forest products from the traditional use area is restricted to residents of the host community. Although private landholdings are not permitted in the forest, individuals may lay claim (hak milik) for the use of land, or even specific trees, within the area with permission from the appropriate representative. Often, this right can be passed along to family members or traded/sold to

other members of the same village. In the case of dry-field gardens, the right of use may be taken away from the user and redistributed among other residents of the host community, at the discretion of the Adat council, should the area remain unused for an extended period.

Implementation and jurisdiction

Adat details rights and responsibilities with regards to resource extraction. These are based on the principle that residents have equal rights to a healthy environment, namely to use and protect the community forest and participate in the planning, implementation and planning process. It also defines the size, location, area boundaries and harvest locations of forest products.

Amendments to Adat

Amendments to Adat must go through the Adat council before being approved. Because the specific rules and regulations regarding Adat are developed by the residents of the host community, there is no need to seek outside approval for the plan unless it involves major expansion of the land base. However, before changes to the Adat are made, extensive discussions of the nature and need for the change must be held before an Adat council makes a decision.

THE IMPACTS OF THE DECENTRALIZATION PROCESS ON NATURAL RESOURCES MANAGEMENT AND GOVERNANCE

The World Commission on Forests and Sustainable Development (WCFSD) identifies the challenge to decentralization as forming agreement on new roles among communities, the State and the private sector to issue and ensure the security of adequate and equitable rights (WCFSD, 1999). In order to achieve a workable and sustainable partnership approach, a certain level of decentralization in the existing management structure must take place. Although remaining parts of larger, provincial or national systems, individual sites must be endowed with the ability to form partnerships with local stakeholders, and to empower these partnerships with decision-making abilities as well as the institutional and financial resources required to carry them out.

Since the downfall of President Suharto in 1998, the Indonesian government has been facing mounting pressure domestically and internationally to take action to implement decentralization, but progress is slow and not all policy reforms in process are necessarily good news for forests.

Although greater accountability by both the government and the private sector has resulted from a freer political atmosphere, efforts to prevent the worst abuses of corporate power have had limited success. Longstanding problems of unclear land tenure rights have come to the forefront as a result of weakening central power. Indonesia's progress toward a new system of regional autonomy and continuing political turmoil has made it difficult for the country to meet commitments to policy reforms in the forestry sector, and regional governments have promoted intensified exploitation of forest resources as a means of generating short-term revenue in many areas.

The following sections summarize some of the most relevant issues related to decentralization of the forestry sector in Indonesia.

Governance issues

Illegal logging has been an institutionalized practice in Indonesia for decades. Suharto's New Order regime derived economic benefits from forest exploitation, but it also used the allocation of forest concessions to gain political support and to fund off-the-books projects. The degree to which the political establishment and the public administration (including national and local governments, the armed forces and political parties) in the post-Suharto era still rely on revenues from illegal forest activities is uncertain, but there is evidence indicating that these groups are still one of the causes of illegal logging in Indonesia (Obidzinski and Barr, 2003).

Processes to incorporate societal preferences about forest management – including concerns about the potential environmental harm of illegal logging – are not well developed. If citizens and administrators regard logging, even illegal logging, as beneficial to the community, they may not seek the enforcement of legislation. At an institutional level, there is evidence that local government officials in many cases are supportive of logging activities to increase local revenues and may even "legalize" illegal timber in order to capture revenues. The introduction of a more participatory and

accountable process to allocate forests to alternative land uses would contribute to better forest management in areas designated as forests, and possibly reduce social conflict.

Uncertainty surrounds the policy and legal framework for forest management in Indonesia. This problem is mainly the result of the range of social and economic interests brought to the fore by the fall of the Suharto regime and the ongoing transition process. A lack of clarity and conflicting provisions in the legislation also contribute to the problem. Government Regulation 34/2002, which provides the details for the implementation of Forestry Law 41/1999, has in effect brought about, at least on paper, a "recentralization" of decision-making on forests by clearly stating that the central government has sole authority over them and that permits issued at the regional level are no longer valid. This status is being contested by local administrations, however. In relation to the legislation itself, it is possible to define areas of absolute legality and absolute illegality, as well as grey areas in between. The existence in positive law of the definition of legality and illegality needs to be the starting point for the definition of what may be considered legal timber and legal forestry operations. Lack of full social acceptance of positive law should not be confused with a lack of positive law.

Corruption is widespread. In 2003, Transparency International ranked Indonesia as the eleventh most corrupt country in the world, jointly with Kenya. Out of 35 Indonesian public institutions, the ones most relevant to the forestry sector were ranked as follows, from least to most corrupt: armed forces, sixth; provincial governments, eighteenth; municipal governments, nineteenth; political parties, twenty-third; Ministry of Forestry, twenty-fifth; police, thirtieth; judiciary, thirty-third; and customs authority thirty-fourth. Corruption appears to be an underlying cause of illegal logging in Indonesia, but whether it is the leading cause, and how it may be related to other causes, is unclear.

Logging industry

The logging concession system in Indonesia is intended to maintain forest lands in permanent production, but poor or uncontrolled logging practices undertaken by concession holders have been a major contributor to the present rapid rate of deforestation. Logging activities are often subcontracted out to companies with little vested interest in forest management. This often leads to indiscriminate felling of trees below specified diameter limits or illegal clearing of trees outside of approved cut blocks, or on steep slopes or riverbanks. Collateral damage from poor felling practices can have an impact on wildlife habitat and movement corridors for arboreal species.

Local government

Many local governments in Indonesia have used the authority they were granted under decentralization and established greater control over the timber sector. In Berau, for example, this was accomplished through issuance of increased numbers of logging and forest conversion permits, exercising greater administrative control over timber concessions and localizing control over the forestry department by moving it from provincial to regency authority (Obidzinsky and Barr, 2003). Although Berau's local government seized additional authority to manage forest land, it did not do so with much capacity to factor ecological and conservation considerations into its land-use planning or decision-making. Between March 1999 and January 2000, the Berau government issued 33 small-scale logging licences covering more than 11 000 ha (Obidzinsky and Barr, 2003). These permits, allowing logging on blocks as small as 100 ha, often led to clearing of land, making any kind of forest management difficult or impossible.

Communities

Over the years, there have been many examples in Indonesia in which community interest was not well represented in decision-making. By failing to account for the public interest, these narrowly based management regimes have often led to unsustainable development activities (Dutton, 2001).

Decentralization emboldened many communities to make claims to what they view as their customary use areas within timber concessionaires and national parks. However, as they lack information on their traditional land rights and possess weak negotiating skills, communities are often poorly equipped to stake their claims. In such cases, compromises are often reached that provide short-term fixes that only benefit select members of the community.

Summary of impacts of the decentralization process on natural resources management and governance

Today one of the main problems facing Indonesia's forests is conflict with local communities resulting from:

- the weak tenures accorded customary communities under the agrarian and forestry laws;
- the lack of clear regulations setting out how to recognize these weak tenures;
- the lack of regulations for recognizing rights forests, customary forests and special purpose areas;
- the inadequacies of the process in which logging concessions were gazetted and national parks created;
- confusion over new laws that have decentralized some aspects of the State's jurisdiction over lands, forests and other natural resources to district authorities;
- new laws that recognize the legitimacy and rights of local communities, which have yet to be accommodated by revised land tenure and forestry laws.

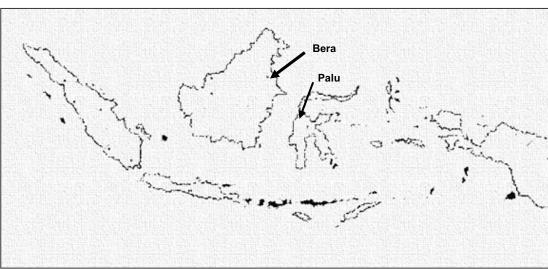
Forest resources tenure and local management arrangements – case studies in support of collaborative management in Indonesia

Recent political developments indicate a shifting of paradigm in Indonesia's natural resources management. This change coincides with the sweeping decentralization of authority that Indonesia has undertaken since 1998. This increased authority to local actors includes the management of natural and human resources, and places a much greater emphasis on bottom-up decision-making processes from one that was previously very top-down.

Given this shift, conservationists increasingly view local-level efforts targeting traditional landowning groups, local land managers and *de facto* landholders as essential components of strategies to protect biodiversity. These efforts require new mechanisms to set aside and manage effectively land for conservation within both traditional landownership systems and national land tenure regimes (Jessup, 2001). To be successful, such mechanisms must recognize traditional ownership, link permanent conservation protection with benefits from sustainable development and provide economic incentives to landholders to offset foregone revenues from extractive and other destructive uses of natural resources that might otherwise ensue.

In response to these conditions, The Nature Conservancy (TNC) has created local models for collaborative management in the Segah watershed in Berau, East Kalimantan, and Lore Lindu National Park outside Palu, Central Sulawesi.





COLLABORATIVE MANAGEMENT

The collaborative management principle evolved from an understanding that all stakeholders must feel that the system of resource management is fair and that people's concerns are adequately addressed. The fundamental issue in collaborative management is one of equitable rather than equal power sharing among stakeholders. In this regard, the concept of collaborative management differs from established notions of co-management that call for equality in authority over resources between people and the recognized resource management authority. Instead, collaborative management allows input and buy-in from communities and other stakeholders to be incorporated in the final decision, with ultimate decision-making authority retained by a single management authority – whether that be the park authority, a timber company, a government office or another

institution. This collaborative management process is undertaken with an understanding that if the concerns of local people are not represented adequately, the future of the resource cannot be considered secure regardless of the management regime in place.

Given the economic benefits derived by Indonesia from its natural resources, TNC has chosen to employ collaborative management to bring together key stakeholders, including representatives from government, the academic and private sectors and communities, to work together in achieving a common vision on how these areas should best be managed.

CASE STUDY 1: COLLABORATIVE MANAGEMENT IN THE SEGAH WATERSHED, EAST KALIMANTAN

TNC in East Kalimantan

In mid-2001, TNC launched a landscape-level conservation programme in the province of East Kalimantan. An ecoregional conservation assessment process identified the Berau and neighbouring East Kutai Regencies as containing some of the largest tracts of undisturbed lowland forest in Indonesian Borneo.

A high abundance of dipterocarp trees can be found in forests of Berau. The high potential value of these forests has led to serious threats from destructive logging practices and habitat degradation, both of which were major contributors to the catastrophic wildfires the province experienced in 1997/1998. Nearly all of Berau Regency has been parceled into concessions for timber or mining for coal and other minerals. TNC's East Kalimantan programme is particularly significant in that it was the first programme undertaken by TNC in Indonesia that focused outside a formally protected area and that was undertaken via a formal partnership with local government.

Berau Regency has a diverse ethnic mix. As in many parts of Kalimantan, many of the coastal people of Berau are Malays. Most of the upstream areas are traditionally dominated by Christian Dayaks of the Kayan and Kenyah groups who, along with the Iban, formed the legendary head-hunters of Borneo.

Dayak, meaning "upstream" or "inland", is the collective name for the various indigenous peoples on the island of Borneo. Dayaks are divided into about 450 distinct ethnolinguistic groups with a population estimated at about 3 million spread over the four Indonesian provinces in Kalimantan, the Malaysian territories of Sabah and Sarawak and the Sultanate of Brunei Darussalam. Despite some differences, these groups share physical features, architecture, language, an oral tradition, customs, social structure, weapons, agricultural technology and a similar outlook on life (Davis, 1993). Dayak people are mainly shifting cultivators of hill rice who dwell beside Borneo's upstream rivers, occasionally in traditional longhouses, and observe customary Adat laws.

Project area

The upper Segah River in Indonesia's East Kalimantan province is remote. It takes eight hours to get there from Tanjung Redeb by long-tail boat, travelling up a river corridor flanked by walls of green and towering trees. The forest is still healthy here and provides the primary livelihoods for the five Dayak villages along the upper Segah River.

Three of the villages in the project area are ethnic Dayak Ga'ai. Part of the Kayan Dayaks, the Ga'ai have lived in this area for more than 300 years (T. Jessup, personal communication). Their primary livelihood strategy is dry rice swidden agriculture. The two neighbouring villages are Punan Dayak. The Punan are the oldest of the ethnic groups in Borneo and have long been nomadic hunter-gathers. The Punan are renowned for their prowess in hunting with blowpipes and dogs. Many Punan in Borneo maintain their traditional hunter-gatherer lifestyles, but the Punan in the upper Segah settled in villages about three generations ago and have taken up dry rice farming like their Ga'ai neighbours.

In 1990, PT. Sumalindo Lestari Jaya began operating its 100 000-ha unit IV logging concession in the upper reaches of the Segah river. Sumalindo has long been one of the more reputable logging companies in Indonesia and has worked to make logging operations in its largest logging concession, unit II, more environmentally and sociably sustainable. Nonetheless, in 2000 the five villages in and surrounding the Sumalindo unit IV concession, unhappy with the impacts of logging in their traditional forests and the compensation they received from the logging operation, shut the concession down.

Negotiations initiated by Sumalindo eventually broke down. The villagers blocked access to the area and Sumalindo was forced to suspend operations in its unit IV concession for nearly two years. The decentralization process emboldened these communities who, despite government-approved concession rights granted to Sumalindo, clearly did not recognize the legitimacy of this tenure arrangement, especially as it overlapped with lands they laid claim to for as long as 300 years.

Collaborative management in the Segah watershed

TNC was conducting biodiversity surveys in the area during the period of conflict and found that most of the community members with whom its staff spoke indicated that they were in favour of Sumalindo resuming operations, but with more benefits provided to communities and formal assurances that impacts on traditional forests – including sacred places such as burial grounds and tree species on which the communities depend for income – would be minimized. As TNC was viewed as a neutral third party, it was asked by Sumalindo and the villagers to act a facilitator in resolving the conflict.

This use of a collaborative model led to the creation of the Segah Management Body (*Badan Pengelola Segah*), which brought together representatives from the five Dayak Ga'ai and Punan communities with Sumalindo in cooperative management of forest resources. In October 2003, an agreement was reached and logging restarted. The agreement was formally signed by the villagers, TNC and Sumalindo in June 2004. The Berau Regency government and the East Kalimantan provincial government also signed.

Agreement

The agreement resolved the standing conflict and allowed the concessionaire to resume logging activities under a commitment to move towards sustainability. It also substantially increased the benefits to communities through a compensation mechanism that boosts their proceeds from logging sixfold.

To implement the agreement, the Segah Management Body was formally established and registered as a foundation with a coordinating committee, a management committee in charge of day-to-day operations and paid and volunteer staff. The five villages each fund 5 percent of the annual costs, with Sumalindo funding the remaining 75 percent. A system to allow the Management Body to monitor forest harvesting within the concession is now being developed.

The collaborative management agreement in the Segah recognizes the ultimate decision-making and legal authority that the company holds over the concession as granted through their government-awarded logging concession. However it also acknowledges the traditional land tenure rights of communities in three ways: (1) requiring agreement on where and when logging takes place, or free and informed consent; (2) ensuring equitable distribution of logging benefits through compensation for logging in traditional lands; and (3) increasing the voice of communities in the management of forest resources.

CASE STUDY 2: COLLABORATIVE MANAGEMENT IN LORE LINDU NATIONAL PARK, CENTRAL SULAWESI

TNC in Central Sulawesi

In 1992, TNC began working with the Indonesian government in Lore Lindu National Park (LLNP). The park is home to many of Sulawesi's unique species and provides water resources to more than 300 000 people living in the area. The mountainous park harbours some of the largest unbroken tracts of forest on Sulawesi, providing essential habitat for 73 percent of the island's endemic land birds and most of its endangered mammals.

Apart from the lowland forest fringes, the general condition of habitats within LLNP is good. Forest canopy is on the whole still intact, but lower-lying areas of forest are at high risk from conversion. The economic base of Central Sulawesi is mainly agricultural, and there is little large-scale industry.

Approximately half of the population of Central Sulawesi resides in Donggala and Poso Regencies, which surround LLNP. Sixty villages containing some 40 000 people, many of whom are impoverished and landless, border the park.

A century ago, many of Sulawesi's indigenous people lived in small warring clans and practised shifting agriculture. People in the mountainous regions were strongly influenced by missionaries from the Netherlands during the last century, and Christianity has now become widespread. Today the people lead a settled lifestyle dependent on wet rice agriculture, dryland farms and tree crops. The communities located near LLNP harvest and trade a number of natural resources, particularly rattan canes for furniture.

Recent migration into Central Sulawesi by a number of economic migrants and internal refugees from ongoing religious and ethnic conflicts in Indonesia is creating social stress and has had direct impacts on local biodiversity throughout the province. Immigrants, mainly from resource-poor South Sulawesi, are swelling these numbers. Local people are typically indebted to the more economically astute immigrants. Heavy debts have occasionally led to landlessness, as local traditions do not prohibit the sale of property to pay off debts.

Project area

The planting of coffee and cocoa by local people is the biggest threat to LLNP. Because coffee and cacao deliver the largest incomes in the shortest time, farmers and traders have shown great interest in expanding cultivation of these tree crops. This practice has resulted in widespread conversion of Central Sulawesi's forests to permanent agriculture.

Commercially valuable timber species, such as dipterocarps, are not abundant in Central Sulawesi, and therefore the commercial timber market is smaller than in many other forested areas in Indonesia. However, local people harvest timber for construction and fuelwood.

Access roads leading to Palu run along the east and west boundaries of the park and directly through the Dongi-Dongi valley in the northeast corner of LLNP. Increased access resulting from road improvements often leads to greater conversion and overharvesting of forest resources.

Large budget cuts have placed Indonesia's national park system and the biodiversity within it at grave risk. LLNP is one of the largest protected areas in Sulawesi, yet in 2000 it operated on a budget of only about US\$80 000 a year, or about \$0.37 per hectare. Moreover, as power devolves locally, many of the top-down control measures that have protected parks are failing. As a result, LLNP, like many parks in Indonesia, has an ineffective law enforcement system that allows encroachment by landless people who do not accept the legitimacy of the park's boundaries. This is the case in the Dong-Dongi valley.

Dongi-Dongi encroachment

Dongi-Dongi is a wide, fertile valley that is easily accessible from the major road that runs through it. The neighbouring Palolo Valley was settled in part by local migrants from the ethnic Da'a group, who took part in government-sponsored relocation programmes from 1978 to 1982. Over the years, the government was unable to produce the land promised to these landless people. Impoverished and landless, the Da'a first encroached Dongi-Dongi valley in 1997/1998, but were convinced to move out of the area with the help of representatives from neighbouring communities who, unlike the Da'a, had traditional claims to this land.

Encroachment occurred again in 2000/2001. This time the local legislature of Donggala Regency issued a letter asking the provincial governor to locate alternative land for the villagers. The LLNP park authority also issued a strong statement condemning the encroachment. Despite these actions and the absence of any traditional claims to land by the Da'a, the encroachment has been allowed to stand, thanks in large part to the vocal support of community rights advocacy groups in Palu and Jakarta.

While initially occupying only a few hundred hectares of land, between 500 and 700 villagers were clearing forest for farming by June 2001. Land clearance continued with the support of local business interests who agreed to buy illegally logged timber and farmed goods. Estimates today are that a total of 600 households reside in the valley, and about 1 400 ha of the area has been deforested.

In 2002/2003, clearing by Dongi-Dongi settlers began to threaten the traditional lands of the neighbouring Sedoa village. In response, community members from Sedoa started to conduct

monitoring and patrolling and established a check point to assess the situation. While the situation has since quietened down, a plan for new settlements of an additional 100 households heightens the potential for horizontal conflict between landless migrants and settled communities with Adat claims to the land. Forest clearance in Dongi-Dongi has also led to instances of major flooding that further affect the long-established communities and amplify the threat of conflict.

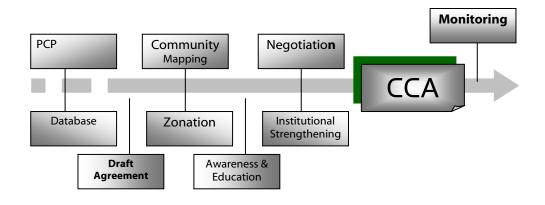
Collaborative management in LLNP

Faced with a lack of enforcement of the park's legal boundaries, TNC saw a need to pioneer mechanisms to engage the rural communities that pose direct threats to the park. A management system called site conservation planning (SCP), used by TNC throughout the world to identify threats and their sources and devise strategies for abatement, was modified for Indonesia in order to gather information on the environmental systems, stresses and strategies of greatest importance to communities. The modified methodology, renamed participatory conservation planning (PCP), approaches ecological information from the human viewpoint, relating management strategies to issues of relevance to local communities. PCP served as the basis for the development of community conservation agreements (CCAs).

Community conservation agreements

The use of CCAs was the first consistent approach developed to engage local communities in the collaborative management of LLNP. As demonstrated in Figure 2, the ten-step CCA process begins with engagement of villagers in threat assessment and abatement strategy sessions through the PCP process. This information, along with results from socio-economic surveys undertaken to identify income and resource use, is entered into a database and used to help identify land-use patterns during participatory mapping and zonation. Conservation awareness campaigns are initiated and village- and sub-district-level institutions or management bodies are formed and strengthened. Finally, community members develop conservation regulations and a zoning map, which are negotiated with park management authorities. Once the agreements are signed, communities are responsible for monitoring and enforcing them. Enforcement is often regulated through the Adat council with sanctions handed out to community members who operate outside the terms of the agreement.

FIGURE 2 The CCA process



The CCA prescribes communities with rights of access to resources, conservation responsibilities and locally applicable regulations. It also specifies the extent of community interactions with the park and mechanisms for coordination with park management. Each village-level CCA fits into the overall park zoning system. The LLNP Park Authority has embraced CCAs as a useful method for engaging communities in management. To date, 14 CCAs have been established and recognized by both the park and communities, with another 16 are currently in process.

In 2004, the Ministry of Forestry's Directorate General of Forest Protection and Nature Conservation (PHKA) recognized the success of this approach by formally adopting collaborative management scenarios with local communities as a front-line management strategy for its national parks (No. P.19/Menhut II/2004).

The CCA process legitimizes the boundaries of the national park to communities by demonstrating the park's importance in protecting traditional lands. Instead of viewing the park as locking them out of customary lands, communities are able to map out and gain access to areas of importance to them. The rest of their Adat land is viewed as being secured within the park's boundaries.

Difficulty with the CCA scenario arises with the appearance of free-riders who respect neither the park's legal boundaries nor the traditional claims of established communities, as has been the case with the Dongi-Dongi encroachment. Unless Dongi-Dongi is resolved successfully, communities engaged in CCAs around the park will begin to question why they should respect the boundaries and regulations of the park instead of emulating the profitable yet highly destructive land clearing actions of the encroachers.

Summary

Evidence from numerous national parks and timber concessions in Indonesia indicates that if local people are involved in forest management, the chance of avoiding serious encroachment and degradation of resources is greatly improved (Dutton, 2001). TNC's projects in East Kalimantan and Central Sulawesi demonstrate that in the absence of secure tenure rights, creation of management structures that are supported by customary law can foster a sense of community ownership and engender a commitment to conservation (Deschamps, 2004).

The collaborative management approach facilitated through the use of CCAs in LLNP and the Segah Management Body aim to improve the willingness of people living in these areas to commit to the long-term survival of the forest. This approach has generated strong support and significant interest both in Indonesia and the broader conservation community.

Collaborative management and economic sustainability

In 2001 and 2002, TNC conducted studies in Berau Regency and LLNP that were used to develop socio-economic and resource consumption profiles for rural communities in the project areas. These profiles provided TNC with an understanding of the demographic and economic characteristics of the communities, as well as the frequency of environment-related incidents, such as flooding and health issues.

An assessment of the profiles supports the concept that sustainable forest management, based on traditional land-use systems employing Adat, has the potential to provide social and economic benefits at a level equal to, if not superior to, other land-use systems in nearby rural areas. TNC's collaborative management approaches in East Kalimantan and Central Sulawesi embrace this concept and promote active management by local communities to develop sustainable resource exploitation and restore the balance between social benefits and ecological integrity.

In Berau, the communities that participated in the study included both Dayak and Malay villages. As discussed previously, forest-based Adat is an integral part of traditional Dayak livelihoods. Malay villages in Berau are relatively recent arrivals, and are often agricultural-based economies (primarily wet rice and cash crop); they have not developed a parallel system of Adat to manage their forest resources. As such, the communities in the Berau project area are considered representative of *forest-based* and *agro-based* systems in Berau, based on the existence and adherence (or lack thereof) to resource-based Adat.

In LLNP, the communities are comprised of households from a variety of indigenous and immigrant backgrounds, and natural resource management in project area can be considered an example of a *mixed agro/forest-based* system as most of the indigenous households focus on forest-based products while most of the immigrant households are agro-based.

The following sections provide an assessment of the socio-economic and environmental profiles in the *forest-based*, *agro-based* and *mixed* management systems, and provide the economic justification for TNC to promote sustainable forest-based systems in communities that participate in the collaborative management process.

Profiles of communities in the Berau and LLNP project areas are presented separately due to the different portfolio of agricultural and forest products that exist in the two locations. Despite these differences, parallels between the two project areas are sufficient to compare the relative effectiveness of the different land-use and resource consumption practices to provide benefit to their host communities. Environmental considerations in the two project areas are presented jointly.

SOCIO-ECONOMIC PROFILE OF RURAL COMMUNITIES IN BERAU

Agricultural producer and resource user survey

The Agricultural Producer and Resource User Survey was developed to gather primary data at the household level from rural communities in the Segah/Kelay watershed. Tanjung Redeb-based non-governmental organizations (NGOs) assisted in conducting the survey.⁵⁵

⁵⁵ Survey delivery training was provided to the surveyors on 14 May 2002 and the survey was conducted from 15 to 21 May. By using official population figures provided by the Central Bureau of Statistics, it was determined that a statistically representative sample of rural households required a minimum of 243 respondents for a 95 percent level of confidence. In total, 306 surveys were conducted in 12 rural communities.

Agricultural production

Table 1 shows that basic agricultural inputs indicate similar areas of land and weekly effort. Agrobased systems place greater emphasis on irrigated land, probably as a result of importing the rice paddy culture via Javanese migrants to the area.

TABLE 1
Household agricultural inputs: forest-based and agro-based systems

	Forest-based	Agro-based
Area of agricultural land	2.36 ha	2.14 ha
Area of irrigated land	0.08 ha	0.24 ha
Weekly level of effort	29.0 hours	27.8 hours

Source: Agricultural Producer and Resource User Survey, 2002.

Survey participants were asked to provide the annual household production of each of the nine most common cultivated crops, the unit price received for each and the percentages consumed in the household and sold/traded. As households typically produce more than one type of fruit or vegetable, they were asked to provide information only for the primary types they produced. This helped to ensure a conservative estimate.

Although rice is the primary food staple in Berau, as it is throughout most of Indonesia, wet rice agriculture (sawah) is not as extensive as it is in other parts of the archipelago. Soil fertility, topography and climate in Kalimantan are more conducive to dry rice agriculture (ladang) and, as a result, this type of agriculture is dominant in Berau. However, there are locations within Berau that are suitable for sawah production.

Few inland fisheries, such as freshwater ponds, cage culture ponds or paddy– fish cultures, were recorded in the study area as part of agricultural households' portfolio of production activities. Dinas Perikanan dan Perlautan has examined the possibility of developing inland fisheries in communities along the Kelay and Segah rivers, but to date little interest in developing them has been shown at the community level as natural stocks are still perceived as plentiful (V. Deschamps, personal communication, May 2002). Dinas representatives are concerned that natural stocks cannot support high levels of extraction and that alternatives should be examined. Their concerns are justifiable, given previous examples of stock depletions in larger river systems in Kalimantan including the Mahakam and Kapuas rivers. Inland fisheries have proven successful in other parts of Berau, producing 1 027.4 tonnes of fish worth more than Rp5.5 billon in 2000.

Other agricultural products require water, but do not require direct irrigation. Most of the nonirrigated agriculture production is in the form of dry rice, and the remaining products are recognized cash crops; fruit, coffee and cocoa are particularly important to the local agricultural economy.

Households in forest-based systems derived approximately Rp2.78 million (US\$324) from agricultural products (Table 2A). Most of this was consumed in the home, and about 27.8 percent was either sold or traded. Dry rice was the most important crop, both in terms of household consumption and as a cash crop (although more emphasis was placed on the former). Cocoa was the only crop that was grown specifically as a cash crop.

	Average annual production per agricultural household (kg)	Average total value	Used		Sold/traded	
Product		(Rp)	%	Value	%	Value
Сосоа	36.0	238 031	1.0 %	2 467	99.0 %	235 564
Coconut	28.8	57 365	56.6 %	32 462	43.4 %	24 902
Coffee	11.9	70 363	53.3 %	37 476	46.7 %	32 886
Dry rice	641.0	1 835 791	86.8 %	1 594 015	13.2 %	241 776
Fish ponds	3.9	98 361	100.0 %	98 361	0.0 %	0
Fruit	94.4	461 115	49.2 %	229 702	50.2 %	231 413
Pepper	0.01	246	100.0 %	246	0.0 %	0
Vegetables	9.4	10 476	65.3 %	6 837	34.7 %	3 639
Wet rice	2.0	5 902	68.8 %	4 057	31.3 %	1 844
Total		2 777 650	72.2 %	2 005 623	27.8 %	772 024

TABLE 2A Agricultural production and value: forest-based systems

Note: US\$1 = Rp8 575 (June 2002). Totals may not add up exactly owing to rounding.

Source: Agricultural Producer and Resource User Survey, 2002.

Households in agro-based systems derived approximately Rp2.23 million (US\$260) in agricultural products (Table 2B). Most of this production was sold or traded, with 42.3 percent being consumed in the home. Despite the fact that there are not many large operations in the study area, fish ponds represented the greatest source of average income. Cocoa, fruit, pepper and vegetables were also grown primarily for sale. As with households in the forest-based systems, the majority of rice crops were consumed in the home.

Product	Average annual production per agricultural household (kg)	Average total value (Rp)	Used		Sold/traded	
			%	Value	%	Value
Сосоа	10.6	78 210	0.0 %	0	100.0 %	78 218
Coconut	69.8	48 065	60.8 %	29 222	39.2 %	18 843
Coffee	6.1	34 516	81.5 %	28 124	18.5 %	6 392
Dry rice	218.9	656 613	91.6 %	601 452	8.4 %	55 161
Fish ponds	32.3	806 452	0.0 %	0	100.0 %	806 452
Fruit	230.2	361 952	33.4 %	120 870	66.6 %	241 081
Pepper	0.81	16 129	0.0 %	0	100.0 %	16 129
Vegetable s	48.7	75 056	31.5 %	23 606	68.5 %	51 451
Wet rice	50.0	150 000	92.7 %	139 113	7.3 %	10 887
Total		2 226 993	42.3 %	942 387	57.7 %	1 284 614

TABLE 2B Agricultural production and value: agro-based systems

Note: US\$1 = Rp8 575 (June 2002). Totals may not add up exactly owing to rounding.

Source: Agricultural Producer and Resource User Survey, 2002.

Livestock inventories

Livestock data were derived from the Agricultural Producer and Resource User Survey, and were cross-referenced with published data from Dinas Pertanian, Perkebunan dan Perternakan (Department of Agricultural, Plantations and Livestock). The types of livestock present in the study area included chickens, cows, ducks, goats and pigs. Survey respondents were asked the number of each type of livestock they possessed and to assess the market value of their household inventories.

Average levels of consumption were provided by Dinas Pertanian, Perkebunan dan Perternakan for each livestock type.

Households in agro-based systems placed greater emphasis on developing and maintaining livestock inventories (Table 3). The value of agro-based inventories is almost six times that of forest-based households, and represents a significant portion of total capital investment by individual households and agro-based communities. Much of the agro-based livestock inventories is cattle; agro-based livestock inventories of pigs are much smaller owing to the predominantly Muslim populations in these communities. As a result of larger overall inventories, a smaller percentage of the inventory is consumed annually than in forest-based households, although the overall value of this consumption is substantially higher.

Livestock type	Average number per agricultural household		Average value of inventory (Rp)		Average value of annual consumption (Rp)	
Livestock type	Forest-based	Agro-based	Forest- based	Agro-based	Forest- based	Agro-based
Chickens	7.6	11.6	187 461	264 597	151 391	213 685
Cows	0.2	1.8	387 705	5 116 129	63 088	832 501
Ducks	0.7	2.8	18 586	66 048	11 345	40 316
Goats	0.004	0.048	1 025	33 871	165	5 457
Pigs	1.4	0.1	367 459	58 065	124 510	19675
Total Value			962 236	5 538 710	350 499	1 111 634
Annual consumption	36.4 percent	20.1 percent				

TABLE 3
Livestock inventories: forest-based and agro-based systems

Note: US\$1 = Rp8 575 (June 2002). Totals may not add up exactly owing to rounding.

Source: Agricultural Producer and Resource User Survey, 2002.

Value of agricultural production

Table 4 compares the value of agricultural production in forest-based and agro-based systems. Agrobased systems produced a marginally higher value, owing primarily to the higher value of livestock consumption in agro-based communities. It should be noted that the consumption figure has been used in this determination as it represents that portion of the livestock inventory that contributes to household income on an annual basis. However, the importance of capital investment in agricultural production warrants further examination, and a discussion of the capital investments of forest-based and agro-based systems is provided in a later section of this case study.

TABLE 4

Value of agricultural production: forest-based and agro-based systems

Component	Annual benefit/economic value (Rp)		
Component	Forest-based	Agro-based	
Value of agricultural products	2 777 650	2 226 993	
Value of livestock consumption	350 499	1 111 634	
Total value of agricultural production	3 128 149	3 338 627	

Note: US\$1 = Rp8 575 (June 2002). Totals may not add up exactly owing to rounding.

Source: Agricultural Producer and Resource User Survey, 2002.

Forest products

Production levels for the 11 most common forest products in the watershed were determined by data derived from the survey. The portfolio of products was selected through discussions with TNC

staff and survey participants and review of documentation from Dinas Pertanian, Perkebunan dan Perternakan (Department of Agriculture, Plantations and Livestock), as shown in Tables 5A and 5B.

Dayak communities have traditionally relied heavily on hunting wild game as a source of food. This represents an important protein source for the people in the upper reaches of the Kelay and Segah rivers. Of greatest importance is the consumption of the bearded pig (*Sus barbatus*). According to the survey, agricultural households that hunt pig (i.e., Dayak households), consume an average of 89.2 kg of pig meat annually, or 15.4 kg per person. This estimate is very close to the 12 kg of wild meat per person consumed in Sarawak (MacKinnon *et al.*, 1996: 380). Other forms of wild game were also recorded in the survey including deer, river turtles, monkeys and civets, although other species, such as sun bear and orangutan, are also known to be consumed.

Households in forest-based systems derived approximately Rp9.08 million (US\$1 058) in forest products (Table 5A). Almost half of this value was either sold or traded, although most of the wild game gathered from the forest (i.e., meat and fish) was consumed in the home. Timber was the most important forest product in terms of value, and was sold along with gaharu (aloe wood) and honey as the most important sources of income.

Product	Average annual production per agricultural household (kg)	Average total value (Rp)	Used		Sold/traded	
			%	Value	%	Value
Bird nests	0.004	9 836	0.0%	0	100.0%	9 836
Damar	1.6	2 855	95.8%	2 736	4.2%	119
Fishing	164.9	1 082 898	78.8%	853 813	21.3%	230 379
Gaharu	1.0	2 324 859	0.0%	0	100.0%	2 324 859
Honey	33.0	817 725	33.3%	272 067	66.7%	545 658
Medicinal plants	0.6	902	97.3%	877	2.7%	24
Other hunting	0.5	140 328	49.3%	69 228	50.7%	71 099
Pig hunting	89.2	566 287	88.7%	502 244	11.3%	64 043
Rattan	5.2	5 338	94.2%	5 030	5.8%	307
Shrimp	0.3	6 352	100.0%	6 352	0.0%	0
Timber (m3)	10.3	4 118 668	72.2%	2 972 929	27.8%	1 145 739
Total		9 076 048	51.6%	4 685 276	48.4%	4 392 063

TABLE 5A Forest products and value: forest-based systems

Note: US\$1 = Rp8 575 (June 2002). Totals may not add up exactly owing to rounding.

Source: Agricultural Producer and Resource User Survey, 2002.

Households in agro-based systems derived approximately Rp2.90 million (US\$338) in forest products (Table 5B). Timber was the most important forest product gathered, with household consumption being slightly more than that sold or traded. The remainder of the forest products had more defined roles in the household economy; they were either used or sold/traded, but not both. Shrimp, other hunting (i.e., non-pig game), medicinal plants and rattan were consumed exclusively in the home (and fish nearly so). Gaharu was the only product gathered exclusively for sale.

	Average annual production	Average total value	Used		Sold/traded	
Product	per agricultural household (kg)	(Rp)	%	Value	%	Value
Fishing	22.3	120 161	80.7%	96 930	19.3%	23 232
Shrimp	6.5	161 290	100.0%	161 290	0.0%	0
Pig hunting	0.0	0	N/A	0	N/A	0
Other hunting	0.1	8 065	100.0%	8 065	0.0%	0
Bird nests	0.0	0	N/A	0	N/A	0
Damar	0.0	0	N/A	0	N/A	0
Gaharu	0.9	427 335	0.0%	0	100.0%	427 335
Honey	0.0	0	N/A	0	N/A	0
Medicinal plants	0.5	532	100.0%	532	0.0%	0
Rattan	1.5	1 226	100.0%	1 226	0.0%	0
Timber (m3)	9.1	2 183 871	57.8%	1 261 792	42.2%	922 079
Total		2 902 480	52.7%	1 529 835	47.3%	1 372 646

TABLE 5B Forest products and value: agro-based systems

Note: US\$1 = Rp8 575 (June 2002). Totals may not add up exactly owing to rounding.

Source: Agricultural Producer and Resource User Survey, 2002.

Economic value of agricultural and forest products

Table 6 indicates that the economic benefits derived by households in forest-based communities were substantially higher (Rp5 963 090 or 95.5 percent) than those derived by agro-based households. The reason for this higher figure was the near-dependency of forest-based households on forest products, which accounted for almost three-quarters of the average household income.

TABLE 6

Summary of economic benefits: forest-based and agro-based systems

Component	Annual benefit/economic value (Rp)		
Component	Forest-based	Agro-based	
Value of agricultural production	3 128 149 (25.6%)	3 338 627 (53.5%)	
Value of forest products	9 076 048 (74.4%)	2 902 480 (46.5%)	
Total value of production	12 204 197	6 241 107	

Note: US\$1 = Rp8 575 (June 2002). Totals may not add up exactly owing to rounding.

Source: Agricultural Producer and Resource User Survey, 2002.

SOCIO-ECONOMIC PROFILE OF RURAL COMMUNITIES IN LLNP

Agricultural producer and resource user survey

The Agricultural Producer and Resource User Survey was adapted to suit local conditions.⁵⁶ These adaptations included revised categories of agricultural and forest products, livestock inventories and

⁵⁶ By using official population figures provided by the Central Bureau of Statistics, it was determined that a statistically representative sample of rural households in the project area required a minimum of 263 respondents for a 95 percent level of confidence. In total, 306 surveys were conducted in 11 rural communities.

rates of consumption, as well as the addition of schistosomiasis, which is endemic to many of the small communities around the periphery of LLNP, to the list of environmental incidents.

Agricultural production

The average household in the survey utilized 1.83 ha of agricultural land. More than half of this, 0.99 ha, was irrigated for wet rice, vegetables or fish ponds. On average, the primary farm worker devoted 34.1 hours per week to agricultural activities.

The agricultural goods produced in the sub-watershed included cocoa, cloves, candlenut, coconut, coffee, dry rice, fish, fruit, pepper, vanilla, vegetables and wet rice.

Households in the survey derived approximately Rp3.21 million (US\$318) from agricultural products. Most of this production was sold or traded, with 39.3 percent being consumed in the home. Wet rice was the most important product, both for its value for consumption and as a cash crop (54.6 percent consumed and 45.4 percent sold/traded). Cocoa, cloves, candlenut and vanilla were grown exclusively as cash crops, and about two-thirds of coconut, coffee, pepper and vegetables were also sold. The remaining products – dry rice, fish and fruit – were consumed in the home.

Livestock inventories

Types of livestock present in the survey area included chickens, cows, ducks, goats, horses, pigs and water buffalo. Horses were considered only as beasts of burden and were not consumed; their inclusion in the survey was necessary to determine the overall value of livestock inventories in the survey area.

Households in the survey placed emphasis on developing and maintaining livestock inventories. On average, livestock inventories were valued at about Rp3.4 million (US\$336) per household. Cows and water buffalo represented the greatest components of the inventories in terms of value. Chickens and ducks were the most plentiful livestock types (14.9 and 3.1 animals per household, respectively).

On average, about 20.4 percent of the household livestock inventory was consumed on an annual basis. The value of this consumption was Rp683,809 (US\$67.70).

Value of agricultural production

Table 7 shows the value of agricultural production of households in the mixed forest-/agro-based systems.

TABLE 7

Value of agricultural production: mixed systems

Component	Annual benefit/economic value (Rp)
Value of agricultural products	3 209 035
Value of livestock consumption	683 808
Total value of agricultural production	3 892 843

Note: US\$1 = Rp10 100 (November 2001). Totals may not add up exactly owing to rounding.

Source: Agricultural Producer and Resource User Survey, 2001.

Forest products

Production levels for the nine most common forest products in the survey area were determined through the survey. The portfolio of products was selected through discussions with TNC staff and survey participants and on review of documentation from Dinas Pertanian, Perkebunan dan Perternakan (Department of Agriculture, Plantations and Livestock), and included damar, fishing, honey, medicinal plants, palm sugar, rattan, shrimp, timber and tree bark.

Households in the mixed system derived approximately Rp3.0 million (US\$293) from forest products. The majority of this, 81.6 percent, was consumed in the home and the remainder was either sold or traded. Timber was the most important forest product in terms of value. Despite 84.5

percent of timber being consumed in the home, it was also the most important source of income. Fish and damar were the only forest products harvested specifically for sale/trading. Tree bark, honey and medicinal plants were gathered primarily for consumption in the home. Shrimp, palm sugar and rattan were evenly split between home consumption and cash crops.

Economic value of agricultural and forest products

Table 8 shows the average economic contributions of agricultural production and forest products to households in the mixed forest–agro systems. Agricultural production provides a marginally greater proportion of this benefit.

TABLE 8 Summary of economic benefits: mixed systems

Component	Annual benefit/economic value (Rp)
Value of agricultural production	3 892 843 (56.8%)
Value of forest products	2 958 976 (43.2%)
Total value of production	6 851 819

Note: US\$1 = Rp10 100 (November 2001). Totals may not add up exactly owing to rounding.

Source: Agricultural Producer and Resource User Survey, 2001.

IMPACTS ON THE NATURAL ENVIRONMENT AND COMMUNITY WELL-BEING

Tropical forests are one of the world's major biomes. However, as forests continue to be cut down, converted or altered, the value of services that can be provided by the forests decreases. Once the forest is removed it will likely never revert to its original state; chances are it will be converted to ladang, rice paddies or rural residential use. As such, the economic gains that can be made through extractive practices may be higher than the value of ecosystem services in the short term. However, the loss of key ecosystem services in the long term far out-value the short-term gains of extraction, as well as increasing the risks to human well-being.

Frequency of environmental events and impacts on rural households

The study identified seven ecosystem service-related events that commonly occur in Berau and LLNP (although schistosomiasis is found only in some parts of LLNP). These are conflicts with wildlife, diarrhoea, drought, erosion, floods, forest fires and malaria. Although these are events that may appear natural, they are frequently the result of human activity, or at least amplified from their natural levels as a result thereof. Either way, the frequency of these events on the population of the watershed reflects stress on the ecosystem and affects its ability to provide services to the community. This, in turn, has direct impacts on the well-being of local residents.

Despite the economic benefits derived by both forest-based and agro-based communities in the survey, current land-use practices in the area may be having an impact on the well-being of the communities. Table 9 shows the frequencies of environmental incidents in forest-based, agro-based and mixed forest–agro communities in Berau and LLNP.

Incident	Forest-based	Agro-based	Mixed
Conflicts with wildlife	10.2%	0.0%	N/A
Diarrhoea	67.2%	33.9%	41.5%
Drought	13.1%	8.1%	35.9%
Erosion	22.1%	9.7%	9.8%
Floods	91.8%	53.2%	41.2%
Forest fires	4.1%	6.5%	5.9%
Malaria	88.9%	51.6%	60.5%
Other	N/A	N/A	7.5%
Schistosomiasis57	N/A	N/A	4.9 percent

Environmental incide	nts: forest-based, agro-k	pased and mixed systems
TABLE 9		

N/A = not applicable to survey area.

Source: Agricultural Producer and Resource User Surveys, 2001 and 2002.

Households in forest-based communities reported higher rates of incidents in all categories, with the exception of forest fires. Almost 40 percent of respondents from forest-based communities reported that their water was either somewhat dirty (36.5 percent) or very dirty (3.3 percent). In comparison, 45 percent of households in agro-based communities reported that their water was either somewhat dirty (40.0 percent) or very dirty (5.0 percent). Fewer respondents reported somewhat dirty (18.9 percent) or very dirty (1.3 percent) in the mixed system community (although the mixed system survey was conducted in a separate watershed).

In many cases, the elevated frequencies of environmental incidents experienced by forest-based communities are not the result of the activities of the communities themselves. Many of these incidents may be the result of the close proximity of forest-based communities to the front lines of environmental degradation (i.e., unsustainable timber extraction, illegal logging and the conversion of natural forests to oil-palm plantations) combined with the lack of mitigating infrastructure or services. Identifying and addressing the sources of these incidents, either from within the communities or from outside, is an important step in maintaining the balance between community health and economic prosperity.

The relationship between resource extraction and the impacts on ecosystem services and wellbeing is not yet understood by the majority of residents, even though it may have an effect on health in the community. Although forest-based activities appear to be profitable in an economic sense, the true costs of these activities, in terms of impacts on ecosystem services and well-being in the community, may have been overlooked for the sake of short-term financial gain. As such, the frequency of these events should be closely monitored in the future as a measure of the sustainability of the collaborative management system.

Effects of forest conversion on sedimentation

Periodic flooding of rivers and the erosion of slopes is a natural phenomenon exacerbated by human activity. An estimated 30 percent of Kalimantan is susceptible to landslides, with the most critical zones being the hill and mountain areas where forests have been cleared or partly felled (MacKinnon *et al.*, 1996: 535). Given the prevalence of shifting cultivation and forest conversion in the hill areas of Berau, there is a high chance of erosion when vegetation cover is removed, especially on steep slopes.

Studies conducted by TNC in LLNP indicate that there is strong correlation among forest clearing, increased runoff and heavier sediment loads in rivers (Widjajanto, 2001). This also appears to be the case along the Kelay and Segah rivers in Berau. Locals report that increased sediment bed loads in the rivers have resulted from elevated erosion rates in the upper catchments of these rivers, as a cumulative effect of forest conversion activities. Erosion and the loss of productive land have

⁵⁷ Schistosomiasis is endemic to many of the small communities around the periphery of LLNP.

been reported by communities along both the Kelay and Segah rivers. Anecdotal information from Dinas Perikanan dan Perlautan shows that as recently as 25 years ago it was possible to see fish on the bottom of the Kelay River in Tanjung Redeb. Today the river at this point is very murky and visibility is near zero (V. Deschamps, personal communication, May 2002).

Between 1997 and 2000, 130 145 ha of forest in Berau was converted to other uses (BFMP, 2001). Another 63 651 ha of healthy forest became disturbed forest over this same time period. The rates of conversion, and the inherent risk of increased sedimentation associated with these, pose a substantial threat to the health of the Kelay and Segah rivers.

Poor forest management and drought conditions have had a major impact on forests and plant communities, and together with the impacts of forest clearing related to logging, agriculture and resettlement, can result in forest fires of catastrophic proportions. Deforestation of land overlying coal deposits is of particular concern. Drought and forest fires in 1982/1983 affected an estimated 3.6 million ha of forest in East Kalimantan, and another million ha in neighbouring Sabah (MacKinnon *et al.*, 1996: 34). More recent fires in 1997/1998 affected an estimated 5 million ha throughout Indonesia, including 3.06 million ha in Kalimantan. The total economic value of the damage caused by the 1997/1998 fires has been conservatively estimated at US\$4.47 billion, most of which was borne by Indonesia (Glover and Jessup, 1999: 141). It has been estimated that Kalimantan loses more than 500 000 ha of forest every year (MacKinnon *et al.*, 1996: 34), indicating that the threat of forest fires in East Kalimantan remains.

Effects of deforestation on water quality, flow rates and stability of flow for agricultural systems

The forests of LLNP provide measurable benefits through the regulation of water flow rates and sediment loads. In 2001, Dinas Pekerjaan Umum, Proyek Pimpinan Irigasi estimated that the cost of maintaining 1 ha of government-sponsored irrigated land in the face of sedimentation was approximately Rp60 000 per year. The Central Sulawesi Integrated Development and Conservation Project estimated that the cost of maintaining traditionally irrigated land was approximately 15 percent of the cost of maintaining civil works, or Rp9 000/hectare. As a result, it was estimated that the annual protection value provided to irrigated systems by the forested areas of LLNP was approximately Rp584 996 400 (7 528.5 ha at Rp60 000/hectare in government-sponsored irrigated lands were approximately Rp500 000/hectare of government-sponsored irrigation, and Rp75 000/hectare of traditionally irrigated land.

By using these figures, it was also estimated that the annual protection value provided to irrigated agricultural systems by the forested areas of the greater Kelay and Segah river watershed is approximately Rp173.0 million (2 715 ha at Rp60 000/hectare in government-sponsored irrigation, and 1 234.2 ha at Rp9 000/hectare in traditional irrigation).

In areas where excessive forest clearing has led to chronic flooding, the water division of Dinas Pekerjaan Umum has undertaken river training by reinforcing riverbanks with concrete and installing groynes that use gabion baskets and mattresses, which are locally woven from galvanized wire. The cost of protecting 1 km of riverbank in this manner was approximately Rp83.7 million (ANZDEC, 1997). At the community level, it was also recommended that villagers assist bank stabilization by planting vetiver grass and bamboo.

Road maintenance is also undertaken by Dinas Pekerjaan Umum. According to the department, there are no set budgets for road maintenance; funds for road repair as a result of flooding are typically sought via special request or from external funding sources (V. Deschamps, personal communication, November 2001). On review of the most recently available documents, this appears to be the case. Although it is not clear whether funds were secured for the required repairs or not, the cost of periodic road maintenance (which includes roads damaged by floods), was estimated at approximately Rp19 million/kilometre (ANZDAC, 1997).

In addition, when natural forests are converted to agriculture, the ability of those agroecosystems to sustain development is often low (MacKinnon *et al.*, 1996: 535). Conversion often involves hidden costs, including:

• rapid loss of soil fertility after forest clearance, which can only be compensated for by increasing investment in fertilizers;

- loss of sustained yields of forest products;
- increased soil erosion;
- alterations to hydrological regimes of watersheds.

In all likelihood, increased forest clearing will result in greater frequencies of flooding and erosion and will have increasing negative impacts on irrigation systems, riverbanks, infrastructure and households living downstream from cleared areas. The protection value afforded by the forested areas of LLNP and the upper Segah watershed is crucial in maintaining the economic viability of these systems, as well as securing the safety of people living there.

Replenishing and maintaining groundwater reserves

Waters arising from LLNP are an important source of water for some 67 160 households in communities adjacent to and downstream from the park. Much of this water is obtained via deep wells and pumps that are fed from groundwater reserves. Perusahaan Daerah Air Mimum (PDAM), the State-owned water supply enterprise in Palu, provides water to approximately 20 percent of the households and 35 percent of manufacturing industries in the city of Palu. The remainder of households and businesses in the city draw water from wells, or from other sources. In 2001, PDAM had an installed capacity of 210 litres per second, but was only operating at 131 litres per second. Many of its wells were no longer operational owing to overexploitation of groundwater reserves in the city (V. Deschamps, personal communication, November 2001). Depletion of groundwater resulted in loss of pressure for operating artesian wells. PDAM has also closed five of its deep wells owing to a lack of water, and in 2001 drew all of its water from seven deep wells, four springs and four river intakes.

In addition to an imminent lack of water in the city, the water study conducted by Widjajanto concluded that levels of organic compounds were nearing critical levels of acceptability for clean drinking-water (Widjajanto, 2001). The study suggested that increases in these organic compounds were the result of activities linked to agriculture, plantations, communities and home-based industries adjacent to the Gumbasa River. Widjajanto identified fertilizers, pesticides and industrial solvents as possible sources of contamination.

Given these concerns, PDAM began to seek new sources of drinking-water for the Palu. One of the options being explored involved sourcing water from Lake Lindu, potentially in conjunction with hydropower development. In order to develop a facility large enough to accommodate the required capacity of 700 litres/second, PDAM is seeking foreign investment of about Rp200 billion for the intake and delivery system.

Impacts of collaborative management on biodiversity

Additional studies may be conducted to examine the impacts of collaborative management activities on keystone and other significant species of wildlife in the collaborative management area. Previous studies conducted in the Leuser ecosystem in Sumatra indicate that community-based forest management approaches based on Adat can provide socio-economic benefits while maintaining ecosystem integrity (including conservation of keystone species), provided that timber extraction is kept in check (Deschamps, 2000).

SUMMARY

The socio-economic profiles show that almost all rural residents have incomes associated with local natural resource consumption, with some households completely dependent on natural resources for their livelihoods. It estimated that forest-based activities can contribute up to 75 percent of a total local cash economy, as well as providing high levels of basic foodstuffs and building materials, while enabling residents of forest-based communities to attain a lifestyle that is superior to that in other rural areas in the watershed (Table 10). The fact that the system is based on traditional Adat is a definite strength, making it a valid planning approach. Formal recognition of Adat is an important condition for replicating the collaborative model elsewhere.

	Agricultural production	Livestock consumption	Forest products	Total economic benefits
Forest-based	\$324 (22.7%)	\$41 (2.9%)	\$1,058 (74.4%)	\$1,423
Agro-based	\$260 (35.7%)	\$130 (17.8%)	\$338 (46.5%)	\$728
Mixed agro-forest	\$318 (46.8%)	\$68 (10.0%)	\$293 (43.2%)	\$679

TABLE 10 Summary of economic benefits: forest-based, agro-based and mixed systems (US\$)

Research has shown that the most economically productive form of land use is to retain forests for long-term harvesting of non-timber forest products and timber under a sustainable-yield regime. It also indicates that the total financial value of forest resources harvested in this manner is considerably higher than the market value of one year's harvest if all the merchantable timber were extracted in one operation, as is currently common practice (MacKinnon *et al.*, 1996). The profiles presented here support this research, and logic dictates that a collaborative management approach would ensure the sustainability of the system.

However, as an economic system, forest-based economies such as those in Berau have some vulnerable points. The remoteness and lack of access to major centres make the local market for forest products vulnerable to manipulation by traders and intermediaries. Higher-level incomegenerating activities can involve unsustainable levels of timber extraction and forest clearing for cash crop farming. Overuse of these activities can put stress on the ecosystem. This can affect the ability of the ecosystem to provide services to communities, with noticeable impacts on human welfare and health.

The dependency of forest-based communities on forest goods forms the crux of the collaborative management approach. Furthermore, tenure of the forests by dependent communities is key to sustaining livelihoods and alleviating poverty. Whereas much of the capital held in agro-based communities is in the form of livestock (Table 3), the vast majority of capital for forest-based communities is held in the forests that comprise their traditional land bases.

The LLNP socio-economic profile indicates that mixed agro-forest communities are more closely correlated to agro-based communities in terms of their emphasis on agricultural products and livestock inventories (Table 9). This is largely the cumulative result of imported agricultural practices from non-indigenous cultures, decreasing areas of natural forests available for mixed communities to establish natural capital and a lack of understanding of the potential benefits of sustainable exploitation of forest products. It also illustrates the need for resource-based Adat as a means of enabling and managing these opportunities. Other examples where reforestation has been undertaken to support the development of Adat-based management systems exist in Indonesia.

While this assertion may seem simplistic, the relationship between sustaining livelihoods and maintaining ecosystem integrity is very complex. Damage to the ecosystem (e.g., unsustainable logging) or restricted access to traditional land bases (e.g., lack of forest tenure rights) affect the livelihoods of forest-based communities and put them at risk of becoming impoverished. Measures that can be undertaken to avoid such situations include the recognition of traditional land bases, the acceptance of resource-based Adat as a sustainable forest management practice and the use of collaborative management initiatives between forest concessionaires and forest-based communities.

Lessons learned and the way forward

In response to the question posed in the title of this paper, it appears that collaborative forest management approaches are contributing to better forest management and poverty reduction. As demonstrated through these case studies, the promotion of forest-based systems managed through a collaborative management approach and supported by Adat can provide sustainable economic benefits to host communities. The case studies illustrate that the benefits enjoyed by forest-based communities exceed those of communities whose livelihoods are based on agricultural production. The case studies also assist in the development of guidelines and recommendation that will guide TNC, and other proponents of forest-based collaborative management, in developing similar initiatives to benefit rural communities in other areas of Indonesia.

GUIDING PRINCIPLES FOR DEVELOPING COLLABORATIVE MANAGEMENT INITIATIVES

Focus on the link between healthy ecosystems and sustainable livelihoods. TNC's Segah collaborative management project showed that healthy forest ecosystems can provide higher levels of economic benefits than agro-based or mixed forest–agro communities. To the host community, the greatest benefit of these functions is the livelihoods that they support.

Let the community guide the process, but provide sufficient information and expertise to allow it to make informed decisions. TNC's collaborative management projects in East Kalimantan and Central Sulawesi demonstrate that the use of existing management structures (i.e., Adat) supported by focused external resources and the introduction of easily understood new concepts (e.g., management bodies, community conservation agreements) develops project ownership by the community and builds a long-term commitment to conservation (Deschamps, 2004). In order to ensure that communities are empowered with decision-making abilities, it is critical that land tenure/rights of use be formalized without detriment to host communities.

Develop and execute the project with a long-term vision. Activities should be initiated in which the host community has the need, capacity and resources to continue post-intervention. Projects can easily become unsustainable as a result of high levels of external inputs with no clear strategy for supporting capital-intensive activities (e.g., infrastructure) once the primary donor agency has withdrawn. In order to avoid such a situation, a comprehensive exit strategy must be developed by the primary project facilitator.

RECOMMENDATIONS

Specific recommendations for activities that should be undertaken in Indonesia include:

- conduct mapping of traditional resource land bases for indigenous communities;
- document and secure legal recognition of resource-based Adat for indigenous communities, and formulate, document and secure legal recognition of resource-based Adat for non-indigenous communities;
- promote CCAs between logging concessionaires and forest-based communities, with the assistance of NGOs as facilitators;
- promote the reforestation of degraded forests in proximity to agro-based and mixed forest-agro communities in order to provide a potential resource base for forest products (one of the current trends in support of reforestation is the implementation of CDM-compliant reforestation initiatives under Indonesia's ratification of the Kyoto Protocol).

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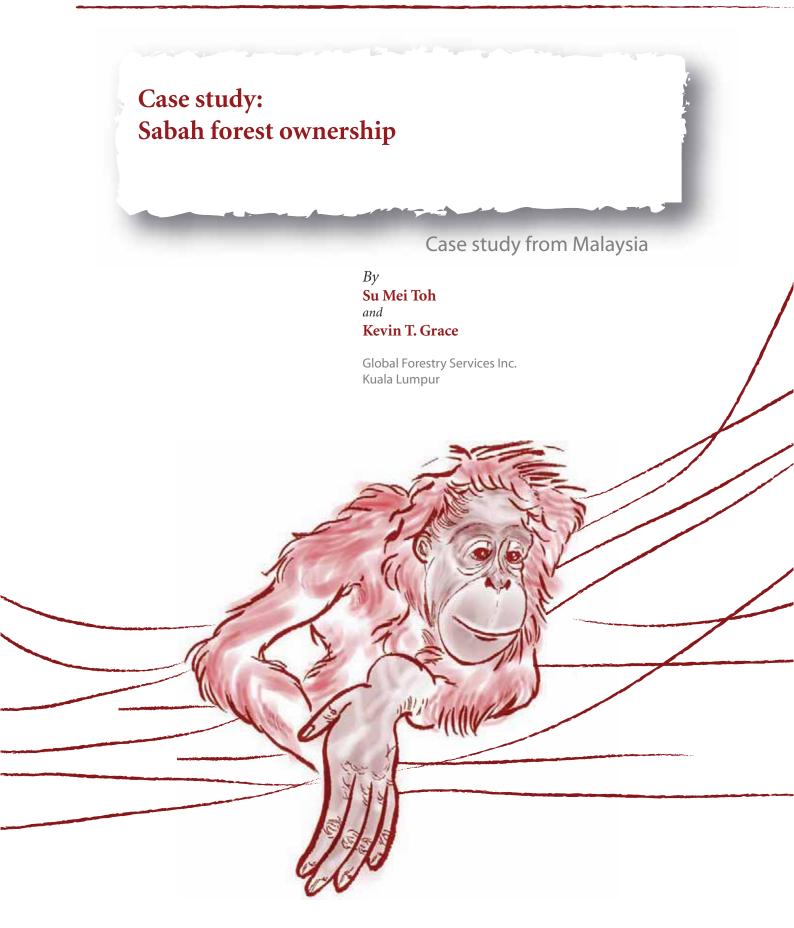
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Summary

This case study looks at various topics related to forest tenureship in the state of Sabah, Malaysia and the implications on the livelihoods of local communities. It includes reviews of landownership and forest tenure systems, land laws, rights issues, community development and poverty in Sabah.

Land tenure and property rights

Land matters in Sabah are controlled by the state government, and claims to landownership have to be approved and registered by the state. Today's land laws are the legacy of laws introduced during the United Kingdom colonial administration, which assumed custody of all land not owned or not continually cultivated by communities. Sabah's Land Ordinance provides some protection for indigenous customary rights, stipulating strict conditions that must be met in order to claim customary land. Property rights fall into three categories: *state property rights*, which cover forest reserves; *private property rights*, which cover land that has been alienated by the state for development, as well as individual indigenous titles; and *communal property rights*, which cover indigenous reserves and the communal titles to customary land that communities apply for. It is not known how much land has been granted to communities under indigenous titles, community titles and indigenous reserves.

Communities tend to have only limited understanding of their indigenous rights as provided in the Land Ordinance, and many communities have not formally registered their traditional claims. This, compounded by gazettement exercises that failed to consult forest communities properly, has resulted in communities losing their customary rights to land when it is gazetted as forest reserve or other protected areas or when it is alienated for development projects. Existing legislation, including indigenous customary rights law, provides some protection to community resources and territory, but the state land laws are generally seen as too rigid and limited, with insufficient recognition of customary laws or Adat.

Sabah forestry and SFMLA

Forest resources in Sabah have been seriously depleted through uncontrolled timber exploitation over the last 30 years, and more recently through large-scale conversion to other uses, especially oil-palm plantations. Sabah's forest policy was restructured in 1997 to address these problems, and the current forest policy and licensing system focus on a total forest management approach rather than just timber harvesting. The policy includes provisions for sustainable forest management (SFM), controlled harvesting, reforestation, the multi-use of forest lands and community development projects.

Short-term timber harvesting licences were phased out to make way for Sustainable Forest Management Licence Agreements (SFMLAs), which provide long-term tenure of 100 years and cover areas that average 100 000 ha each. So far, 12 SFMLAs have been awarded to private sector companies and a quasi-government organization (Yayasan Sabah), covering a total of more than 2 million ha of mostly logged-over forest land. The Sabah Forestry Department (SFD) manages several forest management units (FMUs) and is responsible for approving forest management plans.

Privatization of the state's forest resources is aimed at reducing the state's budget deficits and allowing the state to focus on monitoring and policy-making for consistency and sustainability, while the private sector handles management. However, not all SFMLA licensees have expertise in SFM, and the low quality of forest stock means that the revenues from timber extraction are minimal while the administrative costs of meeting SFMLA objectives are high. Pressure to make land profitable has resulted in growing demand to convert degraded forest to commercial agriculture, especially oil-palm, which is Sabah's main export commodity and enjoys good returns.

After eight years of operation, the SFMLA system does not seem to have improved forest management significantly in most FMUs. Several licences have been revoked because of non-compliance with requirements. However, best practices in forest management have emerged from SFD-managed FMUs, such as Deramakot, which has been certified by the Forest Stewardship Council (FSC). This indicates that in the absence of a strong regulatory environment and suitable financial incentives for licence holders, the certification process is key to achieving good forest management in Sabah.

Communities in forest reserves

It is estimated that up to 25 000 people live in forest reserves and an undocumented number on the fringes of reserves, where they put similar pressures on the forest. SFD started to implement a community forestry programme in 1984 to deal with so-called illegal settlement and cultivation in forest reserves and to improve the livelihoods of forest communities. However, this programme has not significantly improved community livelihoods since its inception. Early projects focused on infrastructure rather than socio-economic development, and were carried out inconsistently, leading to poor results. Early projects also tended to be non-participatory, and a socially acceptable mechanism for co-management with communities has yet to be developed.

However, the community forestry programme has succeeded in paving the way for other government extension agencies to reach indigenous villages. More recent projects stress the importance of community participation and ownership of programmes. Agroforestry (rubber, fruit trees, etc.) is encouraged as a livelihood option for communities and a means of reforesting degraded areas.

SFMLA requires that land within forest reserves be set aside for communities and that community forestry projects be developed. To formalize the presence of communities in forest reserves, SFD has recently introduced the use of Occupation Permits (OPs), which cost 250 ringgits (\$M) (US\$68) per hectare per year. Although the community participates in deciding the duration of and total area covered by the permit, the final decision remains with SFD. SFD's formal acknowledgement of forest communities and their traditional claims to land is a positive development, which can be traced to the requirements of the certification process.

Livelihoods and poverty

Many rural communities are chronically poor, with few or no income-generating opportunities. Sabah has one of the highest incidences of poverty in Malaysia. The livelihoods of indigenous communities are a mix of subsistence agriculture, small-scale livestock rearing, collection of forest products and, where accessible or possible, cash cropping. Livelihood strategies are very diverse, depending on many factors such as traditional and cultural values, access to markets and towns, availability of secure land tenure and opportunities for wage labour.

The lack of available land is one of the greatest challenges facing communities, especially those with no legal claim to their customary land within forest reserves. These communities are restricted from clearing additional land for their own use or cash cropping, which effectively limits their livelihood options. An analysis of case studies suggests that the determining factor in improving rural livelihoods may be access to land rather than access to forest resources. There is also little evidence that forestry *per se* has a role in poverty alleviation; other factors – such as secure land tenure, commercial agricultural production, and proximity to transport infrastructure and markets – would seem to be far more important.

Meeting SFMLA requirements for community development through a combination of occupation permits and agroforestry projects could improve land tenure security and the livelihoods of communities in forest reserves, but this approach is still at its very early stages of development.

Conclusion

Although SFD is on the right path with its prescriptions and emphasis on SFM, there is no clear evidence that this has brought benefits to forests or community livelihoods. The main obstacle may be financial, but there is also a lack of vision among the private enterprises and the state. Currently, best practices in forest management can only be seen in SFD-managed FMUs that have either already been certified or are undergoing the certification process.

The state must find ways of making long-term forest management an economically attractive option compared with alternative land uses such as oil-palm that destroy both forest and community lands. Licensees and local communities need to be aware of the value of SFM and forest rehabilitation. The focus on agroforestry in community forestry projects bodes well, and should be encouraged as part of a policy that encourages diversity of land use and promotes livelihoods for indigenous communities. The state must also review its relevant policies and be open to innovative solutions that provide more equitable outcomes for communities with traditional claims to land.

Introduction

OBJECTIVE

The objective of this study is to improve understanding of the relationship between forest resource tenure and forest management, and the implications for the livelihoods of rural forest-dependent communities in the state of Sabah, Malaysia. It forms part of FAO's regional study of trends in forest ownership, forest resources tenure and institutional arrangements in Asia and of how these affect forest management and poverty levels in selected countries.

In accordance with the objectives of the FAO study, this Sabah case study includes a quantitative and qualitative analysis of forest tenure, access to forest resources, management agreements, institutional and other informal arrangements, and the position of indigenous communities. Along with other case studies from the region, it aims to:

- identify the trends in institutional arrangements and management agreements, and their contributions to sustainable forest management (SFM), local livelihoods and poverty reduction;
- identify the possible influences of forest ownership and forest management systems on forest law compliance and the monitoring and evaluation of forest use;
- compile detailed data on forest ownership and management arrangements in the region;
- contribute to an overview of ownership and management arrangements in the region.

The outcome of the FAO study will be a better understanding of how rights and responsibilities are linked to ownership, use and management type for forest resources in Asia, and of how these rights and responsibilities are respected and exercised. This information will inform forest policy development and implementation, and help to address the roles of forests in poverty reduction in the region.

METHODOLOGY

The authors sought quantitative data on forest ownership and management agreements from the Sabah Forestry Department (SFD). They also carried out a literature review of available reports and studies, and held consultations with relevant state government departments, non-governmental organizations (NGOs), consultants and other individuals. In addition, they attended a community stakeholder workshop in the town of Telupid at which the views and perspectives of three village communities (Kg. Mangkuwagu, Kg. Saguon and Kg. Tampasak) in the Mangkuwagu Forest Reserve were obtained. Valuable insight to the case study was provided by Global Forestry Services (M), which has long experience of working in forestry management issues in Sabah.

STUDY APPROACH

The main focus of this case study is the management of forest reserve land, mainly Class II Production Forests. As forest and land tenure issues are inseparable in Sabah, the study also incorporates discussion of land rights, especially customary rights.

During research, it emerged that facts and figures for certain components of the study were difficult to obtain. In addition, the Sustainable Forest Management Licence Agreement (SFMLA) is still a relatively new approach to forest management, and few studies of its impacts have been carried out. Because of the limited time available for research, the study leans towards qualitative information and perspectives from government and non-governmental sources.

The formal and legal context

LAND AREA AND OWNERSHIP IN SABAH

As in the rest of Malaysia, in Sabah the state government controls all land matters and owns most of the land, including forest land, for which there are no registered and approved claims. Claims to land ownership or tenureship have to be approved and registered by government mechanisms. Formal tenures are always related to land, and not to forest or mineral resources.

Sabah's land laws are a legacy of similar laws introduced by the United Kingdom colonial administration, which assumed custody of all land not owned or under continual cultivation by communities. Today, property rights in Sabah fall into the following three categories:

- State property rights. Land under this category is known as "state land"; forest reserves are also considered state property.
- Private property rights. These apply where the state has alienated land for development. Usually, this means oil-palm or other tree plantations owned by private sector companies or individuals. The Land Ordinance, Part IV provides private ownership rights for individuals (indigenous title) and communal property rights (communal title) for community ownership.
- Communal property rights. Communities can also gain communal property rights through applying for an indigenous reserve. This differs from communal title in that the community cannot transfer these rights to other parties. There are also restrictions on land use, and a Board of Trustees must be established to manage the indigenous reserve. Although communal property rights are enshrined by law, only a very small area is currently gazetted under them.

As details on land area under these categories are not available, the study can only provide data on land under forest reserves and national parks. The total land area under these two categories is approximately 3 864 000 ha, or 52.5 percent of the total land area of Sabah (7 362 000 ha). As well as the forest reserves, other state land is forested. The area of this land is not known, but most of it is earmarked for development projects (alienated), particularly agriculture such as oil-palm plantations. In 2003, the area under oil-palm cultivation was 1 076 000 ha, or 87 percent of the total 1 255 000 ha under agricultural cultivation.

STATE PROPERTY

Forest reserves

Forest reserves are classed into seven categories (Table 1), and most of them are under the jurisdiction of SFD. There are 3 594 515 ha of forest reserves in Sabah (48.8 percent of the total land area), 2 685 119 ha (75 percent) of which are in Class II Commercial Forest for production purposes. Class III Forest Reserves, or domestic forest reserves, were established mainly to provide forest areas for local communities to hunt, fish and collect minor forest produce for their own domestic use, subject to permits. The area in this class is 7 355 ha, only 0.2 percent of the total forest reserve area.

Class IV Forest Reserves, or amenity forest reserves, were established mainly to provide recreational opportunities for the general public. The total area in this class is 20 767 ha, 0.6 percent of the total forest reserve area.

Four classes may be regarded as protected areas: Class I Protection Forests, the main function of which is to safeguard water supplies, soil fertility and environmental quality; Class V Mangroves; Class VI Virgin Jungle Reserves, which comprise 50 relatively small areas intended to provide undisturbed forest for research purposes and the preservation of gene pools; and Class VII Wildlife

Reserves, which are for the protection of wildlife and are managed by the Sabah Wildlife Department.

A forest reserve is gazetted under the provisions of the Forest Enactment of 1968, which requires notices to be posted to forest communities to allow for objections. It is widely known that this requirement was often not properly observed in the past, and many communities were not aware that their customary land had been included in a reserve until logging activities started (according to information from the Partnership of Community Organizations [PACOS]). The future of indigenous communities whose lands have become part of forest reserves or protected areas depends on the government agencies tasked with managing these forest lands, e.g., SFD for forest reserves and the Sabah Parks Authority for national parks.

Class		Size (ha)	%
1	Protection	342 216	9.5
11	Commercial	2 685 119	74.7
Ш	Domestic	7 350	0.2
IV	Amenity	20 767	0.6
V	Mangrove	316 024	8.8
VI	Virgin Jungle	90 386	2.5
VII	Wildlife Reserve	132 653	3.7
Total		3 594 515	100

TABLE 1 Forest reserve classes and areas

Source: Sabah Wildlife Department: www.sabah.gov.my/jhl/.

Forest management units and SFMLA

Prior to 1997, several types of licence for commercial timber harvesting were issued by SFD. These included:

- timber licence agreements, valid for 21 to 25 years (no longer issued);
- special licences, valid for five years (no longer issued);
- Form 1 Licences, valid for one to three years (the only type of licence that is still issued by SFD).

Forest lands in Sabah are divided into 27 forest management units (FMUs) that comprise both state land and commercial forest reserves. FMUs are essentially administrative districts that have been delineated according to their management history, relationship to administrative districts, natural boundaries, etc. (Mannan and Yahya, 1997). The division into units is primarily for operational convenience and provides "a framework for changes that may be required in the future during the implementation of SFM in each unit" (Mannan and Yahya, 1997). FMUs average 100 000 ha in area and each is the administrative boundary of a District Forest Office. In September 1997, the timber licence agreement and the special licence were replaced by SFMLAs, which are valid for 100 years. So far, 12 SFMLAs have been awarded to private enterprises and a government social organization (Yayasan Sabah), covering a total of more than 2 million ha (Table 2).

In addition, long-term licences have also been issued for three large areas that are not directly under SFMLAs and are meant for conversion to plantation (shown in italics in the last three rows of Table 2). Sabah Forest Industries has been planting *Acacia mangium* for chipwood, and KTS started to plant a small area of rubber trees as plantation wood but stopped because of financial issues. Benta Wawasan is registered as a separate organization, but is actually managed by Yayasan Sabah; it has been using subcontractor companies to clear large areas within its licensed area.

As well as SFMLAs, SFD also issues Form 1 Licences for timber harvesting in forest reserves and on state and alienated land. Depending on the size of the area, these licences may be issued for a period of one to five years. In the last five years, 134 Form 1 Licences have been issued, covering a

total of 154 540 ha. The annual number of licences and area covered have declined substantially over this period, from 55 licences for 49 272 ha in 2000 to just five licences for 3 427 ha in 2005.

SFMLA licence no.	Organization	FMU no(s).	Area (ha)
SFMLA 01/97	Idris Hydraulic	8, 13	234 552
SFMLA 02/97 (cancelled)	Bugaya Forests	25	119 695
SFMLA 03/97	Bornion Timber	11	108 993
SFMLA 04/97	Sapulut Forest Development	14	95 300
SFMLA 05/97	North Borneo Timber Corp	2	94 227
SFMLA 06/97	Timberwell	3	71 293
SFMLA 07/97	TSH Resources	4	123 385
SFMLA 08/97	Anika Desiran	5	101 161
SFMLA 09/97	Yayasan Sabah	15, 16, 20, 21, 22, 23, 24, 26	599 828
SFMLA 11/97	Lembaga Tabung Haji	18	10 117
SFMLA 12/97	Total Degree	18	4 047
SFMLA 13/97 (cancelled)	Support Axis	18	6 070
JP(SLK) 125/93(CO)	KTS Plantation	19	57 240
JP(KSG)107/96(CO)	Sabah Forest Industries	7	276 623
JP(TKA)122/96(CO)	Benta Wawasan	21, 22, 23, 24, 26	106 310
Total			2 008 841

TABLE 2 SFMLA licence holders and area

Role of SFD

With this change in licensing arrangements, the responsibility for SFM is shared between SFD and the private sector. The licensee posts a \$M5 million bond on award of the SFMLA. SFD trains the licensee's personnel, provides guidance and pursues continuous improvement of the technologies and skills needed for SFM. This framework emphasizes self-regulation by the licensee, and provides for third-party certification, while SFD has a more administrative role in supporting the implementation of SFM. In addition, SFD also manages 331 814 ha of forest lands, which include Deramakot Forest Reserve, Trus Madi, Tangkulap-Pinangah Forest Reserve and FMU 25 (formally held by Bugaya Forest).

SFD staff monitor the SFMLA companies regarding their performance according to their forest management plans. These plans are approved by SFD and include silviculture, rehabilitation and the use of reduced-impact logging systems in areas approved for harvesting. SFD rescinded SFMLA 02/97 in 2005 for non-compliance with the conditions of the agreement. It did this without calling for an independent third-party evaluation of the company's operations, but it now uses third-party specialists to audit companies that are perceived as not complying, and maintains its option of revoking the agreement and taking back management of the FMU.

Community forestry

Under SFMLA, licence holders are required to address community issues and are responsible for implementing community forestry (CF) projects within their respective FMUs, if there are communities living within their forest boundaries. They address CF in their forest management plans, and the responsibility for planning and implementation remains with the licensees. To date, eight SFMLA holders have identified a total of approximately 33 654 ha within their FMUs to be set aside for CF projects, and SFD manages a further 7 000 ha within its FMUs for CF projects. In total, approximately 40 654 ha, a mere 1.5 percent of the total area under FMUs, has been set aside for CF, and not all of this is necessarily being implemented.

SFD introduced CF in 1984 to deal with problems of illegal settlement and cultivation in forest reserves (Martin, 2004). It was also used to satisfy Section 41 of the Forest Enactment of 1968 and Rule 8 of the Forest Rules of 1969, which permitted local inhabitants to take forest produce for the construction of dwelling places, fuelwood, fencing, etc. (Martin, 2004). However, CF did not develop fully into a state-wide programme to improve communities' livelihoods until 1997, when the then Social Forestry Section of the Management and Control Division of SFD drew up guidelines

for improving the planning and implementation of CF extension programmes, which became the responsibility of the District Forest Offices (Sinajin, 1997). Currently, the Forest Management Plan and Social Forestry Unit is responsible for overseeing CF programmes. Such programmes have to address livelihood issues, as well as contributing to infrastructural development in local villages.

In 1989, SFD created a trust called the Community Forestry Cess Fund, which was collected from timber companies at the rate of \$M0.83/m³ on all logs exported or processed and was used to finance CF projects. The CF concept is limited in terms of both area covered and incentives to promote SFM and contribute to poverty alleviation. This issue is discussed in more detail in the section on Forest tenure systems and communities.

Other state land

Forest land on state land is not officially protected, and the state has the right to alienate such land for development. Timber harvesting on state land requires a Form 1 Licence issued by SFD. This licence is issued concurrent with the validity of a Temporary Occupation Licence, which is issued by the Land and Surveys Department. As the land is destined for agricultural development at a later stage, the licence does not impose a minimum felling diameter. Only royalty, premium and cess for CF development projects are imposed through fees to the state. In the five years from 2000 to 2005, 46 Form 1 Licences covering a total area of 46 530 ha of state land were issued for timber harvesting. When the licensed land area exceeds 500 ha, an environmental impact assessment is required.

Protected areas

The Sabah Parks Enactment of 1984 gazetted three terrestrial national parks – Mount Kinabalu, Crocker Range and the Tawau Hills – which are under the authority of Sabah Parks. These areas contain important highland forest ecosystems and facilitate tourism, especially Kinabalu Park. They cover a total area of 243 216 ha.

As with the gazettement of forest reserves, the rights of communities living within the boundaries of national parks are extinguished. The frequency with which this occurs across the state is an indication of the fragility of local communities' rights in Sabah. The Parks Enactment does not provide legal rights for indigenous people to remain in the protected area, but each park manages the issue of communities separately. In the Crocker Range National Park, for example, Sabah Parks allows communities to remain in their traditional areas and is working with them to designate traditional use zones within the park area, which will be addressed in the park's management plan. In other parks, some villages have been relocated outside park boundaries.

PRIVATE PROPERTY

Indigenous customary land

In Sabah, communities' rights to their traditional land have not been respected, nor have communities been consulted when forest reserves and other protected areas are gazetted, or when the state alienates land to logging and oil-palm concerns. The land and traditional areas that indigenous communities considered their own have fallen under the control of various state departments.

The laws concerning land tenure and landownership in Sabah are characterized by legal pluralism. Two main institutions determine landownership and tenure rules for indigenous communities in Sabah: the Sabah Land Ordinance, and indigenous customary law, or Adat, which is a comprehensive system of traditional rules for a whole range of issues for the organization of communal life. Adat includes systems for inheritance, access to land, land clearance techniques, what can be cultivated, etc.

The Land Ordinance provides a degree of protection for indigenous customary rights through the codification of aspects of the Adat laws. However, Adat is inherently complex and Adat land use is changeable over time and according to circumstances – factors that a codified law such as that for indigenous customary rights cannot capture. The provisions for indigenous customary rights apply to:

• land that is possessed by indigenous customary tenure;

- land that is planted with at least 20 fruit trees per acre;
- land that is planted with fruit trees, sago, rattan and other plants of economic value;
- land that has been cultivated or built on within the past three years;
- grazing land stocked with cattle or horses;
- burial grounds and shrines;
- rights of way for people and animals.

There are serious shortcomings to these provisions. Indigenous customary rights apply only to land that is in active use; Adat does not recognize land lying under fallow or set aside. Indigenous customary rights are formally recognized when a community registers a claim at the district land office, and although they are not issued as titles, rights claims should last forever. Each family is allowed to register no more than 15 ha as indigenous land, but collectively communities traditionally reserve far more under Adat, and for future uses (D. Lasimbang, personal communication). The total area of land claimed under indigenous customary rights has not been calculated, but is believed to be insignificant. Use of the indigenous customary rights provision is problematic, and discussion of this is elaborated in other parts of this study.

Private (alienated) land

State land earmarked for development can be alienated and held in private ownership by corporations and individuals. The owner of the alienated land is required to supply a certified copy of the land title to SFD for issuance of a Form 1 Licence for timber harvesting. As alienated land is meant to be clear-felled for development purposes, no minimum felling diameter is imposed. The licence holder has only to pay the state a royalty and cess for CF development projects on logs extracted from alienated land. If the land area exceeds 500 ha, it is subject to environmental impact assessment. Between 2000 and 2005, 26 Form 1 Licences were issued for timber harvesting on private alienated land, covering a total area of 30 302 ha.

Changes and trends

Historically, Sabah is rich in forest resources, but over the last 20 years the emphasis on developing the state's economy has led to significant and drastic changes in the landscape. Historically, forest resources were logged on the basis of market demand for just a few known species, mostly for the European market. As the state developed, easily accessible forest land was harvested and cleared for conversion to agriculture. The main crop now covering Sabah is oil-palm, which provides a significant source of income to the state and is the main export product. The value of forest land is considered as a one-off payment from logging, while oil-palm yields a continuous income from the third year after planting for about 25 years.

TRENDS IN FOREST MANAGEMENT

When Sabah's state-wide forest inventory was first completed in 1972, the resulting maps clearly showed the availability of timber resources throughout the state. Inadvertently, these encouraged the timber industry to increase logging rates to such an extent that during the 1970s the revenue from timber royalties accounted for 80 to 90 percent of the state's budget, amounting to \$M1.1 billion in 1979, for example. Meanwhile, the de-reservation of forest reserves continued throughout the 1970s and early 1980s. The period of intensive logging in Sabah, which started in the 1950s, reached its peak at this period. A second inventory in the late 1980s showed where the remaining good forests were, and the cycle of exploitation was repeated.

In the words of the director of SFD (paraphrased from Mannan and Yahya, 1997), the following are some of the key factors that have caused "massive depletion of forests":

- harvesting beyond the forest's ability to regenerate;
- not allowing forests to recuperate after logging through premature "re-entry" or "re-logging";
- damage to residual stands because of bad logging practices;
- abandonment of silviculture and forest rehabilitation;
- revenue priority overruling environmental limits;
- political changes and instability;
- the forestry profession's inability to exert influence on powerful groups.

It has been estimated that the area of primary forest cover dwindled from 2.8 million ha to about 300 000 ha between 1975 and 1995 (Mannan and Yahya, 1997). During the same period, the area of disturbed forests nearly doubled, from 1.4 million to 2.5 million ha. Total forest cover decreased from 5.5 million ha (or 75 percent of Sabah's total land area) in 1975 to 4.3 million ha (58 percent of total area) in 1995. By far the most drastic change was in the primary forests of Class II Production Forest, which dropped from 98 percent of cover in 1970 to a mere 15 percent in 1996 (Mannan and Yahya, 1997).

The first major change in forest laws occurred in 1984, when the Forest Enactment of 1968 was revised. Forest reserves were divided into seven classes, all existing forest reserves were regazetted to include the new classes of forest, and new reserves were gazetted (for example, Deramakot Forest Reserve became Deramakot Forest Reserve, Class 2 Production Forest). With this change, forest reserves could no longer be reclassified within SFD; any changes to the classification of forest reserves, especially those in Class II Commercial Forest, required the approval of the State Cabinet and the Governor of Sabah.

The repeated logging of the past has devastated much of Sabah's forest area. The timber that survived in these areas was considered to be of poor quality and not good for export or local markets. As the availability of valuable hardwood species declined, so did the rate of logging, but this did not stop forest lands from being depleted further. The development of oil-palm plantations began in earnest, especially in the late 1980s and early 1990s. Many of the private owners of these plantations come from Peninsular Malaysia seeking the cheaper, abundantly available land in Sabah. Degraded forests were degazetted and cleared to make way for plantations, and the rate of conversion to oil-palm was extremely high. In 1995, there was an estimated 629 431 ha of oil-palm, which had risen to 1 076 775 ha^{ss} by 2003, when it accounted for 86 percent of the total 1 255 361 ha of cultivated land in Sabah. This was an increase of 71 percent in eight years.

In 1997, several changes occurred. The continued deterioration of Sabah's forest was evidence that the 1984 changes to the Forest Enactment had been insufficient to protect forest resources and improve forest management. State policy was amended to replace short-term with long-term licences (i.e., SFMLAs) in order to encourage better management of forests. The objective is now to conserve the remaining forest lands and manage them sustainably in order to improve long-term timber productivity and environmental protection. Conditions for the licences are based on a model forest project in Deramakot Forest Reserve, which is managed by SFD within FMU 19 and has been certified as "well managed" in meeting the principles and criteria of the Forest Stewardship Council (FSC).

TRENDS IN COMMUNITY INVOLVEMENT

The main threats facing local communities in Malaysia include those shared by others worldwide: poverty, land rights issues, and the loss of cultural heritage through assimilation and exposure to modern capitalism and commercialism. In Malaysia, the major concern relates to the lack of recognition and protection of indigenous rights to land and natural resources, which are vital for the survival and development of communities. Other concerns relate to indigenous communities' rights to traditional ways of life and to determine what kind of development they want, and their rights and access to education and other basic facilities. The traditional lands of indigenous communities are often exploited or alienated to development projects (e.g., logging or oil-palm) or protected areas.

The growing recognition of indigenous rights at the international level has also helped increase awareness among communities and NGOs in Malaysia, especially regarding sensitive land rights issues. However, progress has been slow, hampered by bureaucratic and institutional obstructions and the remoteness of some of these communities, which makes outreach work difficult. Nonetheless, in tandem with international trends, social issues – especially traditional use rights (as opposed to land rights) – are starting to be addressed within the state's forest management.

Community forestry

An estimated 20 000 to 25 000 people live within forest reserves, and an unaccounted number on the fringes of forest reserves, where they put similar pressures on the forest. Most of these people are chronically poor, with little access to basic facilities and amenities, and many still practise shifting or rudimentary cultivation methods to meet subsistence needs. SFD considers the forests within the vicinity of these populations as under threat of further encroachment and degradation. The department's CF programme was directed to the impoverished villages that were affected by logging activities in the 1970s and 1980s, which had left them more destitute by degrading the forests. In the mid-1980s, demands for community control over resources started to be made, and SFD found willing communities to engage in community projects, the first of which started in 1984, in Kg Minusoh in the Kinabatangan Division.

In the 1980s and 1990s, the CF concept and projects were criticized for focusing only on village infrastructure projects, such as provision of wooden houses, roads, water and electricity supply, and not paying enough attention to improving the socio-economic status of communities. Poor planning and implementation were blamed. To-date, the socio-economic or ecological benefits of CF projects have not been evaluated, even though approximately \$M40 million from the

⁵⁸ An Institute for Development Studies report (IDS, 2005) states that Sabah has the highest oil-palm planted area in Malaysia, with 1.2 million ha in 2004.

Community Forestry Cess Fund has been spent since 1984. According to SFD, the main benefit has been in paving the way for other government agencies to bring development to the villages. However, such government development itself also faces problems, particularly a lack of funds and insufficient cooperation among participating government agencies. As a result, planned livelihood activities such as bamboo and rattan planting, fish rearing and paddy cultivation failed to take off, and further CF projects have tended to concentrate on the "safe" side, i.e., infrastructure development. SFD's own analysis of the problems highlights weaknesses in the early concepts, planning and implementation of CF programmes. These include:

- insufficient cooperation and coordination among different government extension agencies;
- low prioritization, commitment and support for CF projects among government agencies;
- lack of community participation: communities were not involved from the beginning of planning and decision-making for projects, and they were insufficiently informed about the aims and objectives of projects;
- cultural differences between extension personnel and communities, which created communication gaps;
- lack of cohesiveness and internal problems within resettled villages, e.g., land and boundary disputes, lack of ownership of the project, and dependency on government handouts.

SFD has introduced more participatory methods of planning and implementing community projects and, in light of past problems, no longer encourages community resettlement projects. The current trend is to help communities to obtain formal tenure of their traditional lands⁵⁹ and to assist and support community-led projects to improve community livelihoods, in partnership with other government and non-governmental organizations. SFD is pursuing this in the FMUs under its management, which will be presented as models for the CF projects required by SFMLA.

ECONOMIC INDICATORS AND POVERTY IN SABAH

Sabah still lags behind other Malaysian states in terms of per capita gross domestic product (GDP) and growth, despite its wealth of natural resources, immense revenues from logging over the last 40 years and current lucrative export commodities. It is currently the third poorest state in Malaysia, after Kelantan and Terengganu (*Borneo Post*, 24 July 2005). In 1990, 34 percent of Sabah households had incomes below the poverty line (EPU, 2004), rising to 39 percent in rural areas.

Palm-oil⁶⁰ products and crude petroleum are the dominant export commodities. Together, they made up almost 60 percent of Sabah's total export revenue in 2004. Tourism, the fastest growing sector of the economy, is the fourth largest foreign exchange earner, after these two and plywood (IDS, 2005).

Despite positive growth in Sabah,⁶¹ which is based heavily on commercial agriculture and forest resources therefore suggesting high levels of agricultural employment, the wealth generated has largely by-passed the state's chronically poor, i.e., the rural indigenous communities. Many poor communities still lack basic necessities and services (Table 3). In addition to their isolation from the benefits of state development programmes, these communities also generally receive only very low wages from logging and plantation companies. Villagers prefer to work on their own plots (paddy, fruit trees, and some rubber and oil-palm) or home gardens for subsistence.

⁵⁹ Ownership is not an option within forest reserves and protected areas; see the subsection on Legal tenures in forest reserves for further discussion of Occupation Permits (OPs) for indigenous communities.

⁶⁰ Oil-palm is the most lucrative agricultural commodity: palm-oil products (palm-oil and palm kernel oil) was Sabah's largest export revenue earner in 2004, with an estimated value of \$M7 602 490 000, or 37.6 percent of total exports. This was expected to reach \$M8 448 010 000 in 2004 (IDS, 2005). The current world price of palm-oil is \$M1 350 per tonne; the cost of producing 1 tonne of oil is \$M800 in Peninsular Malaysia (*The Star*, 12 August 2005, p. 4), and thought to be less in Sabah.

Sabah.⁶¹ Real GDP of 6.3 percent in 2003 was projected to expand to between 6.5 and 7.0 percent in 2004 and then to steady to about 6.0 percent for 2005.

Observations from the Telupid workshop indicate that some communities are in conditions of absolute poverty. The concerns aired by the villages reflect a generally felt lack of basic government support: inadequately staffed schools, unaffordable school fees, malnourishment, diseases (particularly malaria and diarrhoea), lack of medicines, lack of land for subsistence agriculture, and polluted water sources from nearby oil-palm plantations and mills. Many subsistence communities have no external income, and access to basic services such as education requires money. Entrenched poverty in forest communities is also caused by the lack of land and financial resources needed to cultivate economic crops. This is particularly true of communities in forest reserves that do not have any kind of recognized land tenure.

TABLE 3 Poor households' access to basic utilities and services in Sabah

Utility and services	% of poor households with access
Electricity	47%
Piped water	20%
Educational facilities (receiving textbook assistance)*	85%
Health care (facilities within 5 km of household)	35%

* This apparently high percentage masks the fact that many local people cannot afford school fees, and the teachers assigned to rural schools sometimes fail to turn up.

Source: Sabah Department of Statistics.

Poverty and land policy

The high occurrence of poverty among rural indigenous communities may also be linked to Sabah's ambiguous land policy. Indigenous land applications can take decades to process, while private companies and government agencies can easily obtain Temporary Occupation Licences on state land, and are able to "evict natives quite easily" (Doolittle, 2004). Consequently, many indigenous farmers work on land that they do not legally own (IDS, 1987; Martin, 2004). The number and areas of indigenous titles in Sabah are not known.

One reason for the long wait while land applications are processed under the Land Ordinance is because "it typically took as long as ten years to get the land … surveyed" (Long *et al.*, 2003). However, land applications can be expedited by those who can afford to hire private surveyors. This has been cited as a major factor for the success of one application where there are many applications for one piece of land, and it means that indigenous farmers can easily lose their claims to outsiders and companies.

However, indigenous titles do not guarantee security; the Land Acquisition Ordinance contains 14 different enactments that provide for the compulsory acquisition of land by the government without a preacquisition hearing (Doolittle, 2001).

State policies also make it easy for corporations to acquire indigenous lands through provisions that grant "indigenous" status to corporations, which can then be entered into the land register as preserving the status of indigenous lands, even though their large-scale development projects do not benefit the community directly (Doolittle, 2001). In short, land policies in Sabah favour large-scale land development projects over subsistence uses, and private over communal ownership, which puts indigenous communities at a disadvantage. According to Doolittle (2001), "transparency, democracy and accountability are completely lacking from these government policies".

Forest management under SFMLA

Forest management is just beginning in Sabah with the SFMLA system. Under the previous timber harvesting licence system companies were permitted to extract all commercial timber (greater than 50 cm diameter) from the licensed area for a period of between one and 20 years. Under short-term licences, companies focused on immediate economic gains from timber extraction without regard to the value or environmental conditions of the residual forest stand. Forest resources were not managed, but merely extracted without regard to the sustainability of resources for future generations or as future sources of revenue for the state. According to SFD, 93 percent of Class II Forest Reserves are now logged-over and classified as secondary forests. Indiscriminate logging under short-term licences has left most secondary residual stands in very poor condition.

To address the situation and protect future timber resources, in 1989, SFD initiated a long-term project on the Deramakot Forest Reserve (55 000 ha) – a logged-over Class II Production Forest Reserve – in a joint collaborative programme with the German Agency for Technical Cooperation (GTZ). This was the first forest to be managed under SFM principles. In 1997, Deramakot became Malaysia's first certified forest and a learning model for SFM in Sabah and Malaysia.

Keen to expand the model to the rest of Sabah, the state officially initiated the expansion of SFM to all FMUs with the issuance of SFMLAs in 1997. The inclusion of the private sector in managing FMUs was a response to the large costs and resources involved in SFM implementation, which the state was unable to provide. Partnership with the private sector was therefore seen as the best way of implementing SFM more effectively and quickly. The awarding of long-term 100-year SFLMA licences to private companies is to provide security of management tenure so that the companies will manage forests as a sustainable resource. An "intergenerational" contract was seen as essential for the successful implementation of SFM.

The state also requires that companies tendering for SFMLAs have experience in forestry and demonstrate the necessary financial stability to invest in forest silviculture and rehabilitation within the secondary logged-over forest areas. Companies need to place a \$M5 million performance bond as part of the SFMLA, and must demonstrate compliance to terms and conditions that contain specific requirements on management and silviculture. Companies that do not demonstrate such compliance may have their agreements cancelled by SFD, and lose their bonds.

OPERATIONS

SFMLA includes a number of management prescriptions and long-term management planning that are designed to follow the Deramakot Forest model. These address the following elements, which are critical to SFD:

- "total" forest management, encompassing sustainable and environment-friendly harvesting, forest rehabilitation, silviculture, training, etc.;
- safeguards against non-compliance;
- provisions for capturing forest rents;
- preparation of a management plan before operations are allowed;
- third-party assessment of compliance or non-compliance;
- employment of trained personnel including foresters and field staff;
- licensee's sole responsibility for financing all SFM costs;
- performance bond guarantees;
- security of tenure and legal protection;
- forest protection by the licensee.

One major change from the previous licensing system is that under SFMLA, each FMU is required to have a ten-year management plan, and the forest is zoned into different classifications: production, protection/conservation, community forestry, and research. Areas delineated for protection are normally based on topography and aim to protect steep slopes of more than 25 degrees and permanent streams. Some lowland forest is conserved to protect habitat for animals, such as elephants in part of FMU 19. Under SFMLA, companies are required to conduct environmental and social assessments as part of the forest management planning system. They must also submit annual work plans and comprehensive harvest plans for each logging block, based on reduced-impact logging systems. These major planning elements form the basis for forest management, which was lacking under the previous short-term licensing system. SFD is responsible for approving all management and operational plans, as well as monitoring the activities of licence holders.

SMFLA and associated requirements therefore provide the basis for forest management, but there are still deficiencies in implementation of the system. Independent evaluation of forest management under SFMLA has not been well developed, with only ad hoc evaluations being contracted. At present, the progress that companies have made is critically and independently assessed only when a company applies for certification or assistance in meeting the standards.

Capacities

Most of the companies that were awarded the earlier SFMLAs were logging companies with little management expertise, so SFD had to support them in the development of long-term forest management plans. In addition, most SFD staff were accustomed to working under the simple short-term logging licensing system, which only focused on timber extraction. They were therefore more used to monitoring logging activities, especially the measurements and movement of logs extracted from the forest. The current SFMLA requirements are much broader, encompassing resource, environment and social elements that are unfamiliar to many field staff members.

State forestry personnel have limited capacity in professional forestry. There are too few professional foresters on the field staff to monitor harvest planning and current logging activities. For example, in the Tongod District Office, which covers more than 400 000 ha, there are only 33 forestry officers and 25 rangers – this means one ranger to every 40 000 ha. According to the office, there is also only one vehicle for every 60 000 ha.

The companies with SFMLAs are based on logging activities that do not require professional foresters, so their staff and contractors do not understand how to manage forest for the long term, according to the requirements in SFMLA or for certification.

Another severe restraint is the capital required to manage and rehabilitate the vast areas of logged-over forest lands that are poorly stocked because of previous logging. Owing to the poor state of much forest land within the FMUs, licence holders do not obtain good yields, so they generate little revenue relative to the expenditure required to rehabilitate the forest for future production. As the Deramakot experience shows, SFM in Sabah needs capital and human resources that are not readily available locally.

Conversion threat

Most FMUs were previously logged under short-term logging licences, and the quality of the residual forest resources varies, with many areas that could be considered degraded. At present, there is no standard or system to evaluate degraded forest land in Sabah. Because significant portions of many FMUs have poor-quality forest stands, licence holders are putting pressure on SFD to allow plantation development – as provided for in SFMLA – on areas of less than 15 degree slope that account for less than 15 percent of the licensed area. However, some of the areas for which licence holders apply for plantation development may not fall within the poorly stocked forest areas. There is significant pressure from many sectors to convert forest land to oil-palm as a higher-value land use; this creates a dilemma for SFD, which is now focusing on maintaining existing natural forest lands and improving management for long-term sustainable resources.

EFFECTIVENESS OF SFMLA ON FOREST MANAGEMENT

The SFMLA changes have not been smooth. Even with multiple checks and long tenure, several licence holders have not complied, resulting in the revocation of licences.

The 100-year tenure of SFMLAs should provide the stability for companies to make long-term investments in developing forest resources, but this is not happening. Local companies still look for the short-term profits that conventional logging systems provide, and do not fully understand the long-term economics of forest management. Through establishing SFMLA and enforcing the terms of the agreement, Sabah has set up a mechanism to provide long-term sustainable management if companies can obtain sufficient areas of quality forest to generate cash flow while reinvesting in silviculture and rehabilitation. If there is no positive cash flow from logging, the FMU licensee will need to use external investment to support the forest enterprise.

The current state of forest management in Sabah demonstrates that much work still needs to be done to extend the Deramakot Forest model into other FMUs. The Deramakot experience shows that a successful shift to SFM requires a long process of learning and capacity building, which is part of the certification process. Apart from close scrutiny, which is also part of the certification process, Deramakot also enjoyed good technical assistance, committed forest managers and political endorsement – conditions that are difficult to replicate in the scaling-up of the SFM model. In particular, scaling-up requires a change in the mindset of licence holders and forest managers and a significant buy-in into the SFM concept, and these have been slow to surface, even eight years after SFMLA was introduced.

Sabah's political support of the move towards long-term forest licensing is also unclear. Some parties question the state's motive for privatizing more than 2 million ha of commercial forest reserves to a handful of companies with no track record or technical expertise in forest management. There are also strong political interests in maintaining the short-term timber harvest licensing system. These factors, coupled with limited financial capacity, poor technical expertise, poor residual stands and a weak regulatory environment, have contributed to the unsteady extension of SFM to other FMUs.

This does not mean that there has been no progress at all in Sabah's forest management. SFD is applying the Deramakot Forest model in the other FMUs that it manages, and is seeking certification for these. At the same time, certification is a valuable process that will help the department to build its capacity and expertise for SFM.

It is emerging that the third-party verification of forest management is one of the key factors in ensuring SFM prescriptions are adhered to. However, if licence holders are to seek such verification, they need to be convinced of the benefits, especially the economic viability, of SFM. SFD is well placed to communicate these with examples from Deramakot, which is said to enjoy a price premium of 30 percent more on its logs compared with average prices in Sabah. More should be done to engage SFMLA holders and especially to highlight the role of sustainable timber trade networks that link responsible timber producers with global buyers and manufacturers who are willing to pay premium prices.

Forest tenure systems and indigenous communities

TENURE ISSUES

As already mentioned, the process of gazetting forest reserves caused many indigenous communities to lose control over their traditional lands. Under the Forest Enactment of 1968, the state had the right to evict forest communities from forest reserves on which the communities are seen as "encroachers". In the past, although many indigenous forest communities were left alone by the authorities, community claims on forest lands were disregarded and logging companies encroached and logged traditional lands.

Forest management under SFMLA requires that social elements are included in management planning. With this, community and land tenure issues are finally formally addressed within Sabah's forestry framework.

Legal tenure in forest reserves

Informal arrangements are inadequate in the SFM model that SFD has adopted, especially if forest certification is a goal. The first issue that needs to be considered is the status of villages in the forest reserves. SFD has chosen to use a provision in the Forest Rules of 1969 that gives legal status to these indigenous villages. The Permit to Occupy Land in Forest Reserve is included in Rule 20A of the Forest Rules, and found in Form 1X. Such permits are usually sought by licence holders for their forestry operations, such as log landings, logging roads and base camps. The Occupation Permit (OP), as it is known, costs \$M250 (US\$68) per hectare per year. It has never been used to demarcate community boundaries and legalize forest communities. At the time of writing, no community in Sabah's forest reserves had received an OP, but several applications were being considered. The permits will be issued to the heads of families, while the durations and areas to be occupied are at the discretion of SFD. Long-term tenures are possible: in one village in FMU 17, a duration of 100 years has been agreed. The communities.

There are some obvious drawbacks for communities. While those with a steady stream of income from cash crop agriculture might be able to afford the permit fee, others that depend on subsistence agriculture and forest resources and have few opportunities for income-generating activities might not, especially in remote areas with poor access to markets. Indigenous communities with traditional claims to land find it unreasonable to have to pay for a permit to remain on their ancestral land, particularly when the fees were set with logging operators in mind. In addition, only land that is "in active use" is considered for an OP; fallow land that is part of Adat, for example, is not.

This is a new development in Sabah's forestry framework, and although the OP will solve the immediate problem of legality and provide communities with a degree of tenure security, it can also be seen as a stop-gap measure that is insufficient to address the inequities faced by indigenous communities with legitimate land claims.

SFD is moving in the right direction by requiring all forest management plans under SFMLA to address community development, but is it unable to act further regarding indigenous land claim issues. Further changes will have to be made via the state's legal mechanisms.

Protected areas and communities

As well as in forest reserves, a significant amount of subsistence activity, or "encroachment", is also occurring within Sabah's protected areas. This is partly owing to the lack of legal provisions for communities within the Parks Enactment. In response to this, the Crocker Range National Park management has embarked on a project to recognize access to 800 ha of park area that is claimed

and used by the local communities. The nature of the arrangement, which is based on traditional use zones, is currently being worked out between the communities and park authorities. However, there are concerns that the communities' traditional land and resource systems and knowledge have not been sufficiently studied and documented, thus jeopardizing the end result of a particularly important project, which could set an example for future implementation of traditional use zones in other parks.

Mechanisms are now starting to address community presence in forest reserves and protected areas, although the formalization and implementation of these are still far from ideal. In the case of SFD and Sabah Parks, there is lack of capacity, funding, expertise and mechanisms to tackle the issue of formal tenure. All attempts to formalize arrangements stop short of addressing the crux of indigenous land issues – landownership. Various mechanisms are being developed and implemented to allow indigenous communities to remain on their customary land, but these are characterized by strict limits and land-use restrictions.

LIVELIHOODS

In general, forest communities rely on subsistence farming and forest resources for their daily needs. Households usually clear small areas of land to cultivate hill rice (as a main staple crop), maize, sweet potatoes and other vegetables for subsistence. Most communities also cultivate fruit trees in forest clearings or home gardens. Regarding forest resources, indigenous communities collect fuelwood, hunt wild animals, harvest wild fruits and plants for food, and gather rattan and timber for the construction of dwellings and for crafts. Forest resources are collected for communities' own consumption and/or for sale.

Factors affecting livelihoods

Access to markets is an important factor in determining how much economic activity occurs in a forest community. In many villages located in remote forests with difficult access to market places, there might not be any economic activity at all. In villages with access to markets, the economic base is a more complex agrarian economy.

It is less clear how access to forest resources affects the income generation and food security of indigenous communities in Sabah. Livelihood strategies are a mix of subsistence and commercial activities, depending on the ease of access to markets, opportunities for wage employment in logging and plantations, and access to cultivable land and forest resources. Boxes 1 and 2 provide examples.

BOX 1

Indigenous reserve in Ranau district

A study by Doolittle (2001) on community rights of access in a rural village under indigenous reserve in Ranau district found no direct relationship between wage income and the use of forest resources. Individual households were found to adopt very diverse strategies, although they had similar and secure access to forest resources. Some households were found to have spent 89 percent of a three-month period gathering in the forest, while others spent as little as 4 percent. Similarly, incomes derived from forest resources varied among households, but were found to be generally low (between 0 and 6 percent of average monthly income), while income from gardens was much higher (up to 75 percent). Wage labour also accounted for a large percentage of monthly income, and ranged from \$M201 to \$M1 392. This is not surprising as the study village is located in an area with good opportunities for commercial vegetable farming, and the findings indicate a huge diversity of options in livelihood strategies. The use of forest resources is believed to be determined by cultural values and subsistence needs rather than economic needs.

BOX 2 Mangkuwagu forest reserve in Tongod district

In three remote villages located within the Mangkuwagu Forest Reserve there is negligible economic activity and villagers are trapped in poverty. Observations at a local community stakeholder workshop in Telupid demonstrated that participants were much more concerned about land tenure than access to forest resources. Concerns regarding the former involved a lack of land for subsistence and commercial agriculture, and the communities' inability to obtain land tenure through legitimate means. Communities are not permitted to clear land within forest reserve areas, even though they may have traditional claims under Adat. They also face difficulties in acquiring state land on which to develop commercial agriculture as they lack finances and do not qualify for credit facilities. Here, households are much more dependent on their home gardens and access to forest resources for daily subsistence.

The differences in these two cases can be traced to three main factors: land tenure, village location, and access to markets. It is impossible to ascertain which factor has the greatest impact on livelihoods without carrying out studies on a much wider scale. Clear and secure land tenure is needed to ensure that villagers are allocated sufficient land for cash cropping, while reliable infrastructure and nearby processing centres and markets are just as vital to complete the link. Although both communities described utilize forest resources, they do so mainly for subsistence purposes. The declining importance of forest resources is partly the result of poor forest conditions and depleted resources. Some communities perceive the value of the land to be much higher than that of forest resources, as land can be used for cash cropping or subsistence farming.

The function of location and access to markets in shaping the livelihoods of indigenous villagers was also shown in a survey on income changes in CF villages. The study (Martin, 2004) showed that while only 38 percent of respondents in Sandakan district sell their goods to the nearest town or weekend market, 67 percent of respondents in Kudat district do so. This was thought to be owing to the shorter distances to markets and better accessibility of Kudat villages, where the terrain is flat and there is good transport infrastructure, compared with Sandakan, which is hilly and remote.

Other external factors can also affect the livelihoods of indigenous communities. For example, in the resettled Kampung Gana in Marudu district – the location of SFD's pioneering CF project – poor planning and administrative delays led to land disputes among villagers and many other problems, with implications on the livelihoods of the community. Delays in delineating individual agricultural lot boundaries and in implementing livelihood or socio-economic projects resulted in such poor conditions that some villagers are reportedly returning to their original lands in the forest reserve to obtain forest resources for subsistence, thereby using the forest as a safety net.

It can be argued that access to roads and markets combined with land access and tenure issues affect the livelihoods of forest-dependent people in Sabah more than access to forest resources *per se* does. It is unclear from this review how such factors would be ranked in importance, but there is evidence that use of forest resources is more of a safety net when other livelihood options fail.

According to SFD, although its CF programme has not yet been successful in implementing socio-economic activities for the recipients, one of its main benefits has been resettlement and improved infrastructure, especially roads, which have opened communities to development from other government and extension agencies. For example, Martin (2004) notes that "extension efforts from the Agriculture Department, Veterinary Department, Fishery Department as well as from agencies like Rural Development Corporation (KPD, Koperasi Pembangunan Desa), Sabah Rubber Industry Board (LIGS, Lembaga Industri Getah Sabah)... had become accelerated in the CFP villages."

EFFECTIVENESS OF SFMLA ON POVERTY ALLEVIATION

The conditions inherent in meeting SFMLA and certification requirements have made social issues a critical part of forest management objectives and programmes. All SFMLA licensees must conduct a social assessment and have a CF programme, while certification requirements include provision of communication and dispute resolution systems, as well as verification of the social benefits that the

company provides to local communities. Social benefits are often poorly defined, and companies will pay them as little attention as possible in order to maintain high profits from logging activities. Third-party verification systems for certification require companies to participate actively with communities to aid development, usually within a defined and agreed social programme as in the communities that border Deramakot Forest.

With the shift towards SFM, the requirements within SFMLA are formalizing land tenure for communities, because land areas within forest reserves are supposed to be set aside for the use of communities. For example, in FMU 17, the OP will include land that is currently under cultivation, as well as forest land earmarked for community agroforestry development. SFD is introducing agroforestry systems both to reforest degraded areas in forest reserves and to develop economic livelihood activities for communities. In such cases, rubber is the preferred commercial crop, as latex can be dried, stored for long periods and sold at any time. The obligation for CF in SFMLA may also be a mechanism for managing community land use within forest reserves. With CF programmes, forest managers can assign strict boundaries for agricultural plots and ensure that only approved tree and cash crops, such as rubber, are cultivated in forest reserves.

To address poverty reduction in Sabah, land tenure and ownership systems need to be studied carefully; looking at forest tenure systems alone is insufficient under present conditions, as previous sections have shown. In the absence of legal land tenure, a range of informal and opportunistic arrangements have flourished within Sabah's gazetted forest areas. These are based on a mix of traditional Adat and modern land-use influences and rules, which are changing the traditional land-use landscape. The impacts of this change are yet to be seen, but will have social, cultural, political and environmental consequences.

As discussed, communities look more to agricultural production and market access to alleviate poverty than to forest resources. Hence, access to land for cultivation is seen to be more urgent than access to forest resources. This trend also requires larger areas of land to be viable, which obviously cannot be met through Sabah's present forest tenure system; this can only be addressed through land laws.

The move towards cash cropping must be seen against a backdrop of other factors that have not encouraged or provided enough incentives for SFM to prevail. These factors include poor quality of forests, poor implementation of CF programmes, lack of long-term secure tenure, and lack of promotion of other non-timber products by the state. There is a pressing need to monitor and evaluate the impacts of community development projects to ensure that efforts are being directed to the right areas.

The impact of these projects on the socio-economic status of participating communities has yet to be evaluated. However, there does not appear to be a direct relationship to poverty alleviation, which seems rather to be related to increased access to support organizations. CF as a concept and programme is still insignificant in the larger picture of forest management in Sabah, and any advantages it can potentially bring in terms of SFM would be piecemeal and contained in the small areas earmarked for communities. Under SFMLA, only a small area of forest land has been set aside for communities; approximately 40 000 ha for the estimated 25 000 people living in forest reserves. SFD has to demonstrate that agroforestry in CF programmes will significantly improve livelihoods and, as several CF projects have only just started, it will be a while before the results are known. The fact that SFMLA holders are responsible for CF programmes also creates concerns, as their motives and capabilities in SFM have been questioned.

Conclusion

Although SFD is on the right path with its prescriptions and emphasis on long-term tenures and SFM through the shift to SFMLAs, forest management has not improved significantly over the past eight years, apart from in the FMUs under SFD management, which are subject to third-party verification assessments. The main obstacle for SFMLA holders may be financial, but there is still a lack of vision among the private enterprises and the state to make SFM achievable.

SFM and SFMLA look likely to lead to better tenure security for communities, if recent developments in the use of OPs are successful and can be scaled up. The combination of improving tenure security within forest reserves (instead of relocating communities) and community agroforestry programmes seems likely to improve the economic livelihoods of indigenous communities in the medium term. These are very new developments, which SFD has carried out in part to fulfil the requirement for certification, but which SFMLA holders have not attempted. Although it is still early, this development by SFD is acknowledged as an important and positive step in addressing social issues in forest management.

One common feature emerges from this discussion: the best practices achieved so far under Sabah's SFM approach to forest management are found in SFD-managed FMUs. This has been possible through the pursuit of SFD certification as an objective. Unless certification becomes a goal for the remaining FMUs, far more needs to be addressed at the policy level for SFM to be possible, e.g., through supporting the forestry industry over agriculture, particularly oil-palm, and creating incentives for CF systems to thrive. Without a change of mindset, suitable incentives and the right regulatory environment, it is unlikely that SFMLA holders can significantly improve the state of Sabah's forests and the livelihoods of indigenous communities in the foreseeable future.

Proposals for the way forward

FOREST MANAGEMENT

Sabah has made significant steps in improving the management of existing forest resources through the establishment of the SFMLA system. Although the concept of SFM is now understood, few companies can afford to manage extensive areas of depleted forest, which require significant investment in silviculture and rehabilitation to become economically viable. The state government must make long-term forest management an economically attractive option compared with alternative land uses such as oil-palm. This requires incentives that may provide direct foreign investment and tax relief to companies that invest in rehabilitating the forest. Other economic incentives, such as carbon trading and other environmental service markets, may help to generate income from forest management. In addition, licensees' weaknesses in "total" forest management capacities must urgently be addressed.

SFMLA holders must invest in building the capacity to manage existing forest resources sustainably while incorporating the environmental and social needs of local communities. Companies need to conduct social assessments to verify the status of communities within the FMU and the extent to which each community uses the various areas within and bordering the FMU. These elements need to be incorporated into management planning, which should provide an appropriate social programme, as well as systems for communication and conflict resolution. Areas that communities are cultivating need to be identified and defined in terms of use rights, whether they are within the FMU or in adjacent state land areas. These activities should be carried out with the full participation of local communities.

Awareness raising and outreach work are important to ensure that both the private sector and local communities understand and support the need for SFM.

SFD should continue to focus on agroforestry within its CF programmes. The department needs to show that agroforestry can work on many levels: community livelihoods, forest rehabilitation and protection, and ecosystem services. The consistency of CF projects must also be assured, and SFD has set minimum guidelines for this, based on its own models for SFMLA holders.

LAND TENURE AND USE RIGHTS

Indigenous communities living within the state forest lands of Sabah must address the concept of land tenure, ownership and use rights. The introduction of OPs is a good start, but considerations for land tenure need to take better account of Adat rather than only areas under continuous cultivation. Other land tenure systems within Sabah's land laws, such as communal titles and indigenous reserve, should also be investigated.

Regarding boundary conflicts, community mapping should be carried out – with the full participation of local communities – to delineate clear boundaries according to traditional uses. Community mapping could also be used to draw up traditional use zones within forest reserves. Social forestry projects should take these into account when planning resources management, to help resolve the conflict between community livelihoods and other forestry or protected area objectives.

FURTHER WORK

To understand the role of forestry and land tenure systems in poverty alleviation in Sabah, more research needs to be done across the state to determine the relationship between forest management and communities' economies. However, it is clear that security for local communities' livelihoods needs to include basic land rights and economic development, as well as forest conservation and rehabilitation. It is recognized that many of the actions recommended lie beyond the scope of forestry authorities alone, and will necessitate a broad-based strategy in which the state of Sabah

provides basic facilities and economic opportunities to indigenous communities while maintaining long-term sustainable management of forest resources.

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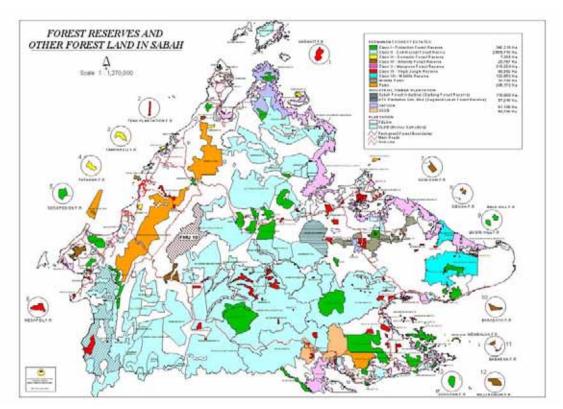
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ANNEX 1: RELEVANT LEGISLATION

Legislation regarding forest ownership and tenure in Sabah:

Forest Enactments, 1968 Forest Rules, 1968 Parks Enactment, 1984 Parks (Amendment) Enactment, 1996 Conservation of Environment Enactment, 1996 Land Ordinance, Sabah Cap. 68 Land Acquisition Ordinance, 1950 Local Government Ordinance, 1961 Native Courts Enactment, 1992



ANNEX 2: FORESTRY MAP OF SABAH

Trends in forest ownership, forest resources tenure and institutional arrangements in the Philippines: are they contributing to better forest management and poverty reduction?

By

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Introduction

In the early twentieth century, at least 70 percent of the Philippines total land area of 30 million ha was covered by moist tropical rain forests, consisting of and supported by several forest biota. Dipterocarp forest of the *Dipterocarpaceae* family dominated the vegetation and may have covered more than 20 million ha (ESSC, 1999a; USAID/Manila, 1989; World Bank, 1989).⁶² Other significant forest types that were not as extensive as dipterocarps include pine, beach, molave, mangrove and mossy forests. Philippine forests were also the source of key minor forest products such as rattans, bamboos, vines, resins, wildlife and medicinal plants. The country's forests, coral and marine resources once possessed some of the richest biological diversity in the world, with a net biodiversity index of 0.786, the third greatest among the countries of South and Southeast Asia (Guiang, 2004a; DENR and UNEP, 1997; USAID/Manila, 1989). This made the Philippines one of the 18 megadiversity countries that together contained 60 to 80 percent of global biodiversity (DENR and UNEP, 1997; World Bank, 2004).

However, the dominant dipterocarps were heavily exploited both before and immediately after the Second World War; the harvestable volume of timber (including both dipterocarps and nondipterocarps) in old growth forest ranged from 100 to 170 m³ per hectare (Revilla, 1984), depending on the location. Later, the Philippines continued to exploit its forests to support rural economies through the export and/or processing of raw logs, timber, semi-processed lumber, veneer and plywood in the 1960s, 1970s and early 1980s (Bautista, 1990; Guiang and Manila, 1994). Since the Second World War, forest exploitation has opened up large areas for agricultural production and expansion.

The abundant and highly valued timber from natural forests did not last long. By the end of the twentieth century, the Philippines had only 18.3 percent forest cover (ESSC, 1999a), with less than 1 million ha of old growth forests and 4 million ha of naturally occurring residual forests. Most of these forests are in fragmented stands. The country has undergone a catastrophic degradation of its natural resource base, resulting in one of the lowest rates of per capita forest cover in the tropics (about 0.085 ha), the collapse of much of its mangrove forests, the continuing loss of and threat to biodiversity, the pollution and siltation of coastal and marine resources, the loss of topsoil, and increasing damage to lives and property from flash floods and drought (DENR and UNEP, 1997; Guiang, 2001; Revilla, 1998; World Bank, 1989; 2000; De Leon and White, 1997). The loss of forest cover over a period of a century has had impacts on the lives of more than 100 diverse Philippine cultures and more than 2 million plant species (Poffenberger, 2000). The country's loss of its original forest has resulted in at least 418 species appearing in the World Conservation Union's (IUCN) red list of threatened species for 2000, bringing the Philippines into the top 25 global biodiversity hotspots (Tesoro, 2005). Worse, despite its comparative advantage in developing forest plantations and the initial stock of natural forests, the Philippines has been a net importer of logs, lumber, veneer and plywood to meet domestic demand since 1989. The shares of imports in total supply increased from 13 to 40 percent for logs, 70 percent for lumber, and 20 percent in plywood and veneer (Dy, 2002).

The main direct cause of forest degradation in the Philippines is overexploitation, fuelled by weak governance, the capture of resources by elite groups, failure to collect rents from licensees, short-sighted and unpredictable policies, rapid population growth, and increased conversion of forest land to agricultural, residential and commercial uses. Over the last 20 years, the government and the donor community have made serious efforts to address the continuing forest degradation (Vitug, 1993; de los Angeles, 2000), but much remains to be done to improve the overall condition of the

⁶² Revilla (1984) estimates that dipterocarps covered about 91 percent of all public forests in the Philippines, 95 percent of commercial forests and 45 percent of the total land area.

country's forests. Illegal cutting, slash-and-burn farming, upland migration and the conversion of forest land to other uses continue to plague Philippine forests.

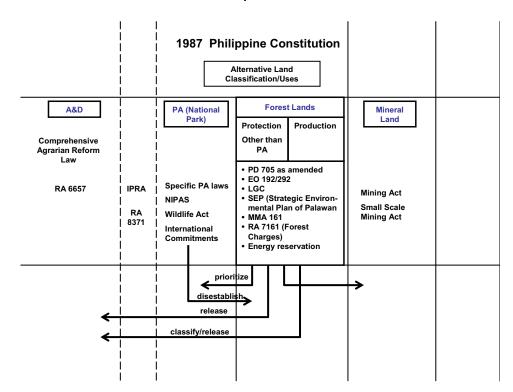
Based on analysis of secondary information, legislative and administrative policies, and relevant documents from government agencies and foreign-assisted projects, this case study sets out to determine the relationships among and effects of various tenure and ownership systems for forests and forest land in the Philippines. The study provides a context in which to understand how forests and forest land are protected, developed and managed under different types or categories of ownership or tenure instrument. It provides observations and analysis of how various tenure and forest resource managers have effectively managed the remaining forests, rehabilitated bare forest land and helped alleviate poverty and social injustice. The recommendations it makes are aimed at guiding policy-makers and implementers in adopting or enacting better policies, institutional arrangements and practices that could help reverse the trends in forest degradation in the Philippines.

Tenure systems and forest ownership

POLICIES ON TENURE AND FOREST LANDOWNERSHIP

In its colonial past, the Philippines adopted the Regalian doctrine of tenure and forest ownership in planning, allocating, protecting and managing its natural resources, including forests and forest land. All forest lands are in the public domain and are classified into agricultural, forest or timber and mineral land and national parks (1987 Constitution, Art. XII, Sec. 3) (Figure 1). The 1987 Constitution (Art. XII, Sec. 2) states that "All lands of the public domain, waters, minerals, coal, petroleum, and other mineral oils, all forces of potential energy, fisheries, forests or timber, wildlife, flora and fauna, and other natural resources are owned by the State. With the exception of agricultural land, all other natural resources shall not be alienated." This policy has rendered the State the largest "absentee landlord" by giving it legal control of at least 15.85 million ha of public domain (FMB/DENR, 2003; Hyde et al., 1997). In reality, however, most forests and forest land are under de facto open access to every citizen of the State, occupied or claimed by forest residents and communities, covered by some kind of tenure arrangement, or proclaimed by the State as set-aside to protect biodiversity and ensure the sustainability of environmental services from watersheds.

FIGURE 1 Allocation of forest land under various laws and policies



As early as 1975, the Revised Forestry Code (PD 705), adopted a comprehensive approach to protecting and managing forests and forest land. Since the end of martial law in 1987, the State has continued to enact other legal and institutional frameworks for sustainable natural resource management. These laws and policies have guided and directed various government bodies in planning, allocating, regulating, managing, monitoring and governing forests and forest land. The laws enacted and the administrative policies issued over the last 15 years have promoted decentralized environmental management by local governments, indigenous groups and resource-dependent communities. Relevant laws and national executive orders include:

- National Integrated Protected Areas Act of 1991;
- Executive Order 263 of 1995, which provides the legal basis for community-based forest management;
- Indigenous People's Rights Act of 1997;
- Clean Water Act of 2004;
- Executive Order 318 of 2004, which promotes sustainable forest management (SFM);
- various executive orders and presidential decrees or proclamations setting aside certain forests and forest land for the protection of watersheds, the conservation of biodiversity, research and ecotourism purposes, the protection of geothermal areas and facilities, or the establishment of industrial and economic zones;
- Local Government Code of 1991.

As a result of the laws and administrative policies that were enacted under martial law and immediately afterwards, responsibility, accountability and authority in the protection, development and management of forests and forest land have been subject to complex institutional, ownership and tenure systems (DENR and USAID/Manila, 2004). With assistance from the Philippine Environmental Governance Project (EcoGov), these have been divided into five categories, which are shown in Table 1. This categorization was not planned but is largely a result of the emerging pattern of how the State allocates forests and forest land in the Philippines.

The framework of laws is complemented by various department administrative orders and specific implementing rules and regulations that clarify (or sometimes complicate) national policies and establish detailed implementation procedures. Annex 1 provides examples of department administrative orders and implementing rules and regulations that were issued to trigger implementation of the laws. One key element in this framework is the variety of new tenure instruments that grant property rights of various kinds over public forest land to local and indigenous communities. Another important feature is the establishment of a national system of protected areas, which is based on IUCN specifications for including the participation of indigenous peoples, tenured migrants and other local stakeholders, including local government units (LGUs). These laws and orders have opened up opportunities for collaboration, partnership and joint ventures among national government organizations, local governments, civil society groups and the private sector.

TABLE 1

Category of allocation/ accountability	Relevant forest policies governing the allocation*	Primary objectives	Secondary objectives	
A. Classified forest lands				
1. Allocations to address public goods (forest reserves, national parks, GRBS/WA) – DENR, PNOC, NIA, NPC	National Integrated Protected Areas Act, republic acts, presidential decrees or proclamations, executive orders, administrative orders		Social justice and poverty alleviation Ecotourism and livelihoods	
2. Allocations to civil and military reservations – military, academic institutions	Presidential decrees or proclamations, republic acts, executive orders	Academic and research activities and other special uses	Poverty alleviation Protection of biodiversity	
3. Allocations to LGUs under communal forests or co- management agreements	DENR administrative orders, co-management agreements, DENR regional administrative orders, executive orders	ecotourism, education,	Production	

General categories and objectives of forest land allocations in the Philippines

4 Allocations to communities, community organizations and indigenous peoples a CBFMAs and related tenure	Act	alleviation	Protection of biodiversity Ecotourism
b CADCs/CADTs#			
5. Allocations to the private sector – holders of TLAs, IFMAs, fishpond leases, grazing lands			Protection of biodiversity Poverty alleviation
	DENR administrative orders, presidential proclamations or decrees		
be allocated to <i>de facto</i>	these areas as either	Based on actual occupancy, claim or best use	

* Annex 1 provides more details of selected tenure and allocation instruments under the different categories of forest land allocation in the Philippines.

Certificates of ancestral domain claim (CADCs) are issued by DENR and can be converted to certificates of ancestral domain title (CADTs) under the Indigenous People's Rights Act. There is some overlap among these and community-based forest management agreements (CBFMAs); of the 4.9 million ha of land allocated to communities, at least 2.5 million ha is under CADCs, some of which already have CADTs (World Bank, 2004). The rest is covered by CBFMAs or related tenure instruments.

DENR = Department of Environment and Natural Resources.

IFMA = industrial forest management agreement.

NIA = National Irrigation Administration.

NPC = National Power Cooperation.

PNOC = Philippine National Oil Company.

TLA = timber licence agreement.

Source: DENR and USAID/Manila, 2004.

The present systems for allocating forest land in the Philippines are the result of a series of decentralization policies in recent years. At the operational level, the impacts of these devolution policies on the forestry sector need further evaluation. So far, they have not resulted in significant investments in forest plantations by the private sector or LGUs, they have not minimized illegal logging and the conversion of forest land to agricultural or other uses, and they have not adequately addressed poverty in the uplands. Accountability, responsibility and authority in the protection and management of forest land remain vague and unclear. Incentives and rights for the holders of different tenure or allocation instruments have yet to be clearly defined and implemented.

The general categories for allocating forest land include different stakeholders in the protection, development and management of forest land. DENR and other government agencies (PNOC, NIA, NPC) remain the State managers of protected areas and watersheds. These set-asides are for the benefit of present and future generations and are designed to serve inter-generational public goods, but greater State commitment is needed to provide adequate funds to ensure their protection and management for biodiversity conservation and watershed protection. In these areas, the State must regulate, control and enforce forestry laws while responding to demands for social justice and poverty alleviation, and public interest remains the driving force in managing them. It is possible to adopt "protect, participate and profit" strategies in protected and watershed reserves, rather then following a strictly "protect, prohibit and punish" approach (Larsen, 2000).

The communities – upland migrants and indigenous peoples – are another set of key stakeholders in the protection and management of forest land. These groups are at the centre of local, national and international attention as they emerge to become major players in managing the Philippines' forest land. Many qualified communities have obtained a degree of tenure and some rights over their lands, but it remains to be seen whether or not these land and natural resources assets will be productive and help the communities to emerge from poverty and social injustice (Borlagdan, Guiang and Pulhin, 2001; Contreras, 2003). Community-based forest management (CBFM) is a strategy for achieving sustainable forestry and social justice, as spelled out in Presidential Executive Order No. 263 of 1995. Thus, the CBFM approach and strategy should be adopted in all kinds of tenure and allocation instruments for the protection and management of forest land.

Allocations of forest land to the private sector remain the dominant tenure instrument for increasing the production of timber and other wood requirements in the Philippines. Forest policies affecting the allocation of forest land to the private sector have changed since the constitution was adopted in 1987. The private sector's past abuse and exploitation of forests under martial law have tainted its image in advocating for a more deregulated policy environment in production forestry (Wallace, 1993).

The different methods of allocating forest land in the Philippines highlight the need to design and implement category-specific planning and monitoring systems that apply to selected tenure or allocation instruments. Current forest management planning, regulation, monitoring and policymaking are still very heavily based on the timber-oriented rules and regulations of the Philippine Selective Logging System (Revilla, 1998; Guiang and Manila, 1994). The requirements for obtaining approval for annual allowable cuts and for transporting forest products are the same for community organizations and private sector tenure holders, which has led to relatively high transaction costs for community organizations obtaining resource use rights (EWW, 2003), and collusion among community leaders, DENR field officials, the military and LGUs in income-generating forest management activities. DENR has suspended the rights of CBFMA holders at least three times since implementation of the policies allowing community organizations to harvest and benefit from productive natural and planted forests. This high level of regulation is similar to that applied to the holders of TLAs and IFMAs, and has had negative effects on communities that have been strictly enforcing forest management regulations in their tenured areas. It should be noted that community organizations have greater need of regular income sources to protect and manage their forest land than private sector actors have. Communities require public subsidies for training, initial investments in livelihoods and enterprises, and the carrying out of obligations to protect and manage forest land (Guiang, 2004d).

Overall, there is a need to determine key performance indicators for effective forest management and to design a system for using these indicators to monitor the performance of various tenure and allocation holders over time. Efforts are being made to assist DENR, LGUs and tenure/allocation holders to design, install and operationalize a governance-oriented monitoring and evaluation (M&E) system at the local level to promote effective forest management.⁶⁹ It should be noted that the lack of trust among DENR, community organizations, LGUs and civil society regarding the harvesting of natural and planted forests in CBFMA, TLA and IFMA areas stems from the lack of an effective monitoring system for evaluating performance in forest management.

CHANGES AND TRENDS

As Table 2 shows, most classified forest land in the Philippines is under the management of the State (28 percent) or communities (33 percent). Only 12 percent of forest land is in the private sector under various tenure instruments. The challenge is how to address tenure in the 25 percent of forest land that is still open access or under *de facto* claims and management. The present allocation of

⁶³ The United States Agency for International Development (USAID)-funded Philippine Environmental Governance Project Phase 2 (EcoGov 2) is currently using 12 performance indicators for effective forest management with DENR, LGUs and tenure/allocation holders in Southern and Western Mindanao, Central Visayas and Northern Luzon. Six of the 12 indicators are compulsory for all types of tenure/allocation, and the remaining six indicate added performance. The 12 indicators are consistent with the principles and requirements of SFM.

forest land implies higher public expenditures to protect and manage set-aside (protected areas and watershed reserves), subsidize the capacity building needs of communities – including social infrastructure and livelihood assistance – and capture open-access forest land through appropriate tenure/allocation instruments. This issue poses a particular challenge as the Philippines is forecast to undergo another ten years of budget deficit, political instability and competing needs for increased social services, improved infrastructure, education and agricultural development (World Bank, 2003; 2005).

TABLE 2	
Allocation of forest land in the Philippines	

Category of allocation	Estimated area (ha)	% of total forest land and unclassified areas		
A. Classified forest lands	14 765 000			
1. Allocations to address public goods (forest reserves, national parks, GRBS/WA)	4 165 000	28%		
2. Allocations for civil and military reservations	296 000	0.02%		
3. Allocations to LGUs under communal forests or co-management agreements	Minimal area			
4 Allocations to communities	4 900 000	33%		
a CBFMAs and related tenure				
b CADCs/CADTs				
5. Allocations to the private sector (mostly existing TLAs, IFMAs, fishponds, grazing lands)	1 760 000	12%		
6. Unallocated forest land (not covered by any of the allocation instruments)	3 644 000	25%		
B. Unclassified forest land (to be allocated to <i>de facto</i> claimants or occupants)	1 089 000			
Total	15 854 000			

* There is some overlap among CADCs, CADTs and CBFMAs; of the 4.9 million ha of land allocated to communities, at least 2.5 million ha is under CADCs, some of which already have CADTs (World Bank, 2004). The rest is covered by CBFMAs or related tenure instruments.

Sources: FMB/DENR, 2003; Angeles, 2004; World Bank, 2004; DENR and USAID/Manila, 2004.

Between 1980 and 2003, the allocations for set-aside – biodiversity conservation and forest reserves – increased by 25 percent, from 3.4 to 4.2 million ha. Forest exploitation in the 1970s and early 1980s resulted in alarming rates of deforestation and biodiversity loss, which became a major issue after martial law (i.e., from 1986). Increasing awareness of the value of biodiversity and the environmental services of forests, together with the shift from timber-oriented management systems to a more ecologically oriented perspective in forest management, led to advocacy for increasing the land allocations of protected areas. This trend was strengthened by the National Integrated Protected Areas Act in 1991 and various proclamations to protect critical watersheds serving multi-purpose hydroelectric power dams and national irrigation systems. Donor funds for biodiversity conservation in the 1990s also influenced the allocation of protected areas. These funds included grants from the Global Environment Facility (GEF) of the World Bank, the USAID Debt-for-Nature swap that endowed the Foundation for the Philippine Environment (FPE), and the European Union (Guiang, 2004a). Also during the 1990s, many environmental non-governmental organizations (NGOs) advocated for biodiversity conservation, rehabilitation and social justice in the uplands.

After the martial law years, there was growing nationwide desire to address social justice and poverty by allocating more forests and forest land to marginalized communities, especially indigenous people. This was partly a reaction to decades of corruption, dominance by elite groups and displacement of marginalized upland communities to make way for large-scale timber extraction, especially during the 1960s and 1970s. However, the seed for this new trend was planted during the later years of martial law with President Marcos's Letter of Instruction of 1982, which recognized upland communities' claims to and occupancy of forest land. The area of forest land

allocated to upland migrants and/or indigenous people has expanded from a tiny area in the 1980s to almost 5 million ha, or more than one-third of total forest land (Guiang, 2004b; World Bank, 2004). The allocation of forest land to communities is seen as the State's response to demands for increased devolution and the creation of more administrative and legislative mechanisms for local forest management (Borlagdan, Guiang and Pulhin, 2001; Contreras, 2003). The shift to CBFM is a natural response to the increased migration into the uplands, where an estimated 20 million people out of a total population of 84 million live. CBFM is also a way of addressing social inequity, the stagnant economy and the skewed distribution of arable land in the lowlands under the National Land Reform Programme.

The strengthening of policies in favour of allocating forest land to communities peaked in 1995 with Presidential Executive Order No. 263, which officially adopted CBFM as the country's strategy for SFM. This move was conceived to correct the State's reputation for being the nation's greatest "absentee landlord", and responded to the urgent need to empower communities so that they could establish "social fences" in open-access forests and forest land, thereby recognizing local communities' *de facto* resource management activities, including those of indigenous people (Hyde *et al.*, 1997). The rights of indigenous people were further strengthened by the Indigenous Peoples' Rights Act (Republic Act 8371) of 1997, which paved the way for the titling and private ownership (individual or communal) of ancestral forest lands. Both CBFM and the Indigenous Peoples' Rights Act are based on participatory planning and bottom-up approaches to identifying and articulating communities' resource development, management and protection strategies.

Over the last five years, forest land allocated to the private sector under different tenure instruments has stabilized at about 12 percent of the total, compared with a high of 72 percent in 1970/1971, as shown in Table 3. The area under TLAs decreased from more than 10 million ha in 1970/1971 to less than 1 million ha in 2000, generally coinciding with the decreased area of natural forests. The private sector's allowable cut for timber extraction decreased from more than 10 million m³ per annum in the late 1960s and early 1970s to 89 000 m³ in 2000 (Wallace, 1993; Angeles, 2004) – only 10 percent of its allowable cut in 1986. The sudden decrease in the late 1980s was largely precipitated by the 1987 Constitution, which put a stop to the "privilege-driven" TLA system and proposed co-production, co-management or joint venture agreements for the development and management of natural resources, including forest land (Wallace, 1993; Guiang, 1993). It is projected that only three TLAs will exist after 2010, and most TLAs have already been converted into IFMAs, which can cover a maximum area of 40 000 ha.

Policy provisions for the allocation of forest land to the private sector have changed every time the DENR leadership changes (Olizon, 1991; Acosta, 2003; Angeles, 2004), as have the incentives and restrictions regarding access rights to standing natural timber in tenured areas, financing, tax incentives and technical requirements. This uncertainty and unpredictability in forest policies affecting the private sector have discouraged investment in forest plantations, despite adoption of the Master Plan for Forestry Development in the Philippines (Acosta, 2003; Angeles, 2004; Tesoro, 2005).

Between 1980 and 2001, most plantations were established by the government and the private sector. The development of forest plantations was driven mostly by donor funds (e.g., contract reforestation projects funded by the Asian Development Bank [ADB], the Japan Bank for International Cooperation [JBIC] and World Bank loans), compliance with TLA regulations, and environmental objectives. Planting to ensure a supply of wood and other timber products did not expand as expected, and ranged from about 1 100 ha per year for 1999 to 2001, to 4 800 ha per year for 1986 to 1992 (Acosta, 2003). Investment in forest plantations for domestic needs has not been adequate to meet the projected local demand for timber and wood (DENR/FMB, FAO and UNDP, 2003; Dy, 2002; Angeles, 1999). The establishment of forest plantations has also been complicated by various tenure and claim conflicts, insurgency, the high cost of loans, and unpredictable policies. With an average yield of 200 m³ per hectare, about 25 000 ha of harvestable forest plantations are needed to meet the average annual domestic demand for 5 million m³ (Guiang, 2001; Angeles, 1999).

Type of agreement	1970/1	971	1980		1990		1995		2000	
	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
TLA	461	10 598	261	7 939	97	3 620	41	1 600	19	910
IFMA/ITPLA			12	88	81	30	248	538	184	548
Tree farm			101	9	101	1	128	18	155	19
Agroforestry			2	1	94	11	84	97	80	91
Total				8 037		4 189		2 253		1 568

TABLE 3 Areas of forest land under the private sector from 1970 to 2000 (thousand ha)

Sources: FMB/DENR, 1980; 1990; 2000.

The present allocation of forest land in the Philippines reflects the decisions and actions of DENR, LGUs, civil society groups, donor agencies, communities, tenure holders and other resource managers in their efforts to manage forest land effectively and efficiently. Allocations also reflect the increasing awareness of and adherence to the principles of participatory decision-making and subsidiarity. However, they fall short of transparency and accountability, especially regarding national and local allocations of resources for the implementation of effective forest management in protected areas and regarding the active participation of LGUs and local stakeholders in the issuing of various resource use rights in forest land.

Although the present allocations to LGUs are minimal, they are expected to increase over the coming years as a result of increasing pressure to devolve forest management functions, assist communities, respond to support from donor agencies and civil society groups, support Protected Area Management Boards (PAMBs), and protect and manage communal forests, co-managed forests and communal watersheds. The current issue of DENR controlling and supervising the forest management functions of LGUs will continue until the Local Government Code of 1991 is amended. This provision renders the devolution and decentralization of forest functions partial in nature, which explains why many LGUs have a lukewarm attitude towards the development, protection and management of forest lands in their political jurisdictions, although some forward-looking local leaders disregard the inadequacy of the current forest devolution policy (Agbayani, 2005).

Unfortunately, the current situation has discouraged LGUs from helping communities to put pressure on DENR to reduce regulatory measures and transaction costs (Agbayani, 2004; EWW, 2002; Vitug, 1993) and from providing extension and social infrastructure support to improve production systems. In principle, the active involvement of LGUs and communities will help control illegal logging and forest conversion through locally organized enforcement systems. However, DENR maintains that most LGUs and communities need capability enhancement, are overwhelmed by the added responsibility of forest management and have limited funds to implement devolved functions. As a compromise, Agbayani (2005) and Guiang (2004c) propose co-management agreements for the development, protection and management of forest land by DENR, tenure holders and LGUs. Under the co-management principle, LGUs and DENR share accountability and responsibility for sub-allocating forest land to qualified claimants and stakeholders in their respective localities, based on locally accepted and technically sound LGU forest management plans (DENR and DILG, 2003).

In the future, the role of LGUs in the allocation and development of forest land is expected to increase (DAI, 2004; World Bank, 2005), but will vary from one forest land allocation to another. In protected areas, watershed reserves and CBFMA areas, LGUs are encouraged to participate in determining the direction, strategy and policies for managing various forest management units. As most forest land is allocated to communities and protected areas/watershed reserves, LGUs – together with local DENRs – are in a better position to promote investments in forest plantations and high-value crops through contracts, joint ventures or other business arrangements. Although these business arrangements may not be ideal, LGUs can broker business agreements among investors, tenure and allocation holders and DENR. They can also support extension and information dissemination, the maintenance or improvement of access roads and the provision of social services, as well as following up on applications for environmental compliance certificates from DENR. However, LGUs have a smaller role in areas that are allocated to reservations under the responsibility of other government agencies such as PNOC/the Department of Energy (DOE), NIA,

military establishments and NPC. In these areas, LGUs could work with DENR and tenure holders to assess forest management activities and monitor forest management over time.

In time, LGUs' short- and long-term roles in forest management will be to serve their local constituents, ensure the stability and quality of domestic water and communal irrigation systems, ensure the protection of lives and investments in the lower portions of watersheds, minimize flash floods and natural hazards, and sustain the production of food and fibre. LGUs will interpret and apply local environmental governance for forest land management. LGUs represent the lowest level of decision-makers and holders of responsibility for implementing effective forest management. They can open up opportunities for local stakeholders in participatory planning, decision-making and the implementation of actions that have an impact on the allocation and use of forest land. Elected officials are accountable to their constituents and the national government for governance and budgetary subsidies.

Local DENR offices and other relevant offices of national line agencies will increasingly provide technical services to LGUs, communities and other tenure and allocation holders. Together with LGUs and local stakeholders, they will set the technical standards and key performance indicators for improved forest management by tenure and allocation holders. Local civil society organizations could apply pressure to LGUs and DENR to ensure that they are accountable and transparent in their choices, decisions and actions with respect to allocating forest land and financial and human resources for sound forest management (Guiang, 2000c).

The shift in the configuration of forest land allocations in the Philippines over the last 20 to 25 years has had positive and negative effects. Increased allocations for conserving biodiversity and protecting critical watersheds have limited allocations for the private sector and upland communities, except for the ancestral domain claims of indigenous people who can be issued with CADCs or CADTs even in protected areas and watershed reserves. The overlaps and bias in the allocation of forest land that favoured public goods purposes, social justice and poverty alleviation did not sit well with the private sector, and forest management-related conflicts have increased, especially with respect to tenure rights, utilization, institutional mandates and traditional knowledge and practices (Malayang, 2004; Guiang, 2004d). The following are some common causes of conflict that have emerged recently:

- Differences between customary and statutory laws in the use of forest resources in protected and ancestral domain areas: the compromise has been to align the protected area management zones and plans with those of the ancestral domain areas. Examples of this kind of conflict are found in Mount Kitanglad Protected Area, where indigenous people's use rights are not consistent with protected area management policies, and ancestral domain claims cover the entire protected area. In Mount Apo, geothermal energy development conflicts with ancestral domain claims and protected area management objectives.
- Confusing and vague institutional mandates among public agencies, such as DENR, the National Commission on Indigenous Peoples (NCIP), NPC, LGUs and NIA, because of overlaps in the areas of their mandates and jurisdiction. Discussions are being held to harmonize these mandates, responsibilities and limits in protecting, managing and utilizing forest land. DENR maintains that it has the mandate to issue resource use rights to indigenous people, even in ancestral domain claims, while NCIP maintains that it must give its "free and prior informed consent" before any development or other activity is carried out in ancestral domains. In some areas, such as Samar, the benefits expected from mining in protected areas conflict with the aims of biodiversity conservation (REECS, 2001).
- Disagreement regarding fair compensation, fees or penalties between off- and on-site stakeholders in the protection and management of forest land: for instance, the province of Nueva Vizcaya taxed the private sector operators of the multi-purpose Casecnan Dam under DOE. The firm paid more than 250 million pesos (p) to LGUs (at the provincial, municipal and barangay levels) as part of its property tax obligation because water for the dam flows out of a watershed in Nueva Vizcaya (Velasco, 2005).

Analysis of components of the forest tenure and ownership system

FOREST COVER AND FOREST LAND MANAGEMENT

Table 4 shows recent estimates of the country's forest cover, which accounts for only 18.1 percent of the total land area (ESSC, 1999a).⁶⁴ Of the total forest cover, an estimated 19 to 20 percent is forest plantation and permanent perennial high-value crops (Kummer, 2003). However, there is no reliable information on how the forest cover is distributed among the different categories of forest land allocation, as shown in Tables 2 and 5 which makes it difficult to generalize about how forest management is carried out under each allocation category. Enforcement and monitoring become complicated, including linking the results from decisions and actions to improved forest management. Accountability and responsibility cannot be pinpointed easily, and the impacts of inputs, investments and interventions cannot be adequately measured. There is need for a reliable breakdown of forest types according to tenure and allocation holder as a benchmark for managing natural resource assets and monitoring improvements in forest management over time.

Fragments of information such as the recent updated forest cover survey of Mindanao (DENR and USAID/Manila, 2004) show that most remaining natural forests (open and closed canopy) are located in protected areas and watershed reserves or in zones that are highly inaccessible or the hideouts of insurgents. According to their allocation categories, these areas are the direct responsibility of DENR, PNOC or indigenous people (holders of CADCs). The areas have been partially validated and determined at the LGU level through the use of satellite images, simple community mapping exercises, focus group discussions and reconnaissance activities. Satellite images confirm that forest cover in Mindanao has increased over the last 14 years, but most of the increase can be attributed to the conversion of forest lands to plantations of high-value crops, at the expense of natural forest. In the late 1980s, large-scale suspension and non-renewal of TLAs without the establishment of effective forest protection systems and strong property rights led to forest lands in Mindanao becoming open-access areas. This accelerated their conversion into various upland production systems and triggered illegal logging. Over the last 14 years, at least 40 000 ha of natural forests per year have been lost in Mindanao, while the average annual increase in plantations has been 70 000 ha.

Tropical forest type	Area ('000 ha)	% of total land area		
1. Old growth dipterocarp forest	805	2.7		
2. Residual dipterocarp forest	2 731	9.1		
3. Closed canopy pine forests	124	0.4		
4. Open canopy pine forest	104	0.4		
5. Submarginal forest	475	1.6		
6. Mossy forest	1 040	3.5		
7. Mangrove forest	112	0.4		
Total natural forests	5 391	18.1		
8. Forest plantations	774			
Total forest area	6 165			

TABLE 4	
Estimated areas of different typ	es of forest in the Philippines

TADID

⁶⁴ Official Forest Management Bureau (FMB)/DENR estimates claim that the forest cover of the Philippines has increased to 24 percent of the total land area, based on analysis of 2002 satellite images (FMB/DENR, cited in World Bank, 2004).

Sources: Data on the area of natural forest types were taken from Acosta, 2003 and ESSC, 1999a; information on the estimated area of forest plantations came from Cadiz, 1999 and Alonzo, Natividad and Tordilla, 1998. Figures were rounded to the nearest thousand hectares.

Table 5 provides a more detailed analysis of the contribution made by each category of forest land allocated to different forest management objectives. It highlights the need to generate sound information in order to design and implement effective governance policies and practices, especially regarding the planning and allocation of forest land and the management and monitoring of forest management activities under different allocation categories.

Where the dominant objectives are biodiversity conservation and protection of watersheds, existing policies and regulations restrict the use of allocated forest land. However, enforcement suffers from a lack of resources and weak property rights and benefits for occupants and local stakeholders. For allocated forest lands where the main objectives are forest production, upland production systems, poverty alleviation and social justice, the State has yet to adopt a highly deregulated and strong incentive-based system of policies and practices to promote investments, reduce transaction costs and maximize the participation of all key stakeholders at the local level. Except for forest lands that are allocated to other government agencies, the State – through DENR – uses a "one size fits all" approach to forest regulations and enforcement; as a result, private sector and community allocation holders struggle with overregulation and high transaction costs. Government managers of protected areas and watershed reserves are often inflexible in dealing with communities in buffer and multiple-use zones.

The extent and nature of the remaining natural forests under each category of forest land allocation have to be ascertained, including areas for development, rehabilitation, settlement and upland cultivation. Information will help identify the benchmarks for monitoring forest management under each allocation. This is urgent and important, as more and more forest land is being allocated to migrant communities and indigenous people (through CADCs, CADTs and CBFMAs) and IFMA and/or TLA holders are increasingly applying for forest harvesting rights.⁵ Existing information on areas of forest per tenure or allocation holder is fragmented and not aggregated at the municipal, provincial, regional and national levels or even at the shared ecosystem level. Thus, improved forest cover as an indicator of effective forest management is not currently monitored by LGU (provincial or municipal) or tenure/allocation holders. For instance, the claimed increase in forest cover to about 24 percent (World Bank, 2004) cannot easily be attributed to types or categories of forest land allocation. Knowing the forest cover per tenure/allocation category or LGU would strengthen accountability and facilitate enforcement, especially against illegal logging and forest conversion. Such information would also be useful in monitoring resource managers' (DENR, NIA, PNOC and holders of various tenure instruments) improved forest management resulting from strategic interventions or investments.

The information in Table 5 helps to gauge the effectiveness of forest management activities according to category of forest land allocation, at the national level. The holders or recipients of tenure or allocation – as resource managers – are expected to be responsible and accountable and to have the authority and rights to protect and manage the natural and planted forests in their areas according to the principles and practices of SFM and biodiversity conservation. Tenure or allocation holders thereby become "accountability centres", and are expected to plan, raise funding support for and carry out activities to protect and manage existing forests or to expand forest cover within their areas. Each holder is also expected to enforce individual property rights or respect prior rights while achieving defined objectives such as biodiversity conservation, enhancement of environmental services, including water and energy, and production of forest products. This perspective supports decentralization and the devolution of forest protection and management, and ensures that the limited human and financial resources of the State are invested in protecting and managing forests and biodiversity conservation in areas that are of great benefit to present and future generations.

⁶⁵ It should be noted that there are overlaps between CADC/CADT areas and protected areas and watershed reserves. Areas covered by protected area community-based resource management in the multiple-use and buffer zones of protected areas may also be included in the community forest land category. These overlaps may result in the double counting of areas in certain categories.

At present, the only forest lands covered by established institutional systems for tracking improvements or compliance to forest regulations are those under the private sector and CBFMAs. Planning and monitoring systems also exist for forests under protected areas or watershed reserves. Guiang (2001) argues that most forest lands under the private sector, those in protected areas and watersheds that have adequate funding and generate user fees, and a few CBFMAs or CADCs/CADTs that are supported by donor funds or generate revenue have some kind of on-site management, which is evidenced by active forest protection activities, approved management plans and functioning organizations. In theory, DENR, through FMB and regional offices, has a system to monitor the forest development, protection and management activities of all tenure and allocation holders. However, this function is currently carried out only randomly, and tends still to focus on tenure holders with timber or other resource use rights.

TABLE 5

Condition and potential of allocated forest land to address SFM and pover	v alleviation objectives
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	Allocation of forest land and unclassified areas									
	Watershed reserves and protected areas	Civil and military reserves	LGUs	Communities under CADCs/CADTs and CBFMAs	Private sector under FLAs, IFMAs, SIFMAs, TLAs, PLAs, etc.	Unclassifi ed				
1. Total area (ha)	4 165 000	295 000	Minimal	5 332 000	1 766 000	1 089 000				
2. Percent of total forest land and unclassified areas	26.2%	1.8%		33.5%	11.1%	6.8%				
3. Total forest cover (natural and planted) (ha)	Relatively high, as commercial logging in most of these areas was suspended or stopped	Very few areas have forest cover; largely brush and grassland	Some areas have natural forest cover, but fragmented	Most areas were under cancelled, abandoned or expired TLAs. Some have old growth forests, but mostly secondary natural forests and reforestation areas	Only TLA and some IFMA areas have natural forest cover	Most areas are already under some kind of upland cultivation				
4. Population	Mostly upland migrants in highly inaccessible areas; some indigenous people, especially in Mindanao and Northern Luzon	Some occupants or claimants within the reserves, e.g., Mount Makiling	Occupants and claimants in proposed communal forests and watersheds, or in those with co- management agreements	Upland migrants, indigenous people and communities of forest workers who remained in the area	Claimants and upland farmers, some indigenous people	Claimants and occupants				
5. Forest resources manager	Mostly DENR, NPC, NIA, PNOC	Military and academic institutions	LGUs – provincial, city, municipality, barangay	CBFMA, CADC and CADT holders	Holders of TLAs, IFMAs, FLAs, MPSAs, etc.	State through DENR				
6. Main objective of allocation	Protection of biodiversity, watersheds, etc.	Research and training; other uses	Protection, production, recreation, training and research	Production, protection	Production of goods and services	?				
7. Approved RMP	Some have; most do not	Some have; most do not	A few have	Those assisted with external funds have	Most have (required)					

8. Funding source for RMP implementa- tion	Mainly DENR; some from LGUs, NGOs, donors Environmental users' fees or charges	Budget of recipient of reservation Environmen tal users' fees	LGUs' IRA, donors, private sector (contracts) Bonds Fees for environmental uses or resource use rights Share of national government's income from natural resources	POs (value of labour) Revenues from resource use rights Rental, entrance fees Private sector via business contracts Donors DENR?	Private sector capital Revenues from resource use rights	?
9. Mechanism for multisectoral monitoring and enforcement	Established PAMBs; none or internal to DENR	Not clearly defined; mostly internal to recipient	Multisectoral with DENR, POs, LGUs, civil society	Emerging; involves DENR, LGUs, POs, civil society	Holder, DENR	Via checkpoin ts and issuance of use rights
10. Legal instruments for allocating forest land	Proclamations, presidential decrees, and republic acts; with CADCs and CBFMAs in multiple-use and buffer zones	Proclamatio ns or presidential decrees	Co-management agreements DENR proclamation orders No IRR for allocating the 5 000 ha under the LGU	CBFMAs, CADCs, CADTs, CSCs, CALCs/CALTs	TLAs, IFMAs, PLAs, FLAs, SLUP, MPSAs, etc.	To be classified
11. Bundle of rights to communities	Limited and only in multiple-use and buffer zones	Not defined, restrictions defined in the proclamatio n and recipient	Partly defined in Joint Memorandum Circular 2003-01 and other policies	Defined under CBFM policies; depend on DENR's regulatory powers	Limited; defined by the holder and DENR	De facto
12. Bundle of rights to private sector	Almost none, only possibility of joint ventures in recreation, multiple-use and buffer zones	Not defined, restrictions defined in the proclamatio n and recipient	LGU contracts with the private sector	Restricted by DENR regulations	Defined by policies, but generally unpredictable and unstable, especially for tenure	De facto
13. Responsibility , accountabilit y and authority for designated protection forests and forest land	DENR, whole area considered protection forest land (in partnership and collaboration)	Allocation holder. Protection areas may be delineated and managed as protected areas as part of RMP	Allocation holder. Protection areas may be delineated and managed as protected areas as part of RMP	CBFMA/CADC/C ADT holder delineates protection areas and may partner with public and private organizations for protection, development and enterprises	Allocation holder delineates and manages protection forests as part of RMP	?
14. Responsibility , accountabilit y and authority for rehabilitation and development	DENR and other partners for delineated areas	Allocation holder, based on approved RMP	LGUs, based on approved RMP	CBFMA holders, based on approved community resources management or ancestral domain sustainable development plans	Allocation holder, based on approved RMP	?

15. Potential to produce timber	Low	Low	Moderate	Moderate (smallholder scale from managed natural forests)	High (from plantations and managed natural forests)	Depends on site and risks taken by occupant
16. Potential to produce non-timber	Moderate	Low	Low to moderate	Low to moderate	Moderate to high, depending on incentives	
17. Potential to produce high-value crops	Low	Low	Moderate to high	Low to moderate, depending on government support	High because of private sector efficiency	
18. Potential to provide environmenta l services – biodiversity, watershed, aesthetics	High	Low to moderate	Moderate	Low to moderate	Low to moderate	?
19. Potential to address poverty and equity	Low for poverty, high for equity because of intergeneratio nal perspective	Low to moderate	Moderate to high	High for equity, low to moderate for poverty, depending on rights and distribution of benefits within community	Low for equity, depending on efficiency of taxation Moderate for poverty, depending on local employment generated	?

Note: Areas under CBFMAs, CADCs and CADTs are greater than the estimated 4.9 million ha (World Bank, 2004) because of possible overlaps.

- CALC = certificate of ancestral land claim.
- CSC = certificate of stewardship contract.
- FLA = fishpond lease agreement.
- IRA = internal revenue allotment.
- IRRs = implementing rules and regulations.
- MPSA = mineral production sharing agreement.
- PO = people's organization.
- RMP = resource management plan.
- SIFMA = socialized industrial forest management agreement.
- SLUP = sustainable land-use planning.

Sources: FMB/DENR, 2000; Guiang, 2001.

Forest management in set-asides for public goods

Set-asides for protected areas and watershed reserves cover at least 28 percent of the total classified forest land, but suffer from low levels of public support and financing. Thus, the objectives of

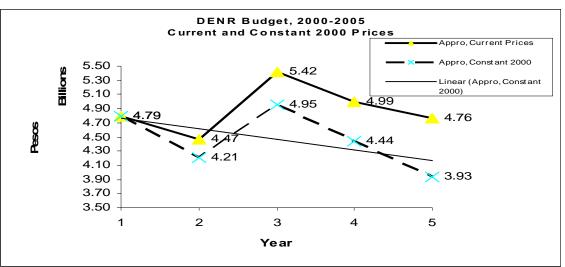
biodiversity conservation and watershed management have only partially been achieved. Most protected and watershed management areas are only "on paper", with minimal protection activities on the ground. The laws, proclamations and administrative orders that allocated these areas as setasides have not ensured sustainable funding to support biodiversity conservation, protection, development and rehabilitation activities. In fact only one of the eight protected areas covered by specific legislation has an annual budget allocation (Agaloos, 2005). The legislation establishing forest lands as protected areas or watershed reserves forms the basis for restricted use of forest in these areas. With limited funding and staff, some protected areas and reserves have become open access and are highly susceptible to illegal logging, poaching and conversion via slash-and-burn farming.

Existing policies give top priority to biodiversity conservation and watershed management, but these commitments are not backed up with accompanying budgetary allocations. Over the years, there has been strong political will to issue orders and instructions to ban all kinds of logging and extraction in set-asides and to declare more protected areas and watershed reserves. There are now 430 such areas, including more than 140 watershed reserves. Protected areas are the responsibility of only 1 100 DENR staff members out of a total of more than 20 000. Many protected area supervisor (PASU) and watershed management offices are understaffed and have minimal operational budgets for carrying out their basic tasks, functions and responsibilities.

Only half of the Philippines' 430 protected areas have PAMBs that are mandated by law to provide oversight, direction and advice in the protection and management of these areas (World Bank, 2004). Most PAMBs and their corresponding PASUs need capacity building in order to carry out their functions effectively, and most are perceived as "extensions of DENR" rather than local bodies that represent the different stakeholders in the protected area or watershed reserve.

In 2004, only 131 protected areas had established integrated protected area funds. These generated a total of at least p86 million, but only 12 protected areas had access to funds from the national treasury (Agaloos, 2005). Limited budgetary support for set-asides has restricted forest protection, the activities of PASU offices, livelihood support for communities, tenure processing in buffer and multiple-use zones, capacity building of PASU staff and local stakeholders, and social marketing (NIPAP, 2001; World Bank, 2003; Agaloos, 2005). Protected areas and watershed reserves require huge investments from DENR, LGUs, civil society and community organizations in order to carry out increasing activities, address property right issues in buffer and multiple-use zones and resolve indigenous people's claims. The Philippines, which is one of 25 hotspots in terms of threats to biodiversity, will continue to be plagued with the issue of funding (Figure 2) as DENR's annual budget is expected to stagnate in coming years. Despite higher costs, DENR has to perform with a smaller real budget than it had in the past (World Bank, 2005).





Source: World Bank, 2005.

Large-scale donor funding for selected protected areas and watershed reserves in the 1990s helped establish specific management systems in these areas. Since donor support ended, many areas are threatened by illegal logging, forest conversion, bioprospecting and the entry of upland migrants.66 Less has been invested in watershed management than in protected areas, and most budget support for watershed management has been linked to the construction and operation of multi-purpose hydroelectric dams, national irrigation systems and other national initiatives. It is now well-known that fewer than 10 percent of the more than 140 watershed reserves are under effective and functional management. Except for the energy generated by hydroelectric dams, LGUs and communities obtain few clear benefits from protecting and managing upper watersheds. Efforts to set up and operationalize user fee systems that link watershed management with local water districts and/or communal irrigation systems have met with mixed success (Borlagdan, Guiang and Pulhin, 2001; DAI, 2004). User fees from watersheds and protected area systems have potential as a major source of financing (Bautista, 2003) for environmental protection, livelihood assistance and other activities.

Forest management in private sector forest land

The strict regulation of timber extraction from natural forests has made it more difficult for the private sector to manage forest land. Only those private sector bodies with access to ADB and Land Bank of the Philippines financing for industrial tree plantations, or to long-term funds, are able to protect and manage their forest land effectively. Although forest land allocated to the private sector accounts for only 12 percent of total classified forest land, it is expected to produce, process and supply most domestic demand for timber and other products. After the martial law years, civil society and the government became more vigilant in monitoring allocations to the private sector, including extraction activities and compliance with regulations. Corruption and abuse in the private sector became a major issue in the late 1980s and early 1990s, and many private sector forest management agreements were suspended, not renewed or cancelled. The private sector's future participation in forest management and development has been the subject of much discussion and policy debate. Many suspended TLA holders abandoned their forest areas in order to reduce operational costs, sell their equipment and processing facilities and phase out gradually from the industry. Those that remained have sustained their operations by diversifying into high-value crops and forest plantations, processing imported logs and buying logs on the open market. Except for TLA and IFMA holders, private sector bodies are less concerned to manage natural forests sustainably, especially old growth forests, as the long-term benefits from investing in these types of forests are uncertain.

Compared with the government's grants and loans to rehabilitate watersheds and protected areas or to subsidize communities' tree farm and agroforestry initiatives, the private sector has invested less in developing forest plantations. As a result, the Philippines has become increasingly dependent on remaining natural forests and mature planted forests as sources of raw materials. Over the last 15 years, there has also been increasing dependence on imports of timber and wood products to meet domestic demand. The minimal investments in forest plantations even in highly suitable plantation areas such as Eastern Mindanao have been a major concern among industry players, policy-makers and academic, who have advocated strongly for improved policies and the addressing of constraints (Sanvictores, 1997; Acosta, 2003; Tesoro, 2005).

The most commonly mentioned constraints are inadequate policy incentives, the high cost of financing activities, insurgency and the presence of occupants and claimants in forest lands that are suitable for forest plantations. There are also urgent issues regarding overregulation of the industry, boundary conflicts and immediate access to standing timber through the clear-cutting of inadequately stocked secondary forests. Simplified operational guidelines are needed to promote decentralized investments in forest plantations with the participation and support of local leaders, industry players and policy-makers. Without sustained efforts to improve the investment environment for forest plantations, the Philippines will continue to experience shortages of local

⁶⁶ The World Bank's GEF, the European Union (EU), USAID's Biodiversity Conservation Network and FPE provided major support to selected protected areas. GEF and the EU, for instance, supported 18 protected areas with US\$28 million. These funds were earmarked for community organization, PAMB strengthening, resource management planning, livelihood assistance and advocacy for legislation, among other purposes. The World Bank, ADB and JBIC also provided support to the protection, rehabilitation and management of selected watersheds in the country.

timber and wood supplies, which will make illegal logging and timber poaching highly lucrative, especially in open-access and accessible forests, such as government reforestation projects that are not well guarded and protected. In December 2004, suspension of the timber harvesting rights of IFMA holders all over the Philippines, except in much of Eastern Mindanao, strengthened the view that the private sector has no future in the Philippines' forestry sector.

Forest management by communities

As shown in Tables 2 and 5, at least 33 percent of the country's classified forest land has been allocated to upland communities of both migrants and indigenous people. The allocation of forest land to communities was largely driven by the adoption of CBFM as the strategy for sustainable forestry and social justice in the Philippines. This strategy specifies that forest communities should be considered legitimate resource managers of the nation's forests. CBFM policies include a mechanism for legitimizing resource access and use rights through two kinds of long-term tenure instrument: CADCs for indigenous people, and CBFMAs for upland migrant communities. CADCs recognize indigenous people's ancestral claims to public forests, forest land and the natural resource assets that these contain, as well as their right to occupy, develop, manage, protect and benefit from these forest lands and resources. CBFMAs legitimize the rights of migrant communities to the forests and forest land that they now occupy and on which their livelihoods depend. In both arrangements, the communities interface with the government is their respective POs.

CBFM was conceived to benefit communities in the management of production forests and forest land, the protection and management of protected areas and reservations, and the management of multiple-use forests and forest land under LGUs and other government agencies. In its pursuit of these three principles, the government seeks to promote sustainable development, democratic access to forests and forest resources, improved socio-economic conditions for upland communities, decentralization and devolution of forest and forest land management, and conservation of biodiversity and maintenance of environmental services. These five principles have guided CBFM activities since the approach was conceived three decades ago.

From its start as a forestry rehabilitation approach that covered only individual and family upland farms or claims, the Philippines' CBFM approach now promotes community-wide involvement (including that of both migrants and indigenous people) in the following areas: (1) land with productive residual and old growth forests; (2) replanted forest land and ongoing reforestation projects; (3) grasslands threatened by the expansion of upland agriculture; and (4) multiple-use land and the buffer zones of protected areas⁶⁷ and watershed reserves (Borlagdan, 1996; Pulhin, 1998). This is consistent with Executive Order 318 of 2004, which promotes SFM in the Philippines. In each of these areas, the CBFM approach seeks to ensure long-term communal tenure (including individual property rights exercised within communal tenure frameworks), diverse land-use mixes and the development of creative contractual business or production arrangements with individual and corporate investors or partners.

To date, only 30 percent of CBFMA and CADC holders have affirmed or approved RMPs and annual work plans. Only a few CADCs and CADTs have completed their ancestral domain sustainable development plans. In addition, it is not clear how the communities will obtain the funds for implementing their RMPS, given the suspension of community harvesting rights and the ending of the ADB/JBIC forestry loan project that funded most community reforestation and rehabilitation efforts (World Bank, 2004).

Except those CBFMA or CADC/CADT holders that receive grants or subsidies from LGUs, most community organizations or indigenous people are not able to protect and manage their forest land effectively. Over the last 13 years, DENR's budget for the CBFM programme averaged less than p200/ha. As a result, only 8 percent of the total area under the programme has been developed with agroforestry, orchards or tree farms (Metin, 2005). Table 6 shows who should or could fund CBFM implementation in the Philippines. Given the country's current budget deficit, those who should be

⁶⁷ Buffer and multiple-use zones range from 30 to 50 percent of protected areas according to the management plans of Bataan National Park (30 percent), Siargao Protected Area (86 percent of terrestrial area), Agusan Marsh (30 percent), Kanlaon National Park (30 to 40 percent), Mount Apo National Park (30 to 40 percent, based on map) and Mount Kitanglad (30 to 35 percent).

providing funding (DENR, LGUs) cannot do so adequately, especially for extension, capacity building of community organizations, provision of seed capital for alternative livelihoods or community enterprises, and closing business arrangements with investors.

The harvesting of mature plantation timber or secondary natural forests within CBFMA and CADC tenured areas has been a contentious issue among tenure holders, POs, policy-makers, LGUs, DENR and civil society. Since 1995, the timber resource use rights of CBFMA holders have been cancelled or suspended three times. At present, communities' timber (natural and planted) harvesting rights have been suspended indefinitely. Legitimate timber harvesting generates the revenue for communities to finance the corporate fixed costs entailed by their CBFMA and CADC commitments. For example, POs have to finance the costs of protecting the remaining natural forests, developing and managing bare forest land, assisting and expanding their membership, improving their coordination and management efforts, rehabilitating environmentally sensitive areas, and initiating community enterprises such as agroforestry and smallholder tree farms. The members of most POs can commit only limited amounts of voluntary labour or time to operate check points, carry out forest patrols and plant trees in critical areas. The shortage of employment opportunities in upland areas further limits many members' availability, as poverty drives them to augment their farm incomes by seeking wage labour outside the CBFMAs and CADCs. If POs are not granted legal harvesting rights in productive residual forests or mature planted trees, they will have nothing with which to balance these costs.

Owing to the limited public subsidies and government support for CBFM and communities' highly restricted access to timber and non-timber as sources of revenue, most forest land in these areas is likely to be abandoned over time. The inadequate support system for extending agroforestry technologies has constrained many CBFM communities' diversification of upland-based sources of income. There is also the issue of having to wait at least three to five years before an upland agroforestry system becomes productive and viable. Most agroforestry systems (especially those adopting hedgerow-based systems) require large labour investments during the early stages of development. This situation has restricted the potential of CBFM to raise communities from poverty and subsistence, and has made it very difficult for many POs to protect and manage their forest land.

There might also be the risk of increased conversion of forests (brush and accessible secondary forests) into upland agriculture, as happened in the past. The concept of a "social fence" and community-based forest protection no longer functions in CBFM areas, and the programme is perceived to have failed, even though many people believe that the policies are sound. The support structure and governance mechanisms to support the CBFM strategy have failed to match the intentions of the policy.

TABLE 6

Key CBFM activities	Source of funds							
	DENR	Donor agencies	NGOs	POs	Resource use rights	LGUs	Private sector	
1. Planning and allocation of CBFM areas	Yes	Yes	?	?	?	Yes	?	
2. Social preparation of communities	Yes	Yes	Yes	Yes	?	Yes	?	
3. Processing, validation and awarding of CBFM tenure	Yes	Yes	Yes	Yes	?	Yes	?	
4. Helping communities prepare their RMPs and annual work plans, including resource use rights	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
4. Protection and management of CBFM areas	?	?	?	Yes	Yes	Yes	?	

Possible sources of funds for CBFM implementation

			1				
5. Development of CBFM areas, including infrastructure, plantations, tree farms, individual property rights, community enterprises and savings and credit systems	Yes						
6. Helping CBFM tenure holders obtain international certification of sustainable community forestry	?	Yes	Yes	Yes	Yes	Yes	?
7. Monitoring CBFM areas for compliance, according to key performance indicators	Yes	?	Yes	Yes	Yes	Yes	?
8. Providing natural resources management, enterprise development and agricultural extension to CBFM communities	Yes						
9. Establishment of processing plants	?	Yes	?	?	Yes	?	Yes
10. Procurement and management of business facilities	?	Yes	yes	Yes	Yes	?	?

Forest management by LGUs

As mentioned elsewhere, increasing areas of forest land in the Philippines will be allocated to LGUs or will require LGUs' attention for protection, management and support. LGUs are becoming more aware that the forest lands within their political jurisdiction are natural assets that can be converted into productive resources. These areas could become major sources of LGU revenues, while functional watersheds and safer water quality could provide savings from reduced costs for public infrastructure maintenance, disaster relief and health services. These areas could stabilize underground aquifers and become sources of local timber, wood products and high-value products including, perennial fruit crops.

Under the Local Government Code of 1991 and DENR/DILG Joint Memorandum Circular 2003–01, LGUs are expected to become directly involved in co-managing forest land that is not currently under effective management, especially watersheds that have a direct impact on the supply of domestic water, irrigation systems or the attractiveness of resorts and recreation areas. Current policies encourage or require LGUs to participate in PAMBs, watershed management and the steering committees of publicly operated water and nature-based ecotourism facilities. Under the Philippine Clean Water Act, LGUs will eventually take a more proactive role in the protection and management of headwaters. With the increasing interest in governance-oriented forest land-use planning and allocation, LGUs will be more active in tenure assessment, controlling illegal logging, enforcement, promotion of investments in forest land and assisting communities in improving their livelihood and community enterprises. Policies to make LGUs visible and active participants in forest land management are being put in place; the challenge is how to make these policies a reality, starting with co-management agreements that share the burden of rehabilitation and management.

LIVELIHOOD AND ENTERPRISE OPPORTUNITIES

In the 1970s and 1980s, the forest industry was a major provider of employment and economic opportunities in both rural and urban areas. Excluding the numbers employed in semi-legal, small-scale forest-based enterprises, illegal logging, small-scale processing and marketing, rough estimates of the numbers employed in the processing of forest products alone ranged from 120 000 to 150 000 (Ramirez and Laarman, 1993). In 1990/1991, the authors estimate that forest extraction accounted for only 10 percent of the total 313 000 person-years at the national level, while forest product

processing, forest development activities and professional/managerial support contributed at least 44, 36 and 11 percent, respectively. These figures drastically changed in the 1990s, when most TLAs were cancelled, suspended or not renewed. Many forest-based local communities became virtual "ghost" towns, and significant numbers of unemployed forest workers turned to illegal logging, rough processing and trading as they adjusted to different livelihood systems. These forest-based ventures sustained most of the local economies in areas with remaining natural and planted forests.

It should be noted that labour-intensive forest extraction could generate as many as 26 persondays per cubic metre (Dugan, 1988) while mechanized systems can engage only 1.64 person-days per cubic metre. Guiang (2004) estimated that communities have a total of at least 1.3 million ha of productive residual forest, which should be capable of producing 1.3 million m^3 of wood a year without depleting the resources – 1 ha of residual forest can yield at least 1 m^3 annual growth increment under a 35-year cutting cycle (Angeles, 1999). The productive residual forest in the Philippines has an annual incremental growth rate of at least 1.38 to 1.91 percent of the naturally growing stock (averaging 70 to 271 m^3 per hectare in CBFM areas) and about 5 percent of the growing stock with timber stand improvement (Revilla, 1981; Natonton and Abraham, 1984).

If CBFM/CADC holders with tenure or rights to their forest land – which number almost 900 communities – were given the right to harvest and sell 500 000 m³ per year, a total of at least 60 000 full-time jobs would be created; this is equivalent to half of the employment generated during the height of timber extraction activities. With the increasing demand for local wood resulting from the gradual phase-out of TLAs and their processing facilities, illegal forest extraction and processing in open-access forest land has generated employment opportunities. The booming population and the underdevelopment of small and medium industries in urban areas have left many families with no choice but to seek livelihoods in the uplands. This situation was aggravated by the weak performance of national and local economies in the 1980s and early 1990s, which encouraged massive lowland migration to the uplands and opened self-employment opportunities in upland agriculture, agroforestry and other forest-based activities.

The major changes to the forestry sector in the 1990s, combined with the availability of US\$600 million in loan and grant funds for nationwide contract reforestation with a total annual target of at least 100 000 ha, created employment in forest development and related activities for many communities, NGOs, LGUs and forestry professionals. Reforestation, agroforestry and forest plantation developments generated at least 110 000 person-years, 40 percent of which were contributed by the private sector. However, most development assistance and grants started to wind down in the late 1990s, leading to the decline of much forestry-related employment.

The potential of each forest land allocation category to ignite local economies and generate livelihood and enterprise opportunities for local people and forest occupants depends largely on private sector investment, public sector financing for forest development activities, public subsidies to support small-scale agroforestry and tree farms, and sustained and predictable harvesting rights for timber and non-timber products in the remaining natural forests and mature planted forests.

For CBFM communities, Clausen (2003) states that "decentralizing forest resources and empowering local communities to partake in their wealth under transparent conditions has most recently become key to developing rule of law and democratic systems so essential to prosperity and ecological sustainability." He further points out that in the Philippines, communities with mixed livelihood systems generally practise SFM. These communities do not depend on timber as their main source of income, and operate indigenous systems, upland/agroforestry farms, harvesting and processing of non-timber forest products (NTFPs), and local microenterprises. The unpredictable issue and approval of resource use rights to CBFM communities has generally constrained the process of "borrowing from nature" – i.e., the harvesting, processing and marketing of natural and existing timber and NTFPs – in order to finance sustainable agroforestry production systems, build community financial assets and reduce dependency on timber (Ramos, 1996). This strategy is difficult for communities living in and near protected areas. These communities have very restricted access to borrow from nature, and are directed towards non-destructive livelihood systems that often require subsidies and intensive capacity building assistance to make them viable (Mordeno, 2000).

Experience of supporting prime communities in the Philippines has shown that initial investments should focus on building capacities to link enterprises with support institutions, providing skills for managing economic activities, and helping to realign enterprises with

opportunities in the local economy. Many of the livelihood options that were promoted in upland communities appear not to be sustainable, replicable or viable (World Bank, 2000; 2001).

Table 7 outlines the potential of each forest land allocation category with respect to livelihood and community enterprises. These potentials can only be achieved with strong participation from private sector forestry, development assistance for forest land rehabilitation and development, and the participation of LGUs in helping communities to turn their "idle" forest land into tree farms, agroforestry farms or orchards.

TABLE 7

Potential of each forest land allocation category to provide livelihood and community enterprises at the
local level

Forest land allocation category	Potential to generate employment	Potential to generate community enterprises	Comments/remarks	
1. Allocation for protected areas and watershed reserves	Relatively low from forest extraction Low to medium from self- employment in service sectors, e.g., tourist guiding, agroforestry in multiple-use and buffer zones Relatively high from rehabilitation and development	Low to medium, depending on opportunities for community-owned ecotourism facilities	Rehabilitation and forest development efforts depend on government financing or business contracts in multiple-use and buffer zones	
2. Allocation for LGUs	efforts Relatively high if agroforestry and forest development activities are supported Low to medium if there are opportunities for business contracting with the private sector	High, with initial support for infrastructure development for community enterprises in agroforestry or high-value crop production systems	LGUs have more flexibility in allocating financial resources to support social infrastructure, extension services and the establishment of community enterprises	
3. Allocation for communities	Relatively high if communities have resource use rights from the natural and planted forest; low if they do not Low to medium opportunities from agroforestry and tree	Relatively low, unless there are grants or profits from revenues from resource use rights High if savings and credit systems function with	Heavily dependent on grants, subsidies and incomes from resource use rights	
	farms if individual property rights and savings and credit systems are established or developed	broad membership from the community		
4. Allocation for the private sector	Relatively high from forest development and processing activities	High if savings and credit system for community members is established and functional	Heavily dependent on stability and predictability of business environment, combined with acceptable cost of financing, market and availability of suitable forest land for development	

INSTITUTIONAL AND ORGANIZATIONAL CAPACITIES

The capacities of different types of tenure and allocation holder and of the institutions that support, supervise or monitor the protection and management of forest land vary, depending on how they are organized, directed, rewarded and managed.

Tenure and allocation holders with the capacity to establish effective forest land management – technical, organizational and financial – that achieves objectives are: those in the private sector; DENR PAMBs and PASUs for protected areas and watershed reserves; NPC, PNOC/DOE and NIA for reserves with other government agencies; and to a certain extent LGUs, especially if they are willing to engage professionals in forest management (Guiang, 2004b; Borlagdan, 1999; DENR/CBFMO, 1998). Given the right policy and financial incentives and opportunities for suitable business contracting arrangements with CBFMA or CADC holders, most private sector resource managers are effective in forest management. They are generally able to organize, mobilize, leverage

and coordinate efforts to achieve objectives, especially in establishing, managing and processing forest plantations.

The holders of CBFMAs, CADCs and CADTs are probably the weakest in terms of technical, financial and organizational capabilities. These groups of resource managers need a long-term strategy for capacity building, mentoring and follow-up. Allocations to this group are motivated by the drive for social justice, equity and poverty alleviation. DENR, LGUs and civil society may have to focus their meagre resources on strengthening the capacities of community organizations so that they can carry out their forest management functions effectively. However, support systems for communities - such as microfinance, social infrastructure, and assistance with community organization, savings and credit systems, forest management, agroforestry, etc. - are not well organized and are poorly institutionalized at the local level. DENR, NCIP and civil society in general are also sceptical about communities' ability to harvest forest products sustainably in order to provide an immediate source of income to carry out their obligations under tenure instruments (Guiang, 2004c). In addition, the sudden increase in allocations of forest land to communities caught DENR, NCIP and LGUs by surprise, and they were not ready to help communities establish sound forest management. Existing budgets, organizational structures and technical skills are inadequate to service the forest management needs of communities. There are indications, however, that the government, civil society groups and donors are beginning to allocate more funds to strengthening the capacities of community organizations that have obligations to protect and manage forest land (World Bank, 2004). Such assistance includes support to community enterprises, microfinance, savings and credit systems and alternative livelihood systems.

With the right leadership, training, operational support and rewards for good performance, government resource managers (DENR, NPC, PNOC, NIA, etc.) can implement the right programmes effectively to achieve biodiversity conservation and a sustainable flow of environmental services. Financing for forest protection, development and management is not a major problem in forest reserves with facilities that generate revenues, such as energy, irrigation and domestic water supply. DENR can also broaden its sources of finances by entering into co-management agreements or contracts with LGUs, civil society groups and the private sector. With appropriate grants and donor funds, DENR could also fund its own capacity building, support for communities and other local stakeholders, capital expenditures and some operational requirements. The potential to double DENR's budget for forest management is promising, as most LGUs are able to budget at least 10 percent of the 20 percent development fund from internal revenue allotments. Operationally, DENR could obtain more than p2 billion a year from the LGUs' 20 percent development funds.

Most LGUs (leaders and key technical staff) need assistance in protecting and managing their forest land effectively, especially that under co-management agreements, communal forests and communal watersheds. The current election cycle does not encourage LGUs to invest in forest development and management given the long-term gestation of these investments, unless such investments result in more votes, better environmental services to the population, reduced environmental hazards and an improved image for LGUs as political leaders.

FOREST POLICIES TO SUPPORT FOREST LAND ALLOCATION

As shown in Tables 1 and 5 and Annex 1, forest land allocations in the Philippines have been triggered by recent policy changes. At the national level, the Philippines has plenty of policies that promote SFM, and these have responded to changing circumstances. However, the implementation of these policies through appropriate structures, governance mechanisms and budgetary support to national and local programmes and initiatives is another issue. Some of the policies overlap, and some have been rendered obsolete by more recent decisions. The flexibility to modify forest policies also varies according to when and by whom they are issued. This section briefly discusses the stability of selected policies and their impact on tenure and forest ownership under different forest land allocations.

As shown in Figure 1, forest policies in the Philippines fall into three categories: (1) laws enacted by the Congress of the Philippines or the Regional Legislative Assembly in Mindanao; (2) presidential decrees, orders and proclamations; and (3) department administrative orders or memorandum circulars. Laws can be amended only by Congress itself. Decrees are equivalent to laws and can only be changed or modified by Congress. Department orders can be changed or modified by the DENR Secretary. Policies become more difficult to change or modify as they progress from administrative orders to presidential issuances and acts of Congress. In the past, most policy-making followed top-down approaches – clients, local stakeholders and civil society groups were not consulted or asked to provide comments and suggestions. With increasing local demand for more responsive forest policies, presidential issuances and department orders, including proposed laws, now undergo several layers of public hearings and consultations.

DENR is mandated to provide implementing rules and regulations for presidential executive orders and laws enacted by Congress. Before they become operational, all policies are published in national dailies, after which DENR or the relevant agency – e.g., PNOC, NIA or NPC – is responsible for disseminating and explaining them to its own ranks, clients and customers and the general public. From time to time, DENR compiles and publishes a compendium of policies affecting protection, management and enforcement in the forestry sector.

Given this situation, the allocation of forest land in the Philippines can be changed easily only at the level of department administrative orders. The current allocation of 28 percent (4.165 million ha) to protected areas and watershed reserves can only be altered by repeating the procedure that established it in the first place. Allocations to communities, especially CBFMAs and CADCs (4.9 million ha), and the private sector, such as IFMAs and SIFMAs (1.76 million ha), are easier to reassign to other allocation categories, at least in theory. In practice, however, most communities are the *de facto* resource managers of their forest lands, and only the DENR Secretary or his/her designees can cancel or alter these areas. The implications of cancellations are very difficult to deal with, especially those regarding allocations to communities, indigenous people and private sector bodies that have invested huge amounts of capital in forest development and processing facilities. At least 45 percent of classified forest land may be reallocated to protected areas or watershed reserves, or be put under co-management agreements. However, CADCs that are converted to CADTs become more permanent because these are virtually "private titles" allocated to indigenous people.

Forest land allocation in the Philippines demands huge public subsidies to realize effective sound management in protected areas, watershed reserves and community-managed forest lands. At least 61 percent of classified forest land is in these categories, and when unallocated/open-access areas and unclassified forest land are included, the government is faced with the management of at least 90 percent of total forest land. Funding of forest land that generates revenue under the responsibility of other government agencies is less of a problem than it is for forest land over which DENR or LGUs are responsible. Only land that is in the private sector can be managed and supported outside the government budgetary system.

In order to reduce the government's massive task in protecting and managing so much forest land, the immediate challenge is for LGUs and DENR to close open-access areas by establishing appropriate forms of tenure and allocation. This will provide some kind of "social fence" and put in place a de facto arrangement for the protection, development and management of forest land. Another challenge is for the government to strengthen the security of forest land tenure under private sector responsibility, and to deregulate (while monitoring compliance and equity-related performance) community groups' public and private contracting of investment, technology and managerial expertise in forest land. In protected areas and watershed reserves, DENR may devolve LGUs with co-management regimes for the protection and management of smaller watersheds or protected areas that do not have high biodiversity indices or where the biodiversity is of only local importance. Through DENR, the national government could then focus on protected areas or critical watersheds that have regional, national, international and intergenerational importance. It could also concentrate on improving policies, planning and monitoring systems for each type of allocation, in collaboration with LGUs and local stakeholders, and on enforcing laws and regulations with various constituents - LGUs, civil society, community groups, the media, private sector associations and academic/research institutions.

ASSESSMENT OF SELECTED TENURE AND ALLOCATION INSTRUMENTS

Table 8 summarizes the results of an assessment of selected tenure and allocation instruments that was carried out under the USAID-funded EcoGov 2 in Northern Luzon, Central Visayas and Western and Southern Mindanao (Castillo and Guiang, 2005). Using an instrument based on the indicators in Annex 2, a total of 113 tenure and allocation holders were assessed: 75 percent were communities, 2 percent LGUs, 1 percent other agencies, 19 percent private sector, and 4 percent DENR. Twelve key performance (assessment) indicators were used to gauge improved or effective

forest management. Eight of these indicators are essential for any kind of effective on-site forest management: approved RMP; regular budget to support protection and maintenance; adoption of a policy for addressing individual property rights and prior claims of claimants/occupants; functional management structure; year-round forest protection and law enforcement activities; compliance with policies, rules and regulations; contribution to the livelihoods of communities; and a functional internal M&E system. Tenure or allocation holders were assessed as effective if they reached the third or fourth levels of each criterion.

Based on the assessment, only 25 percent of the community tenure holders were meeting the requirements of effective forest management. It should be noted that in the assessment, communities were the largest tenure group studied. LGUs and other government agencies achieved the highest scores, but these results might not represent the national situation because only a few such tenure holders were assessed. The private sector performed best, with 40 percent of tenure holders managing their forests effectively, followed by State-managed forest land, with 35 percent.

Community tenure holders performed well regarding individual property rights for occupants and claimants on their forest land, agroforestry and tree plantation developments in claimed/occupied areas, and to a certain extent the participation of women and other marginalized groups. However, community groups had the lowest score with respect to regular budgets or sources of income to support forest management activities. This means that most of their forest management and protection activities are conducted by volunteer labour or on individually claimed upland farms and cultivated areas. Private sector tenure holders did better in terms of regular budget support, enforcement, resolving conflicts and the participation of women and marginalized groups. State-managed forest lands with strong participation from LGUs (Quirino and Nueva Vizcaya) and PNOC (Negros Oriental) did well in all the assessment criteria.

Regarding the assessment criteria, the following observations can be made:

- Having an approved RMP reduced or helped to resolve conflicts among tenure holders, claimants and occupants of the forest land.
- Regular budgetary support or a regular source of income was directly correlated with the tenure holder's capacity to design policies and enforce laws within its forest land, based on an established M&E system for forest management.
- Functional organizations had a positive impact on forest protection and the resolution of conflicts.
- Strong and established linkages made it possible for tenure holders to obtain funds and grants for livelihood assistance and forest development activities.

Overall, the assessment found that 75 percent of tenure holders did not have approved RMPs, 82 percent did not have regular budgetary support for forest management and protection activities, 60 percent did not have clearly defined policies regarding individual property rights, 66 percent did not have functional management organizations, 67 percent did not conduct year-round forest protection and enforcement activities, 69 percent did not comply with policies, rules and regulations, and 80 percent did not have a functional internal M&E system to monitor forest management improvements over time.

TABLE 8Assessment of tenure holders, by allocation type

Criterion of assessment	Percentage achieving acceptable (third) and full (fourth) levels of the criterion					
	Communities	LGUs	Other agencies	Private	State	
Total sampled	85	2	1	21	4	
1. Draft RMP completed and submitted to DENR or NCIP	15%	50%	100%	57%	50%	
 Regular budget, source of income or committed volunteer labour for overheads, protection and maintenance 	6%	100%	100%	57%		
3. Individual property rights policy for occupants/claimants adopted	35%	50%	100%	43%	50%	
4. Moderately active, functional management organization	19%	100%	100%	76%	75%	
5. Regular year-round forest protection and law enforcement activities	22%	100%	100%	71%		
6. Compliant (no violations) with policies, rules and regulations in tenure/allocation agreement	29%	100%	100%	34%	25%	
7. Internal M&E system developed and established with unit and clear reporting system, but not fully functional	15%	100%	100%	28%	25%	
8. Support for community members from non-forest and forest-based livelihood systems	20%	50%		24%		
9. Formal mechanism for resolving or managing conflicts established and only periodically used	21%	50%	100%	33%	75%	
10. Formal linkage established with DENR, LGU and other resource institutions for technical assistance and small grants for community organizations	37%	100%	100%	33%	50%	
11. Agricultural and forest production areas being developed by individual property right and tenure holders or through government rehabilitation contracts	36%	50%		29%	25%	
12. Women and marginalized community groups participate in forest management activities such as protection, extension, livelihood, savings and credit	26%	50%	100%	29%	50%	
Overall	25%	75%	83%	40%	35%	

Note: In the assessment, tenure holders that achieved levels 1 and 2 were presumed not to have adopted effective on-site forest land management in their areas.

Source: Castillo and Guiang, 2005.

Effectiveness and efficiency of the different forest tenure systems

This section discusses the effectiveness of the different forest tenure systems in terms of direction and support at the national and operational levels, present and projected national needs, the capacities of tenure and allocation holders, and the involvement of local stakeholders. The effectiveness of a tenure or forest land allocation system starts with the definition of a national vision and direction and the putting into operation of these through supportive implementation policies, structures and resources to ensure that they are carried out in the most efficient manner. First, an action plan should define what needs to be done, by whom, with whom, for whom, how and for how long. Ensuring effectiveness (what are the right things to do) and efficiency (doing things in the right way), and agreeing on expected results and impacts will help achieve the objectives of SFM in the Philippines.

ALLOCATIONS FOR BIODIVERSITY CONSERVATION AND WATERSHEDS

Under this allocation category, government managers are accountable and responsible for ensuring the effectiveness and efficiency of forest land management. At the national level, the vision and direction of this kind of forest land allocation are clear and well defined in the National Integrated Protected Areas Act, proclamation orders and specific legislative acts for certain set-asides.⁶⁶ National policies that cover these set-asides are more stable than the policies that affect other allocations of forest land. However, owing to the extent of set-asides (which account for 28 percent of total forest land), effective implementation has suffered because the area concerned is too large for government managers to support effectively and efficiently.

The number and area of the set-asides, and the declining budgetary support available for them have led to limited resources being spread so thinly that forest land management has been rendered ineffective. The costs of managing protected areas and watersheds are too great for current budgets, unless environmental financing schemes with user fees and other non-traditional financing, such as integrated protected area funds, are established.

Another issue is the need to simplify protected area and watershed management, especially given the increasing interest of LGUs, communities and civil society groups. There are opportunities for collaboration and partnership, but broader participation in the governance of set-asides will require DENR to adapt itself to becoming a major provider of policies, standards, technical assistance, capacity building and direction. Its role will increasingly become that of broker and facilitator at the local and national levels, as it improves policies to attract more support for biodiversity conservation, watershed management and other related objectives.

There is clearly an urgent need to evaluate existing protected areas and watershed reserves in the context of the capacities of government resources – financial, technical and organizational. Plans for watershed areas are less clear and well defined than those for protected areas. As a result, watershed management has received fewer resources and less attention from government managers and donor agencies, except when it is directly linked to multipurpose hydroelectric dams. There is a need to prioritize protected areas and watersheds and to decide which should be managed at the national level, which at the local level and which should be disestablished to meet production and poverty alleviation objectives.

Allocations of forest land for protecting biodiversity and watersheds have been effective. Biodiversity conservation in the Philippines has improved in terms of the awareness, implementation and participation of LGUs, civil society and communities in buffer and multiple-

⁶⁸ Eight protected areas in the Philippines are covered by republic acts that establish them as biodiversity conservation areas and/or watershed reserves.

use zones, but the country continues to lose endemic species and its efforts to curb increasing threats to biodiversity are inadequate. Private sector bodies have not yet been engaged in areas that interest and benefit them. Overall, protected area management has been effective, but not efficient because resources have been spread too thinly and local capacities need to be strengthened. A number of endemic species are threatened and some protected areas are not able to control illegal logging and forest conversion because of their open-access conditions. These areas suffer from insufficient resources and inadequate stakeholder participation in protection.

Allocations of forest land with the main objective of managing watersheds have been less effective and efficient than those for protected areas, with the exception of some forest lands under PNOC or NPC. LGUs and local stakeholders still have a limited understanding of the benefits of watershed management, especially with respect to supplying domestic, industrial and irrigation water, reducing damage to lives and infrastructure in the lowlands, and preventing or controlling the pollution of rivers, coastal areas and beach resources. Although the National Strategy for Watershed Management was adopted in 1999, based on consensus among different stakeholders, the State has yet to translate it into investments in watersheds.

In addition, watershed occupants, claimants and stakeholders need to know their roles, rights and benefits in watershed management. Local decision-makers must be involved in determining what needs to be done, and how, in watersheds that are of interest to local stakeholders. Without such buy-ins of local stakeholders and clearly defined property rights, most watershed reserves will be considered open-access and will continue to be major entry points for illegal logging and forest conversion activities.

Strategies to alleviate poverty and broaden livelihood opportunities for communities in watershed reserves have not generally been effective because of restrictions and regulations. The approach of "protect, prohibit and punish" should perhaps give way to that of "protect, participate and profit" (Larsen, 2000) given that most watersheds provide more benefits to off-site than on-site communities.

ALLOCATIONS TO COMMUNITIES

At the current level of assistance, regulation and support services for CADC, CADT and CBFMA holders, the technical, organizational and financial capacity of these tenure holders to satisfy their obligations as forest managers may be less than expected. Most communities need support in improving their social infrastructure, developing their capabilities to manage forest land, and using their land assets for productive household enterprises.

Allocations to communities are a way of transferring natural resource assets to marginalized groups to promote social justice and poverty alleviation. The CBFM policy addresses the equity issue. However, the paper transfer of assets to communities must be accompanied by the provision of financial and other support from government, civil society, LGUs and/or the private sector, or it is unlikely that communities will be able to achieve the objectives of SFM. At present the extent and nature of the forest land under communities' responsibility exceeds their forest management capacity. The situation is aggravated by confusion about the objectives of CBFM: should communities manage their forest lands for poverty alleviation, forest production, biodiversity conservation or environmental protection? Although the CBFMA instrument is a co-production management agreement, government policy-makers and civil society are not sure what its objectives should be; many would like the communities to protect their forests while subjecting them to highly regulated timber production, harvesting and marketing activities.

If the transfer of forest lands to communities is meant to address social injustice and poverty alleviation, why are this set of tenure holders so overregulated and suspected of overcutting and abusing their forest resources? Why are the services of the LGUs and national line agencies concerned not designed to make communities' assets productive while protecting biodiversity and the environment and producing goods and services?

Numerous assessments have shown how communities with adequate incentives invest their own labour in developing tree farms and small-scale agroforestry systems while protecting their standing capital (Borlagdan, 1999; Borlagdan, Guiang and Pulhin, 2001; Guiang, 2004c). It has been observed that communities with communal tenure instruments protect their areas from forest fire, poaching and the entry of slash-and-burn farmers (Mickelwait, Harker and Guaing, 1999). It has also been

observed that overregulating communities' resource use rights and the nationwide cancellation of those rights leads to fear, uncertainty and suspicions of government insincerity about the CBFM strategy. The three nationwide suspensions of CBFM harvesting rights have eroded communities' motivation and commitment to protect and manage their forests. The national federation of CBFM holders has lost momentum and the means of coordination to help articulate its needs with DENR and other policy-makers.

Communities that received public subsidies, support and intermittent harvesting rights were able to protect and manage their forest land, help their members by creating livelihood and employment opportunities, and gain self-respect, capacity and confidence to manage their areas (Borlagdan, Guiang and Pulhin, 2001; Abregana, 1999; SmartWood, 2003). CBFM has great potential in supporting livelihoods, providing farm-level incentives for adopting agroforestry and tree farm technologies, and lifting marginalized communities from extreme poverty and hopelessness. The increasing participation and involvement of LGUs (provincial, municipal and barangay) in CBFM appear to be a promising substitution for what DENR and NCIP could not provide at the national and local levels. There is, however, a need for DENR, LGUs and civil society groups to develop consensus regarding the provision of forest resource use rights to communities. It is not fair for the government to expect communities to protect and manage forest areas without benefiting from the standing timber and forest development that they introduce. Without benefits for local communities, CBFM simply becomes a government tool for carrying out its forest protection tasks, and could even become a strategy that condemns poor upland communities to further and deeper poverty and injustice.

ALLOCATIONS TO THE PRIVATE SECTOR

Following the decline of the forest industry, which was highly dependent on natural forests as a source of raw materials, forest plantations now seem to be the sunrise industry in the forestry sector. Throughout the Philippines, there are highly suitable areas for the development of short-, medium- and long-rotation forest plantations. Agroclimatic conditions in Eastern Mindanao, for instance, are ideal for fast-growing small-, medium- and large-scale forest plantations. This area could easily produce the timber and wood needs of the country, which would require only 25 000 to 50 000 ha of harvestable plantations every year, depending on the rotation, yield and management of forest species (Nuevo, 1998; Guiang, 2001). Plantations at various scales could be established, with integrated processing and transportation systems under joint venture or sub-contract arrangements in IFMA, SIFMA, CBFMA, CADC and CADT areas.

Private sector holders of forest tenure allocations have developed fewer forest plantations than expected because the overall business environment, regulations and incentives are perceived as unfavourable. However, given their technical, organizational, entrepreneurial and financial capacities, this set of tenure holders could give the country's forest production a major boost. Identifying the trigger points, opportunities for interventions and right mix of incentives and regulations are the challenges for DENR, the private sector, funding agencies and civil society groups.

Given the private sector's history of forest management in the Philippines, it is increasingly difficult for private sector tenure holders to advocate the harvesting of natural timber on their forest lands, even after they have developed forest plantations. Allowing the development of plantations with the right mixture of high-value tree crops, timber and other forest species and cash crops (and even livestock) may improve the profitability, payback periods and returns on investments in tenured areas under private sector management. At present, the private sector's delays in developing forest plantations is making the Philippines increasingly dependent on imports, substitutes and supplies from illegal logging activities. In the meantime the country is losing out from the opportunity costs of time lost, reduced local economic growth and an underemployed rural population.

ALLOCATIONS TO LGUs

Although there is still only limited experience of how LGUs fare in protecting and managing forest land, what experience there is shows that with the right mix of political will, adequate resources and long-term perspective they can help to stabilize tenure rights, claims and occupations in forest lands under co-management agreements; resolve claim and boundary conflicts, which tend to reduce

productivity; mobilize available local grant resources for forest development activities; and apply political pressure for collecting taxes on the use of watershed resources (Agbayani, 2005; Velasco, 2005).

With administrative policies in place under the Local Government Code, many LGUs are becoming proactive players in planning, allocating and managing the forest land within their jurisdictions. Their activities are motivated mainly by demands from their own constituents, the fear of floods and other disasters, the need to broaden local revenue sources, and the need to expand agricultural production areas using environment-friendly, socially acceptable production technologies. Effective forest land management by LGUs may not occur immediately, but calculations show that if each municipality develops 500 to 1 000 ha, there will be a total of at least 0.5 to 1 million ha of forests to supply local demands. This is assuming that only 1 000 out of 1 480 municipalities have forest land within their political jurisdictions. Plantations could be developed directly by LGUs with communities or local resource organizations such as academic and research institutions, civic groups, schools and other interested local groups. When established and developed, these areas would be more than enough to supply the country's annual demand for timber and wood.

Many LGUs have the financial and organizational capacity to develop forest plantations and protect and manage communal forests and watersheds, with or without natural forest cover. LGUs could assign or create local natural and environmental management offices, but most need capacity building in technical forestry and related skills. They can obtain financing from their own internal revenue allotments, joint ventures, business contracts or credit. The only major constraint is the three-year cycle for electing local officials, which may discourage them from embarking on forest development that requires five to ten years before it brings benefits to local populations and constituents. The enforcement of forestry regulations by LGUs, in collaboration with tenure and allocation holders, will help to monitor forest land management within their political jurisdictions, especially if they have agreements with DENR to plan and implement approved forest land-use plans.

CONCLUSIONS

The effectiveness of different tenure and forest ownership categories in achieving SFM varies. Although relevant national policies exist, the required support systems to achieve SFM in each tenure and allocation category have not been adequately developed and put in place. The Philippine selective logging system, which supported almost three decades of forest management, has become obsolete. The shift in forest management, beginning in the late 1980s, to achieve the multiple objectives of providing biodiversity conservation, environmental services, poverty alleviation and decentralization caught forest management institutions by surprise. At present, these institutions are still struggling to align their mandates, structures, budgets and capacities with the national vision and strategies to improve planning, implementation and monitoring. The private sector, academia and many practitioners foresaw the collapse of the forest industry and shifts to other forms of management as early as the 1960s and throughout the 1980s and 1990s (Sanvictores, 1960; Nasipit Lumber Company, 1984; Olizon, 1991; Bautista, 1990). However, advocacy continued to be driven by timber-oriented forest management systems, and operational policies and implementation continued to focus on curbing illegal logging instead of addressing the basic issues of property rights, improved support to communities, the deregulation of investments in forest production, biodiversity conservation and improving environmental management services.

Recommendations for improving tenure and forest ownership

The present mix of tenure and forest ownership categories in the Philippines is the result of compromise, consensus and agreements among different stakeholders: government, scientists, practitioners, civil society, the private sector, academia, donor agencies, communities and LGUs. Unlike the past, when forest management interests were driven mainly by the private sector, the present system of forest management remains volatile with respect to the conflicting objectives of biodiversity conservation, promoting environmental services, social justice and poverty alleviation, and forest production. The present tenure and allocation categories in forest lands emerged from two decades of a suppressed political system during the martial law years. They are the results of an articulated national vision and strategies embedded in the 1987 Philippines Constitution.

The major challenge is how to muster enough energy, sustained advocacy efforts, capacity and political will to support the multiple objectives of forest management. Focus, persistence and willingness to choose, decide and act on suitable options and recommendations are needed in order to translate the SFM vision into reality, following the path of decentralization, devolution, deregulation, sound governance, subsidiarity and partnership with different stakeholders. Improved forest management in the Philippines will bring both private and public benefits, regardless of who the tenure and allocation holders are. Rather than losing all direct and indirect economic benefits from forest land, the Philippines is better off establishing effective on-site management systems under different tenure and allocation categories (Francisco, 2004).

As shown in Table 9, a major effort is needed to strengthen the rights of communities and local stakeholders in protected areas and watersheds, enforcement, results-based monitoring and decentralized forest management. At present, the bundle of tenure rights for communities, LGUs and the private sector needs to be strengthened, deregulated (especially for forest plantations) and simplified to reduce transaction costs. This is the most appropriate way of moving Philippines forestry forward, as failure to address the weak bundle of rights for community and private sector tenure holders will lead to increased illegal logging and the conversion of forest to other land uses – as has been happening in Mindanao according to forest products, and the deepening budget deficit will force policy-makers to consider forest land an asset that could be opened for mining, commercial plantations of high-value crops and government-driven land reform programmes. These triggers may not strengthen property rights, and will move in a direction that may not be favourable to sound forest management in the Philippines.

Of all categories of tenure holders and forest ownership, communities and LGUs have the greatest need of assistance to strengthen their capabilities to manage forests. The State managers of protected areas and watersheds have increasingly to use collaborative and partnership mechanisms with communities (especially in buffer and multiple-use zones), the private sector and NGOs to enable them to protect these areas to ensure biodiversity and supply environmental services to onand off-site communities. To minimize confusion, national and local governments have to design clearer policies and guidelines and communicate which types of forest land tenure mechanisms are designed to achieve biodiversity conservation, environmental services, forest production, poverty alleviation and social justice.

Right	State	Communities (CBFMSs, CADCs and CADTs)	Private sector (IFMAs and SIFMAs)	LGUs (communal forests, co- management)
1. Use (benefit)	Limited – buffer and multiple-use zones	Yes for agricultural crops; controlled for timber and NTFPs	State-controlled for timber and NTFPs	State-controlled for timber, NTFPs and water
2. Management (use of asset)	State-controlled	Part of approved RMP (individual property rights)	Part of approved RMP (individual property rights)	Part of approved RMP (individual property rights)
3. Income (derive)	User fee	Yes for agricultural crops; controlled for timber and NTFPs	State-controlled	Jointly decided between DENR and LGUs
4. Capital (transform)	Limited: controlled by environmental compliance certificate	None	None	None
5. Transfer	None	Inheritance: next of kin	None	None

TABLE 9 Bundle of rights under each tenure type

Specifically, the shift in the Philippines tenure and forest ownership system over the last 15 to 20 years requires the government, through DENR to do the following:

- Strengthen organizational and technical capacities to assist new emerging clients in forest land management LGUs, communities, civil society groups, other government agencies such as NCIP, PNOC and NIA, and socially and environmentally responsible private sector groups. DENR should clearly define its functions: what to do, with whom, for whom, and how. The present system of DENR technical delivery is not client-oriented and is based more on regulation than incentive.
- DENR should strengthen its overall capacity as a broker and facilitator in drawing up collaboration and co-management agreements, resolving conflicts among key parties or claimants in forest land, enforcement and compliance at the tenure/allocation level, promoting private investments and business arrangements among tenure holders, and using governance mechanisms to carry out performance-based forest management systems.
- Focus and concentrate financial, human and organizational resources in protecting and managing forest land that is allocated for public goods as set-aside, and develop and install governance-oriented systems at the local level for holding tenure and allocation holders accountable, responsible and transparent in their forest management practices.

The following subsections make some more specific recommendations.

Recommendations for improving forest land management to conserve biodiversity and promote sustainable environmental services

There is limited capacity to protect and manage existing protected areas fully. There is therefore a need to reassess the prioritization of protected areas made in the Philippines Biodiversity Conservation Priorities Project in 2001. The 430 protected areas could be reduced to slightly more than 200 sites and still address the biodiversity needs of Philippine forests. Other biodiversity values may be captured and protected under different tenure regimes. DENR and LGUs should also take measures to protect the 96 priority areas not currently under a conservation management system. Meanwhile, there is a need for guidelines for the disestablishment of existing and proposed protected areas that do not meet biodiversity conservation criteria.

Information about the biodiversity conservation role of forests is not properly disseminated and linked with forests' role in providing other environmental services such as water supply, carbon sequestration and cultural integrity. Conservation efforts should explore the development of water user fees to support the protection of forests with high biodiversity values.

The absence of commonly accepted and consistently implemented performance indicators for assessing improvements or declines in the biodiversity resources of protected areas remains a challenge. Key performance indicators for estimating or determining baselines and periodic improvements in

biodiversity conservation efforts – including changes in forest cover – should be developed and implemented. More transparency and accountability are needed in the monitoring of PAMBs' performance in managing protected areas, including measuring biophysical indicators and the publishing of financial expenditures.

Livelihood and enterprise interventions in protected areas have had mixed results in terms of reducing threats to biodiversity conservation. While individual and community livelihood activities can help improve the lives of communities living in and adjacent to protected areas, efforts should focus on encouraging communities to develop land outside these areas.

Broader and more equal stakeholder participation (of communities, the private sector and academic/research organizations) in PAMBs is needed; PAMBs are still perceived as extensions of DENR to protect and manage protected areas. Private sector groups should be represented in PAMBs, especially when there are clear indications that the private sector is directly benefiting from the environmental services provided by the protected area. DENR should provide a mechanism that defines and facilitates functional coordination among DENR, other government entities and NGOs for protected areas management.

There is inadequate funding to carry out core activities in effective protected area management. With the annual costs of managing medium to large protected areas ranging from p5 million to almost p10 million (Rambaldi and Bacudo, 2000), the Philippines can afford to fund only a few protected areas, which involves providing support through personnel (core technical and support staff), logistics (mobility, transport, communications, etc.), the construction or maintenance of necessary infrastructure (towers, monitoring stations, etc.), information dissemination, regular meetings and feedback, data gathering and analysis of biodiversity indicators, delineation of boundaries, and addressing property right claims. Given the government's budgetary constraints, there is an urgent need to broaden the sources of funds for protected area management, such as through the recently established Tropical Forest Conservation Foundation, user fees and rentals. The establishment and institutionalization of integrated protected area funds in all protected areas needs to be accelerated.

There are overlaps and conflicts in institutional mandates among the Local Government Code, NCIP, mining law and the National Integrated Protected Areas Act with respect to resource use permits, environmental requirements, the collection of fees, land-use development and enforcement. Resolution of these conflicts needs to consider community property rights in buffer and multiple-use zones, natural resource sharing arrangements and social infrastructure support from LGUs.

There is an emerging issue of conflict between the objectives of mining and those of biodiversity conservation. This is going to intensify as the government presses to identify new and immediate sources of revenue to address its worsening fiscal deficit (ESSC, 1999b; Malayang, 2003). National and local governments, NGOs, the private sector and other stakeholders need to agree on acceptable trade-offs and environmental standards in order to generate jobs and income while conserving biological diversity. NCIP's procedures for free and prior consent, DENR's issuance of resource use rights and permits, the issuance of environmental compliance certificates within protected areas, and bioprospecting requirements need to have simple, clearly defined guidelines to minimize illegal entry, harvesting, bioprospecting and collusion arrangements.

There is a need to consider increasing budgetary support through the internal revenue allotment for LGUs whose area covers large portions of national protected areas, in order to provide an incentive for LGUs to participate actively in protected area management. Other forms of incentive could also be investigated.

There is a need to review allocations for watershed management and recommend institutional strategies that would best put some watersheds under co-management agreements or devolve them to LGUs, other government agencies or academic and civil society organizations for management. Devolved and co-managed watersheds should have management boards to monitor their progress, and performance indicators for sound forest land management.

Recommendations to improve the management in forest land allocated to communities

Provide exclusive resource use rights to CBFM communities. The greatest support that the government can give to CBFM communities in a globalizing economy is to provide them with stable and exclusive tenure over forests and forest land, including exclusive harvesting rights (Honadle, 1981). Such monopolistic access would ensure the competitiveness of CBFM communities, especially in the world market for quality Philippine mahogany (dipterocarps), which is one of the best materials for

manufacturing high-value wooden furniture. Access might also encourage private sector groups to enter joint venture or other business arrangements with CBFM communities whereby they jointly operate more efficient processing facilities. However, monopolistic access has to have open and welldefined governance processes at the community level, including civil society participation in reviewing the performance of CBFM holders in their application of resource use rights, and including transparent and equitable sharing of benefits among the members of community organizations. Such arrangements have great potential for building the income, organizational strength and environmental commitment of forest communities.

Provide CBFM communities with appropriate and timely support systems. Monopolistic access to raw materials will not be enough to make CBFM communities globally competitive. They also need assistance in improving the effectiveness of their marketing and the efficiency of their transport, harvesting and processing systems. They need technicians to help them adopt low-impact harvesting systems, access to working capital loans, instruction on how to manage such funds, and business administration expertise to help them develop stable and sustainable community enterprises such as small-scale tree farms, agroforestry systems and orchards.

Help CBFM communities to obtain international certification. CBFM communities also need assistance in obtaining international certification of sustainable forestry, which would grant them access to the international market for certified wood – a market that pays premiums for goodquality products, while educating communities on sustainable forestry techniques. Although the merits of certification are known, environmental NGOs in the Philippines have yet to give it priority. As Philippines forestry emerges from a period of forest abuse in the 1960s and 1970s, many environmental NGOs and DENR officials still doubt the capacity of CBFM communities to manage forests and forest land sustainably; although most support the CBFM strategy in principle, in practice many are still reluctant to give communities timber and non-timber use rights. The international certification of CBFM communities would provide clear evidence that these self-governing entities can manage their resources sustainably. Support for international certification would ensure that when tenure holders in forests and forest land are capacitated, they can become effective self-governing entities. Currently, no donor agencies or NGOs are prepared to help shoulder the initial costs of assessment and certification.

Recommendations to improve forest land management by the private sector

DENR should clearly define whether the private sector's participation in improving forest lands management in the Philippines should be only in developing and managing plantations in their IFMAs and forest land under joint venture agreements, or whether it should also involve contracts with holders of CADCs and CBFMAs, or LGUs in co-management areas. If the government opts for this latter policy, it should deregulate the industry to the maximum extent possible, and hold private sector tenure holders accountable and responsible for achieving the standards of SFM. The present confusion about allowing the private sector to harvest secondary natural forests in their IFMAs according to their performance opens up opportunities for negotiation and rent seeking.

Provide adequate incentives and support to the private sector in establishing and operating integrated processing plants for plantations, tree farms and NTFPs to serve both the local and export markets.

Identify opportunities for the private sector to enter into business arrangements in community-managed forest land, protected areas, watersheds and LGU co-managed forest land, through transparent competitive bidding processes.

Recommendations to strengthen LGUs' participation in forest land management

Establish an M&E system at the LGU level to be jointly managed by LGUs, DENR and civil society to monitor key performance indicators for improved forest management. Such a system could start with the indicators listed in Annex 2. For shared ecosystems (large protected areas, watersheds, comanaged areas and IFMAs), the provincial LGU, regional DENR, civil society and private sector groups should create a coalition to oversee the performance of each tenure and allocation holder within the political jurisdiction of the municipality, city or province. Enforcement, the curbing of illegal logging and the promotion of investments in forest development and related processing could then become joint efforts between national and local governments, with the participation of local stakeholders. The establishment of this M&E system will gradually shift monitoring from compliance to a performance-based system based on selected key performance indicators.

LGUs must plan and construct supportive and strategic social and production-oriented infrastructures (e.g., farm-to-market roads, nurseries) to help the different tenure and allocation holders within their jurisdictions reduce forest management and marketing costs and invest more in improving forest lands as natural assets.

Given the opportunities for LGUs to manage or co-manage communal forests, watersheds and openaccess areas, they should consider long-term investments in forest land as a means of broadening their sources of local revenue, ensuring local employment, minimizing environmental hazards and improving the tourism potential of their localities. They should facilitate the closure of all openaccess forest land within their political jurisdictions, in collaboration with DENR, community groups, the private sector and civil society.

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ANNEX 1: MAJOR LEGAL INSTRUMENTS GOVERNING FOREST LANDOWNERSHIP, ACCESS AND CONTROL IN THE PHILIPPINES

Instrument	Basis	Description
Community-Based Forest Management Agreement (CBFMA)	DENR DAO 22-93; Executive Order 263 (1995); DENR DAO 96-29 (1996)	A production sharing agreement between a community and the government to develop, utilize, manage and conserve a specific portion of forest land, consistent with the principles of sustainable development and pursuant to a community resource management framework.
Certificate of Stewardship Contract (CSC)	Executive Order 263 (1995); DENR DAO 96-29 (1996)	A contract for 25 years, renewable for another 25 years, awarded to individuals or families occupying or tilling portions of forest land.
Industrial Forest Management Agreement (IFMA)	DENR DAO 04-97	A 25-year production sharing agreement between DENR and an individual or corporation to develop, utilize and manage a tract of forest land, other public or private land to grow timber species including rubber, and non-timber species including bamboo and rattan.
Socialized Industrial Forest Management Agreement (SIFMA)	DENR DAO 24-96	An agreement between a natural or juridical person and DENR wherein the latter grants to the former the right to develop, utilize and manage a small tract of forest land (1 to 10 ha for individuals or single families, 10 to 500 ha for associations or cooperatives), consistent with the principles of sustainable development.
Certificate of Ancestral Domain Claim (CADC)*	DENR DAO 02-93	A certificate issued by DENR to an indigenous cultural community/indigenous people declaring, identifying and recognizing its claim to a particular traditional territory, which it has possessed and occupied, communally or individually, in accordance with its customs and traditions since time immemorial.
Certificate of Ancestral Land Claim (CALC)	DENR DAO 02-93	A certificate issued by DENR to an indigenous individual, family or clan, declaring, identifying and recognizing his/her/its claim to a particular area he/she/it has traditionally possessed, occupied and used by him-/her-/itself or through his/her/its predecessors in interest since time immemorial.

Note: CADCs and CALCs are being converted into certificates of ancestral domain title (CADTs) and certificates of ancestral land title (CALTs) under the 1997 Indigenous Peoples' Rights Act.

DAO = department administrative order.

Source: World Bank, 2003.

ANNEX 2: PERFORMANCE INDICATORS OF EFFECTIVE MANAGEMENT IN NATURAL FOREST AND BARE FOREST LANDS

Performance indicators of improved management of natural forests

Natural forests = old growth and residual/secondary forests and degraded forest lands that are undergoing natural processes of regeneration.

Effective on-site management = when tenure holders meet at least six conditions. These conditions have been sufficiently met by tenure holders that have:

- an updated management plan approved or ready for approval;
- budget allocated for at least annual management operations, enforcement and forest protection activities;
- gender-oriented individual property rights rules for legitimate claimants and occupants within the tenured/allocated area, and initial implementation of these;
- a functioning management structure;
- at least two of the other conditions (water user fees between water districts and forest managers, linkages with resource institutions or the private sector, a conflict resolution system, support to non-forest based livelihoods).

Method of measurement = periodic tenure assessments conducted by DENR, LGU and civil society groups (with standard performance indicators) as the basis for determining which tenured areas are under effective management.

Performance indicators of bare forest land under productive development

Refer to bare forest land (open areas and grasslands) in production areas.

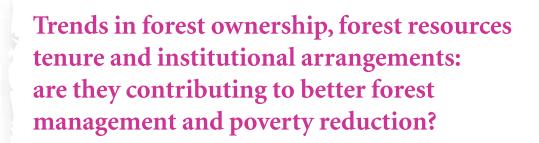
Productive development = the necessary conditions are:

- area covered by individual property rights (the Indigenous People's Rights Act), e.g., certificate of stewardship contract or communal tenure with provisions for individual property rights;
- claimants adopting sustainable upland agriculture and agroforestry systems, tree farms, plantations, orchards or other sustainable/protected uses;
- areas protected from slash-and-burn and/or wild grassland fire by tenure/rights holder.

The LGU Municipal Agricultural Office or the Municipal Environmental and Natural Resource Office must provide extension services to upland farmers.

Method of measurement = periodic tenure assessments conducted by DENR, LGUs and civil society groups (with standard performance indicators) as the basis for determining which tenured areas are under productive development.

Source: EcoGov 2 Project. 2005. Performance monitoring plan. DAI/EcoGov 2 Project. Prestige Towers, Ortigas Complex, Pasig City, Philippines.





Introduction

BACKGROUND ON FOREST RESOURCE TENURE IN THAILAND

This case study on trends in forest ownership, forest resources tenure and institutional arrangements in Thailand was undertaken for FAO as a component of a regional study. A major goal of the study is to achieve a better understanding of the roles that forest ownership, tenure and management play in poverty alleviation. The study aims to identify the necessary policy, institutional, operational and resource conditions that contribute to a better understanding and implementation of forest management, which may lead to poverty mitigation. It also examines forest resource tenure arrangements and forest land uses, and how these affect the forestry-related programmes implemented by government agencies and other organizations in Thailand.

Since the Royal Forest Department (RFD) was established in 1896 to carry out forestry tasks under the Royal Thai Government, Thailand has enacted five main policies that are relevant to forestry and forest-related resources: (1) the first Forest Protection Act of 1913, for long-term forest exploitation benefiting the State; (2) the forest protection policy, which was introduced as part of the First National Economic and Social Development Plan (NESDP 1) of 1961 and comprised a few national acts (described in the following section) aimed at achieving 50 percent forest cover; (3) a policy aiming to achieve 40 percent forest cover, which was part of NESDP 3 in the 1970s and altered the original forest protection policy; (4) the first formal National Forest Policy, which was formulated by the National Committee on Forestry in 1983 and aimed at dividing the 40 percent of land under forest into 25 percent under economic or production forest, and 15 percent under conservation forest – these percentages were switched after the logging ban of 1989; and (5) the Forestry Master Plan, which was announced during the Queen's birthday speech on 11 August 2003 and aims to restore degraded forests, encourage the forest industry with various plantation schemes, and support the community forests that local communities have established and are managing, in spite of the long delay in enactment of the Community Forestry Act of 1992.

As Thailand was one of a first countries in the world to launch a total ban on commercial timber production (in 1989), its experience of this ban and other forest management issues should be valuable for other timber producing countries, especially those considering similar bans. This study describes the impacts of the logging ban and related policies in terms of their effects on subsequent forest policies and implementation, and on the forest tenure system in Thailand. It analyses the following issues: formal ownership of forest resources in Thailand's forestry sector; forest resources tenure in relation to land tenure systems in Thailand; changes and trends in forest management and community forestry in Thailand; the specific tenure arrangements that resulted from the changes in forest policies; and options for the way forward.

FORMAL FOREST RESOURCE OWNERSHIP IN THAILAND

Thailand has a total land area of 513 115 km² (about 51 million ha, or 320 million rai), and a population of 61.97 million people, with an annual birth rate of 1.33 percent in 2004 (RFD, 2004). The economy is diverse and comprises agriculture, manufacturing and service industries. The country has been urbanizing rapidly since the 1980s; in 1965, only 13 percent of the population lived in urban areas, compared with 23 percent in 1990, declining to 21 percent in 2000 (World Bank, 2000). Population density was 110 people/km² in 1990, rising to 120.3 people/km² in 2004 (RFD, 1998; 2004). Forest resources, forest land and agricultural land have been interdependent since the start of economic development in the 1960s; the economy is based on agriculture.

Thailand's forest resources: status, ownership and changes

Forest resources in Thailand have officially been owned by the State or the government, through RFD, since 1896. In October 2002, the government began to reform the bureaucracy of the whole country, and responsibility for forest resources was divided between two departments: RFD and a newly established Department of National Parks, Wildlife and Plant Conservation (DNP). RFD

oversees production in the forestry sector, and DNP the protection or conservation of forests. The ownership of forest resources remains under the government through these two departments. The private sector and/or local people cannot own any piece of natural forest; if they want to have their own forests, they have to establish forest plantations, forest farms or agroforests. Community forests, which have been in existence for several years now, have yet to be formalized, particularly regarding rights and responsibilities; this is owing to the long process of enacting laws, which started in 1990 (see section on Community management in the chapter on Changes and trends in forest management). Since the logging ban, a semi-private enterprise agency – the Forest Industry Organization (FIO) – has been the sole logging operator in plantations and the wood industry in Thailand.

Thailand's forest area diminished from 53.33 percent of the total land area in 1961 to 25.13 percent in 1998 (Charuppat, 1998; Lakanavichian, 2001), increasing up to 32.66 percent in 2004 (RFD, 2004). There were several reasons for the reported increase in forest area, which was based on the interpretation of satellite images; a ground survey verification has yet to be carried out. FAO (1999) estimated that only 22.8 percent of the country's total land area was forested in 1995. Annual deforestation rates were in excess of 3 percent for much of the 1961 to 2004 period (FAO 1998), the most rapid deforestation occurring during the mid- to late 1970s and early 1980s. Jantakad and Gilmour (1999) reported an annual deforestation rate of 3.85 percent between 1976 and 1982, which was among the highest in tropical countries. Mangrove forest destruction was also severe, with mangrove forests declining from 312 000 ha in 1979 to 53 000 ha in 1993, and continuing to decrease since then (Jantakad and Gilmour, 1999). FAO (1997) estimated that 329 000 ha of Thailand's forest area was being lost every year, equating to a forest loss of 2.6 percent. Most of the remaining forests have been logged, either legally or illegally, or encroached on for agriculture, while little regeneration has been undertaken. According to recent figures, the total area reforested between 1906 and 2004 lies somewhere between 1 050 753.16 ha (data from the FAO matrix for this regional study) and 1 086 010.6 ha (RFD, 1998; 2004; Green World Foundation, 1999).

Year	Remaining forest (rai)	Remaining forest (%)	
1961	171 017 812	53.33	
1973	138 578 125	43.21	
1975	128 278 755	40.00	
1976	124 010 625	38.67	
1978	109 515 000	34.15	
1982	97 875 000	30.52	
1985	94 291 349	29.40	
1988	89 877 182	28.03	
1989	89 635 625	27.95	
1991	85 436 284	26.64	
1993	83 470 967	26.03	
1995	82 178 161	25.62	
1998	81 076 428	25.28	
1999	80 610 000	25.13	
2000	106 319 000	33.15	
2001	100 639 000	31.38	
2004	104 744 312 (16 759 090 ha)	32.66	

TABLE 1	
Status and changes in forest cover, 1961 t	o 2004

1 rai = 0.16 ha.

The highlighted line (1975) is the target for Thailand's forest cover.

Sources: Charuppat, 1998; Lakanavichian, 2001; RFD, 2004.

FIGURE 1 Forest area in Thailand, 1976 to 2004

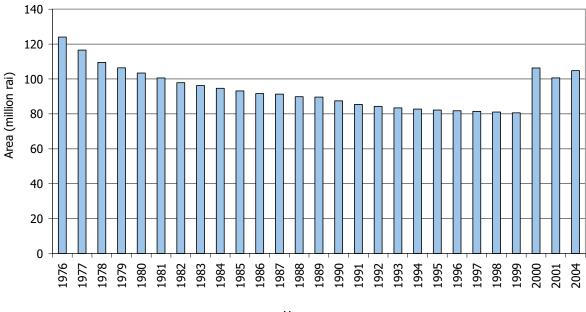




TABLE 2 Forest area by region, 1976, 1989 and 2004

	1976		1989		2004		
	Area (million ha)	% of total	Area (million ha)	% of total	Area (million ha)	% of total	
North	10.23	19.94	8.02	15.63	9.21	17.94	
Central	3.45	6.72	2.50	4.87	2.95	5.75	
Northeast	4.15	8.09	2.36	4.60	2.81	5.48	
South	2.01	3.92	1.46	2.85	1.79	3.50	
Total	19.84	38.67	14.34	27.95	16.76	32.66	

1976 = year of first reliable official data based on aerial photographs.

1989 = initiation of the logging ban.

2004 = latest year for which data are available.

FIGURE 2 Forest area by region, 1976

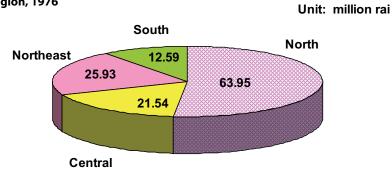
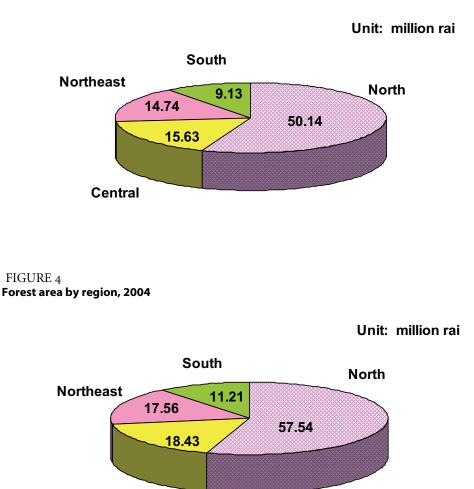


FIGURE 3 Forest area by region, 1989



Central

As a result of various pressures, particularly the calamity caused by devastating floods in the south of the country, the government imposed a total ban on logging in natural forests; no commercial timber production has been permitted since January 1989. Since then, national forest policy has been altered to improve its protective outcomes, including increasing the percentage share of conservation forest (called zone C forest) in total land area from 15 to 25 percent. In 1991, conservation forest's share was gazetted up to 27.5 percent. It should be noted that declared conservation forests might look promising on paper, but the reality is often very different. In addition, areas of conservation forest may be overestimated, owing to overlaps among the DNP units and among different categories of conservation forest.

There are two main types of conservation forest: areas established under laws and cabinet resolutions; and additional conservation areas, where certain types of land use are allowed and there are fewer restrictions. Total demarcated conservation areas, including forests, cover 41.76 million ha, accounting for 81.38 percent of Thailand's total land area; core conservation areas cover 18.72 million ha of this, or 36.48 percent of total area (Table 3).

Conservation type	Number	Area (million rai)	Area (million ha)				
1) Conserved area under laws and cabinet resolutions	1) Conserved area under laws and cabinet resolutions						
National park	103	33.00	5.28				
Wildlife sanctuary	55	22.31	3.57				
Forest park	70	0.50	0.08				
No-hunting area	56	2.69	0.43				
Watershed class 1	25	58.25	9.32				
Mangrove conserved forest	-	0.27	0.04				
Subtotal		117	18.72				
2) Additional conservation areas by other regulations	1 221	143.98	23.04				
Total		260.98	41.76				

TABLE 3

Forest conservation and forest reserve areas

Sources: RFD, 1998; 2004; Green World Foundation, (1999).

Policies and other aspects of the forestry sector

Although the government has been concerned about forest land destruction and degradation for a long time, it has only been able to protect forests minimally through forest acts such as the Forest Protection Act of 1913, the Wildlife Protection and Preservation Act of 1960 (amended in 1992), the National Park Act of 1961, and the National Forest Reserve Act of 1964. Since the logging ban came into effect in January 1989, the Forest Plantation Act was enacted in 1992, while the Community Forest Act, which was first drafted in 1992, is still waiting to be enacted. The logging ban has brought a halt to legal domestic supplies for the wood processing industry, which is now turning to neighbouring countries for its logs and sawnwood needs. This has resulted in Thailand being accused of spoiling its neighbours' forests (TFSMP5, 1993). In addition, illegal logging has increased in Thailand, mainly as a result of the high prices obtained for wood and logs (Tantiwitayapitak, 1992).

It is clear that RFD concentrated on conservation after the logging ban of 1989, when partnerships between RFD and log concessionaires were formally ended. Conservation forests have expanded, and now include the 15 percent of total land cover that was supposed to be production and economic forests (called zone E forests). This is because RFD forest plantations are unmanaged and logging is no longer permitted, so zone E forests have informally become zone C forests. Conservation forests originally covered national parks, forest park, wildlife sanctuaries, no-hunting areas and class 1A watersheds; since the logging ban, class 1B watersheds have also been considered conservation forest. Other protected areas that were declared later by the cabinet resolution are mangrove conserved forest and special protected forest. The preservation approach severely restricts the activities of forest-dependent people, particularly the hill tribal people who practise shifting or rotational cultivation in the uplands and highlands.

One of the main responses to deforestation has been the development of large-scale commercial forest plantations by the private sector (TFSMP5, 1993). Forest plantation was incorporated into the economic forest zone (zone E) largely because of government expectations that plantations can mitigate deforestation, uplift the forestry sector economies that have been ailing since the logging ban, and supply wood for domestic consumption. However, deforestation still occurs in natural forests, while reforestation has taken place on public and private land or in degraded forest. RFD issues long-term (e.g., 30 years) leases on degraded forest reserve for conversion to plantations, charging 10 baht (B) per rai (B62.5/ha) annually, but these leases have caused resentment among local villagers, farmers and non-governmental organizations (NGOs), who view commercial forest plantations as taking away local livelihoods (PER, 1992).

According to these farmers and NGOs, the natural forest biodiversity that yielded benefits to local people cannot be replaced by monocultures of fast-growing forest species. NGOs deplore the clearing of understocked forests to make way for monoculture plantations (PER, 1992). Farmers contend that farming can support many more people than commercial reforestation can, and prefer farming to employment in forest plantations. The main issue regarding plantations is the balance between local livelihoods for the poor and commercial plantations' benefits for the rich. In 1992,

commercial reforestation was stopped as a result of intense pressure from local farmers and NGOs (TFSMP5, 1993). This led to the present impasse in reforestation in Thailand, as shown in Table 5 further on in this case study.

Domestic trade of forest products relies on the wood imported by the wood processing industry. Some wood industries have been phased out because they could not import wood, and it seems likely that all wood product industries in Thailand will soon confront importing difficulties as exporting countries, such as Cambodia and Cameroon, start to ban wood exports (TFSMP2, 1993; Global Witness, 1995; Brunner, Boscolo and Karsenty, 2000). Thailand may have to compete with such wood-deficit countries as Japan for imports, international trade in forest products will become more competitive and prices will inevitably become very high. FIO has limited potential to promote the wood industry, despite its nearly ten years experience of logging operations in mature plantations. FIO's production for the wood industry is far smaller than it used to be. One of the main reasons for this might be the suddenness with which the logging ban was imposed; this caught FIO unawares and unprepared because it had been used to operating an intensive wood industry with high profits, based on logging concessions that had seemed endless.

Concerns have been raised regarding the dependency on imports of both wood and non-wood products. Some researchers and stakeholders suggest that serious consideration should be given to the possibility of reforesting part of the deforested area for the production of wood and non-wood products (TFSMP2, 1993). Forest plantation programmes should include local people in their development plans, and should identify appropriate scales, technology and available financing for building up new partnerships with local people. There is no reason for Thailand to import wood in the future, because there is enough land, technology and, perhaps, finance for growing trees (TFSMP2, 1993). The only way of returning FIO to its full operative potential is to revoke the logging ban so that it can resume logging in all plantations, including those of RFD.

Small-scale private plantations have been promoted since 1992, after the period of promoting large-scale plantations, but small-scale tree farms have had only minimal success, even though a number of local farmers have begun to plant species of forest tree. This may largely be the result of a shortage of incentives to counter the medium- to long-term waiting period prior to tree sales. The time it takes for trees to grow discourages villagers from planting them rather than agricultural crops. Plantation harvesting also involves lengthy legal procedures for tree felling and selling, and specific technology for some tree species, e.g., teak and dipterocarp. In addition, the government, through RFD, has not been able to support and strengthen the market system for small farmers in the plantation and wood products business. Most small local farmers therefore prefer agricultural crops to tree crops.

Current policies and legislation regarding development of the wood industry have been slow to reflect Thailand's need to produce its own wood products rather than continuing its high levels of wood imports. The government, through RFD, DNP and other relevant agencies, has encouraged tree growing and minimized wood consumption, but to little effect. Many people recognize that the country cannot rely on wood imports, either legal or illegal, owing to the declining number of wood exporting countries and high prices. Small farmers' cooperation in minimizing the demand for and increasing the supply of wood products is essential. Even more important is an understanding of small farmers' needs, such as materials, technology, extension services and land tenure security.

In conserving natural forest, RFD's forest protection has been intensified and implemented nationwide. Logging and forest commercialization are not allowed in protected natural forest; only forest plantations can be used for logging and wood sales. Thus, the only way to supply wood for the increasing domestic demand is to cooperate with local populations on small-scale plantations. Large-scale plantations by State enterprises or joint venture operations are feasible, but should incorporate the local private sector and local people as much as possible, in order to avoid general criticism and to encourage the acceptance of the large-scale operation.

SCOPE OF THE STUDY AND METHODOLOGY

This study encompasses primary quantitative data on forest ownership collected by RFD and the author, and secondary data on forest resources, forest ownership, the forest tenure system, and the landownership and tenure system in Thailand. It analyses both qualitative and quantitative forest tenure data from village case studies and other stakeholders in RFD, DNP and other related fields.

The methodology used includes stakeholder analysis (participatory techniques), direct and participant observations, key informant interviews and secondary data analysis.

Forest resource and land tenure systems in Thailand

HISTORY OF FOREST LAND ENCROACHMENT AND FRONTIER AGRICULTURE

To what extent should various actors have access to and control over forest resources in an open arena (Neef and Schwarzmeier, 2001)? Forest land encroachment has been the main cause of natural resource deterioration and degradation in Thailand, where most farmers in upland and highland areas clear forests to make way for frontier agriculture. In this section, land uses, including in forest areas, are presented and analysed for a better understanding of their relationships, particularly with forestry and agriculture.

Several direct causes of deforestation have been identified by researchers, academics and other involved agents. These causes are discussed in the next chapter. RFD's past attempts to rehabilitate degraded forests have had little success owing to the overwhelming constraints posed by illegal forest encroachers (Jantakad and Gilmour, 1999). It is estimated that about 1.3 million households live on surveyed (official) forest lands (TFSMP2, 1993), mainly as a result of incoherent and uncoordinated government policies regarding natural resources and agricultural expansion. During NESDPs 1 to 6, agricultural development for export was the main priority in Thailand's development, and farmers were encouraged to expand their farmland. Later, during NESDP 8 (1997 to 2001) – almost too late – the government recognized the negative environmental impacts that result from economic development without proper consideration of sustainability, the environment and local people's involvement. In the current NESDP 9 (2002 to 2006), the main focus is on restoring degraded natural resources and utilizing them soundly.

The logging ban announced in January 1989 was a response to severe floods with disastrous and tragic consequences centred in Nakorn Srithammarat province, southern Thailand (Phonpanpua, 1999; PER, 1992). Flooded areas covered all eastern coastal provinces from Chumporn, southwards to Narathiwat. The floods, and massive landslides that accompanied them, were caused by unusually heavy rains from 19 to 24 November 1988, which totalled 1 051 mm and caused 373 deaths (Nutalaya, 1991); the meteorological station in Nakorn Srithammarat province recorded the highest rainfall, at 447.8 mm, on 21 November (Wongwisetsomjai, 1991), and three villages were buried under between 1 and 3 m of sand and debris. This was the most devastating of the floods that occasionally occur in southern Thailand, and Nutalaya (1991) estimates that the total damage was B7 357 million. Thailand's location in the heart of continental Southeast Asia gives it a monsoon climate with irregular typhoons and depressions from the South China Sea. Several parts of the country suffer from frequent flash floods and similar disasters.

The catastrophe convinced the government to issue its Cabinet Order of January 1989, banning commercial logging and terminating timber concessions in natural forests, particularly in the uplands (Jantakad and Gilmour, 1999). The ban was the result of strong public pressure, as described by the Project for Ecological Recovery (PER, 1992) "the anti-logging sentiment that had started long before the flood now expanded, gaining momentum from these two events". The first of the two events referred to was the Thai conservation community's negative response to a ruling in favour of granting 22 logging companies rights over their concessions. These concessions were in areas demarcated as national parks and/or wildlife sanctuaries, such as Huay Kha Kaeng Wildlife Sanctuary, which was then awaiting the granting of World Heritage Site status by the United Nations Educational, Scientific and Cultural Organization (UNESCO); the sanctuary became a World Heritage Site, together with Thung Yai Naresuan Wildlife Sanctuary, in 1991. The second event referred to was the devastating flood described in the previous paragraph.

Following the logging ban, PER drafted a policy paper entitled "Ten measures to save the forests" (PER, 1992), which was submitted to the government with the backing of 21 NGOs. The policy paper demanded three main points: a comprehensive plan for protecting forest areas that had been part of concessions; economic and conservation forests to be administered under separate

regulations; and recognition of the rights of local villagers to own and manage their ecosystems as community forests.

As a consequence, the government altered the target areas for conservation and economic forests to 25 and 15 percent of the entire country area, respectively, thereby switching the original goals in the first National Forestry Policy of 1985. The Thai Forestry Sector Master Plan (TFSMP) was developed during 1990 to 1995, with expert support from the Finnish International Development Agency (FINNIDA). The TFSMP focuses on developing a forest policy based on sustainable management and the conservation of natural forests and ecosystems, a strategy for implementing this policy, the national capacity to implement the strategy through sustainable and participatory methods, and the capacity for monitoring and evaluating progress (TFSMP2, 1993). Unfortunately, the TFSMP has not been implemented for several reasons, including the opposition of several parties, particularly some environmental NGOs. The Thai Forestry Master Plan, which is different from the TFSMP, was finally launched in 2003, in response to the Queen's comments and suggestions.

The logging ban was one of the most drastic forms of forest protection ever launched in Thailand, but it did not affect all logging in the country, as FIO is allowed to process logs from plantations and mangrove forests and confiscated logs. Following the logging ban, private reforestation, in addition to RFD (government) reforestation, has been encouraged, but the ban also officially ended the relationship between RFD and logging concessionaires, creating uncertainty in RFD's forest management scheme (IUCN, 1996).

Specific measures of the logging ban aim to protect remaining forests, enforce strict rules and punish forest encroachers. Although logging is perceived to have caused severe deforestation nationwide, when conducted carefully and in a technically appropriate manner it does not contribute significantly to large-scale deforestation (FAO, 1998). Logging did, however, lead illegal loggers or land-grabbers to continue into forest areas, destroying as they went, because prior to the ban forests were more accessible and vulnerable to clearance for agricultural expansion. The people and environmental groups involved stress that the main objectives of the logging ban are to protect and conserve the remaining natural forests, and to capacitate local people (stakeholders) to participate in forest management and conservation as a form of multi-party resource management. Integrated participatory development with proper conservation measures is desirable within the new framework.

Forest land encroachment continues, although at a far smaller scale. Figure 5 shows agricultural expansion (farmland), and some decrease in forest areas. In 2000, RFD claimed that agricultural areas were only 10 percent greater than forest areas, and that the increasing trend of forest resource destruction was continuing. However, the conflicting relationship between forestry and agriculture can be seen, and the possibility for convergence remains limited.

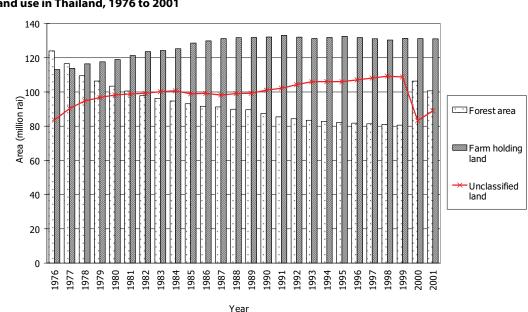
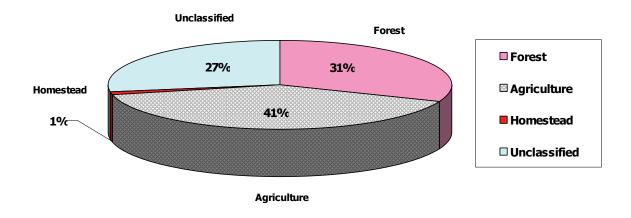


FIGURE 5 Land use in Thailand, 1976 to 2001

FIGURE 6

Ratios of land uses in Thailand, 2001



COMPARISON BETWEEN LAND TENURE AND FOREST RESOURCE TENURE

The conflicting relationship between forestry and agriculture in Thailand is understandable given the continuous population increase since the early 1970s. This section presents types of landholding that imply security of tenure (Figures 7 and 8) and analyses the comparison between land tenure and forest resource tenure for a better understanding of the relationship between the two systems.

Officially, there are three main types of landownership in Thailand: title deed (full ownership); NS3 (Nor Sor Sam); and NS3-K (Nor Sor Sam Ko). The security of land tenure ranges, in decreasing order, from the highest level of land title deed to NS3-K and NS3, respectively. In NS3-K and NS3 tenure, rights can be revoked if the land is idle for some time within the first ten years. However, NS3-K tenure is recorded as coordinates on a map, implying that this type of ownership cannot be revoked as easily as NS3 tenure, for which no coordinates are recorded. Figure 7 shows the number of plots under each type of landholding, and Figure 8 shows how total areas of landholding increased from 1987 to 2005. Title deeds increased greatly between 1992 and 2005 owing to a government project to accelerate land titling.



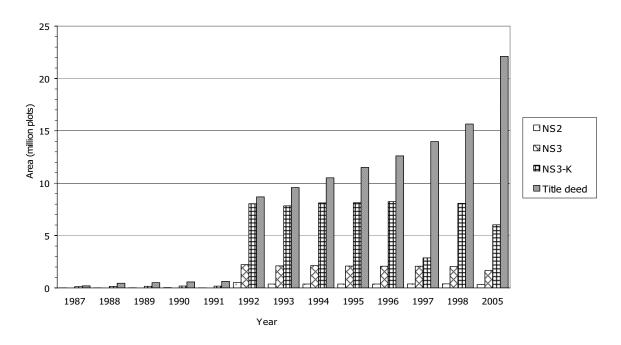
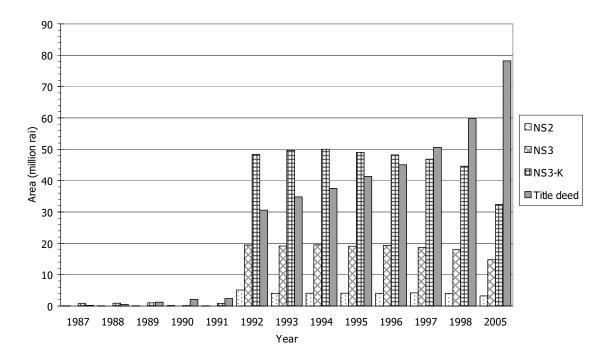


FIGURE 8 Areas of landholding in Thailand by type of landownership, 1987 to 2005



The forest tenure system remains similar to the original framework for State ownership of forest. The forest areas under the State's jurisdiction have been increased by annexing various forest resource types, as shown in the conservation of forest areas (Table 3). Forest resources and land areas are likely to remain under State ownership because there is no way of changing this at present.

When the Cabinet revoked all commercial concessions in January 1989, it did not announce its reasons for doing so, but these can be summarized as (TFSMP5, 1993; IUCN, 1996; Jantakad and Gilmour, 1999; Phonpanpua, 1999):

- protection and rehabilitation of natural forests;
- conversion of degraded forest land to sustainable and productive land uses;
- increased security of livelihoods for forest-dependent people;
- increased capacity to implement strategies through sustainable and participatory methods;
- conservation of soil, water and biodiversity.

The following are the major forest conservation activities that have been implemented since the logging ban:

- demarcation and declaration of conservation forest areas under such categories as national parks, forest parks, wildlife sanctuaries, no-hunting areas and forest reserve;
- strengthened enforcement of forest laws and regulations, including strict forest patrolling;
- relocation of the people residing inside forest reserves or conservation forests to buffer zones or designated areas;
- attempts to limit the upland or mountainous agriculture areas occupied by hill tribes or under shifting cultivation.

It has been difficult to relocate the people living inside conserved forests because of their concerns that relocation is likely to push them on to degraded or marginal land unsuitable for their farming livelihoods. Relocation projects that have not yet been found satisfactory for all involved parties include the Khor Jor Kor Project (the Project for Land Allotment to the Poor in the Degraded Forest Reserve) and some hill tribe relocation projects, such as those in the forest villages of the north and upper northeast. The Khor Jor Kor Project began in 1990, but the farmers affected protested so strongly that it was revoked in June 1992 (Phantasen, 1995).

Land titling is impossible in the forests of Thailand because all forest land is officially owned by the State. Although there have been a few programmes for granting forest land usufruct, the outcomes of most of these have been unsatisfactory. The clearest examples of this were in RFD's Sor Tor Kor (STK – national forest land allotment) Project, which resulted in farmers transferring usufruct rights to other people, even though such rights can only be transferred through inheritance within the farming family (Lakanavichian, 1995). The farmers usually claimed that they had not sold their usufruct rights but just allowed other people to use their STK lands. The project stopped granting follow-up STK2 certificates after the STK1 certificate programme was evaluated during its fifth year of implementation. (More details on this project are given in the following section.)

RFD, DNP, other environmental agencies, academics, NGOs, local people and other stakeholders must change their approach to natural resource management and conservation from a centralized to a decentralized and more participatory one, with more community-based responsibilities. The roles of agents with direct responsibility, such as RFD, must be more effectively defined to include proper partnerships and a greater focus on integrated approaches to forest resource conservation and development. The forest tenure system is likely to remain as it is, so stakeholders must direct their efforts to their roles and responsibilities.

TRENDS IN FOREST TENURE AND OWNERSHIP

Most of the 1.3 million households in the forests of Thailand are in conservation forests. Although the government agreed to decentralize its forestry functions and authority to regional and provincial offices outside Bangkok as part of the 2002 bureaucratic reform, the outcomes of this have not yet been satisfactory. Bureaucratic reform was stimulated by the 1997 Constitution, which was the first of its kind to be drafted by representatives of all types of people from all over the country. In order to conform to the conventions of good governance, the Government of Thailand has to become smaller and more effective. Its functions and decentralization in the area of forestry have yet to be analysed, but the clearest feature of the present situation is that State forest ownership has been strengthened, while forest-dependent people are pursuing their *de facto* rights in the forest through community forestry (CF) or community-based forest management.

Some forest-dependent people residing in national forest reserves were granted usufruct rights, such as those granted during the STK project. STK certificates granted villagers the right to use land and pass it on to their heirs, but not to sell it. The STK programme was implemented from 1982 to 1987 (the number of years varied from area to area according to the intensity of local forest land use), with funding from the World Bank. A total of 800 000 STK certificates were granted to more than 700 000 households, covering a total of 1.15 million ha, or approximately 2 percent of Thailand's total land area (Poffenberger, Soriaga and Walpole, 2005).

Unfortunately, a study by Lakanavichian (1995) found that many STK right holders were transferring their rights to others, even though they had no formal ownership documents. Most right holders are not satisfied with the tenure security of their STK, and would prefer title deeds. FIO granted a different type of usufruct right to forest villagers, which required the villagers to work with FIO, but the regulations and requirements governing these rights have been diluted since the first FIO usufruct rights were granted in 1971.

Villagers in both the uplands and the lowlands have continued to encroach into forests, and efforts to control shifting cultivation have been ineffective, owing to the expansion of upland hilltribal villages and increased population. The only obvious change is that shifting cultivation has been limited by forestry laws and regulations, and is now called rotational cultivation. In practice, however, forest villagers are forced to limit their rotations because they cannot find the additional land they require, despite the intense control of forestry officers. Lowland people have recently encroached into the forest reserves, other conservation forests and upland watersheds, for similar reasons of land pressure and scarcity. Conflicts are inevitably breaking out, particularly in the north and northeast.

There have been instances of organized groups of villagers moving in and living in prohibited forest reserves, such as occurred in the northeast at Phu Pan National Park, Sakol Nakorn province in March 2000 and at Dong Yai Forest Reserve, Kalasin province in late 1999. The first case was caused by RFD's unfulfilled promise of granting arable land to villagers. The villagers, who had joined the Communist Party of Thailand at the same time, moved out of the occupied forest to give way to the government, which later declared the forest the Phu Pan National Park. After 20 years, the villagers claimed that their livelihoods had suffered and that they had very few means of making a living as a result of their landlessness.

In the latter case, villagers in Kalasin province had also given way to the government for the creation of Dong Yai National Forest Reserve, in which they claimed their customary land rights. Later, the government granted the land to commercial plantations of *Eucalyptus* spp., causing resentment among the villagers, who decided to move back on to their own parcels of customary land, thereby coming into severe conflict with RFD. At present, RFD officers are attempting to move the villagers back off the forest land, but the results look like a game of hide and seek, with villagers putting up what Lakanavichian (1995) calls "manipulative resistance". The trend of conflicts between government officials and villagers has been stimulated and increased by opposing views and misconceptions on the part of RFD that villagers are incapable of managing forest land, and on the part of villagers that RFD officials are unreliable and ineffective.

At present, the government, through RFD, is focusing on forest rehabilitation with a particular emphasis on biodiversity conservation. It is important to point out that conservation without the sustainable management of ecosystems may be impossible. As already mentioned, the best approach, including for forest plantation schemes, is to involve local people, who are far more likely to participate if the responsible agents employ genuine participatory approaches. RFD, which is responsible for policy and practices in natural forests, needs to adopt a new role in emphasizing the active participation of different stakeholders in planning, implementation, monitoring and evaluation. It is also necessary to change land-use practices in degraded forests by introducing sustainable and productive land uses that incorporate responsible stakeholders, including local people, local organizations and RFD officials.

Thai people understand and are interested in various natural resources and environmental agendas in the Constitution of October 1997; this emphasizes the "rights of rural people in participating actively in the management and utilization of natural resources". Participation is seen as a major strategy for implementing policy and ensuring sustainability. Moreover, individuals and

NGOs have emphasized the need to change the attitudes and roles of RFD, DNP and local people regarding partnerships. Stakeholders must combine the management and conservation of forest resources for suitable planning and implementation.

Conservation was first launched in 1960, with establishment of the Khao Yai National Park. Since then, the protected area system (PAS) has continued to expand with the increase of conservation forests. At present, about 8.1 million ha (16 percent of the country's total land area) is included in PAS (Jantakad and Gilmour, 1999). DNP claims that it has already established PAS on more than the targeted 25 percent – in fact, on 27.5 percent (Phantasen, 1995) – of the total land area specified in the National Forestry Policy after the logging ban. However, as Table 4 shows, these DNP figures include recreation areas.

Category	1994		1997		2000		2003		2004	
	Units	ha	Uni ts	ha	Uni ts	ha	Uni ts	ha	Uni ts	ha
National park	79	4 021 615	82	4 233 226	102	5 222 610	103	5 278 220	103	5 278 220
Forest park	42	52 746	66	86 061	68	85 212	58	73 032	70	83 372
Wildlife sanctuary	37	2 888 639	44	3 201 189	53	3 484 880	55	3 574 899	55	3 574 899
No-hunting area	43	295 889	43	297 239	49	330 455	56	445 277	56	434 646
Botanical garden	13	2 051	15	5 649	15	5 896	16	6014	16	6 014
Arboretum	44	2 716	49	3 081	54	3 608	55	3 661	55	3 661

TABLE 4	
Natural conservation and recreation areas,	1994 to 2001

Sources: RFD, 1998; 2004.

The most recent information from RFD sources suggests that there are 30 national parks awaiting royal decrees to become effective (National Park Division 2005, personal communication), in addition to those in Table 4. The exact numbers and areas are, however, less important than the main point, which is that the significant increase in national conservation and recreation areas represents a strategic conservation improvement in the eyes of the RFD administration and personnel. State conservation forests can be seen as providing security of tenure for the government, particularly RFD and DNP.

However, substantial gaps in PAS coverage remain (Ingles, 1999, cited in Jantakad and Gilmour, 1999). Management of PAS and forest reserves is problematic, because groups of stakeholders, including forest-dependent people and illegal loggers, have encroached into the areas and continue their forest land-use practices inside the protected forest. As a consequence, many researchers and NGOs, and some policy-makers conclude that the participation of local people, forest-dependent dwellers and other involved agents is necessary for the effective conservation and sustainable management of forest resources, even though forest tenure and ownership remain with the government. In other words, the State owns all the forests and their resources.

Forest management and community forestry in Thailand: status, trends and institutional arrangements

FOREST MANAGEMENT: PAST, CURRENT AND FUTURE SITUATION AND TRENDS

Past and current situation

Since 1989, Thailand's forestry sector has been managed under the logging ban regime, which will continue as no revocation of the ban is foreseen for the near future. As already mentioned, the outcomes of the logging ban do not seem to have brought much change from the pre-ban situation, and the ban has become a symbolic strong wall without solid internal structure. Some people even claim that "the logging ban should remain if the forest is just to be destroyed" (TFSMP2, 1993). The forest has indeed deteriorated, despite the ban, and now neighbouring countries are blaming Thailand for their own forest destruction. Legislation has not been sufficiently adjusted to take full account of the logging ban, and the only clear changes in legislation were the demarcation of an increased PAS and the strengthening of law enforcement.

The timing of the ban also had both positive and negative impacts on Thailand's forestry sector and on forests as a whole. As discussed in the previous chapter, the catalyst for and timing of the logging ban were so clearly politically motivated that very few of the parties concerned were given incentives or powers. At the time, the environmental movement in Thailand was relatively strong and played a significant role in political policy, so it was inevitable that some of the people involved and some of the international community were shocked by, rather than appreciating, the imposition. However, the beneficiaries of logging concessions and wood industrialists were forced to accept the ban and to rearrange their activities outside Thailand. Many of them continued to exploit forest resources, conducting both legal and illegal operations at the same time.

The themes of sustainable management and the decentralization of authority over natural resources have been discussed among academics and NGOs in Thailand since the 1980s; theories have yet to be put into practice however. The only clear sign of natural resource decentralization is the transfer of authority to local governments, through Tambon Administrative Organizations (TAOs), with elected representatives from each village. The Tambon is the sub-district level that is hierarchically below the district level, and TAOs administer independently under the Tambon Administrative Act of 1994. TAO members have recently learned their responsibilities towards natural resources and the environment through the Local Organization Decentralization Act of 1999.

It is generally accepted that the causes of deforestation and forest degradation in Thailand are diverse (Kashio, 1995b; Jantakad and Gilmour, 1999) and include:

- agricultural expansion for both permanent and shifting cultivation;
- farmers' need to improve productivity for better economic conditions, leading to the expansion of agricultural land;
- rural poverty, including that of disadvantaged and landless people;
- population growth and migration, resulting in increased population in forest areas;
- poorly planned and managed activities of both legal and illegal logging operations;
- poor coordination of policy planning and implementation among the government agencies involved in forest resource management and conservation, and weak institutional capacity for these activities;

• infrastructure development and improved access to frontier areas, particularly in terms of roads, dams and mining.

Two other driving forces have also stimulated forest destruction in Thailand: political instability and/or lack of political will; and lack of adequate training and research for strengthening the capacity to mitigate problems. In recent years, as in many other countries, Thailand has established a national programme for natural resource conservation and plantations, in the hope that natural ecosystems can be restored and resources will once more become abundant. However, many forest ecologists say that harvested tropical rain forests take at least 100 years to return to their original stocking levels and species composition (Kashio, 1995b). For this scenario to work, annual timber harvests should not exceed 1 percent of total forest land.

At present, RFD is encouraging large- and medium-scale private plantations, along with strict protection of the remaining forests. RFD has recognized the importance of people's participation and cooperation since the mid-1980s, but its rigid technocratic and top-down bureaucratic structure makes it difficult to implement participatory projects that involve local people in the collaborative management of forest resources and the environment. As long as RFD's top-down attitudes and poor support for staff continue, the concept of sustainable forest management (SFM) will remain an empty promise. In the meantime, policies for participatory forest management and the joint management of natural resources are incoherent; understanding and trust are necessary before any real collaboration among involved parties is possible, and SFM needs to be planned and worked towards.

The following are complementary policies and incentives that would help SFM to become fully effective:

- RFD's roles and attitudes need to be substantially changed, and its organization requires restructuring with a view to the future. RFD was established in 1896, so it is not surprising that changes need to be made.
- Institutional capacity is needed. Involved agencies should capacitate institutions, make partnerships and carry out activities with all the parties involved. It is also necessary to establish transparency and accountability in forest management.
- Security of land tenure and access to resources for local people would help discourage forest encroachment, but forest tenure under RTG is still rigid at present.
- Local people's rights to use and manage their community forests must be approved. (The Community Forestry Act has been waiting for approval since 1992.)
- There is need to develop local institutions and to recognize local communities' traditional rules and regulations. These can help the planning and implementation of natural resource management at the local level through TAOs.
- Cooperation and coordination should be built up among the agencies involved in policy planning, the implementation of natural resource management, and monitoring and evaluation.
- It is important to gain the collaboration of key stakeholders who can help resolve conflicts over land uses and overlapping land areas between local people and RFD/DNP. During such conflict resolution, it is necessary to establish the agreement of both parties regarding the identification of boundaries and the demarcation of land.
- Inappropriate or obsolete legislation/regulations need to be replaced. The political will to do this is needed.
- Government officials must employ socially acceptable methods (based on equality, not superiority) when working with local people and other parties.
- It is essential that all stakeholders be involved in the participatory planning of decentralization schemes.

Implications of forest plantations and new alternatives

Large-scale plantation projects have adopted various approaches, one of the most frequent of which was that used in the Forest Plantation Project to Commemorate the Jubilee of the King's Reign, which invited all Thai and non-Thai residents to plant trees; all types of donation were welcome. The project was planned for 1994 to 1996, but RFD requested the government for an extension to 2002, because the project's goal of 5 million rai (800 000 ha) planted had not yet been met. In 1997, of the 2.73 million rai (436 800 ha) reserved for plantations, only 1.03 million rai (164 800 ha) – or 37.73 percent – had been completed (Green World Foundation, 1999). The 5 million rai target was divided into two categories: 3 million rai were to be planted by the private sector, and 2 million rai by government agencies. Table 5 shows the total areas reforested between 1906 and 2004. Table 6 shows the areas reforested between 1994 and 2004; the grand total reforested over the ten-year period was 709 177.95 ha.

TABLE 5

Period	Number of years	Area (rai)	Area (ha)
1906–1960	54	50 984	8 157.44
1961–1966	5	142 500	22 800.00
1966–1971	5	171 820	27 491.20
1972–1976	4	294 861	47 177.76
1977–1981	4	1 357 615	217 218.40
1981–1986	5	1 901 180	304 188.80
1987–1991	4	764 750	122 360.00
1992–1996	4	943 750	151 000.00
1997–2002	5	996 837.50	159 494.00
2003-2004	1	163 268.75	26 123.00
Total		6 787 566.25	1 086 010.60

Reforestation by the government and the private sector, 190	5 to 2004
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Sources: Green World Foundation, 1999; RFD, 2004.

TABLE 6

Reforestation by RFD, FIO and the private sector, 1994 to 2004

Year	RFD (ha)	FIO (ha)	Private sector (ha)
1994	48 829.41		62 778.20
1995	114 280.84		51 823.20
1996	93 167.76		18 622.84
1997	28 298.88		16 629.44
1998	22 269.42		4 446.92
1999	27 179.82		4 322.48
2000	21 355.76		6 633.44
2001	23 563.60		-
2002	27 334.88		3 448.8
2003	1 760	132 736.26*	-
2004	1 280		-
Total	407 736.37	132 736.26	168 705.32

Source: RFD, 2004.

Tables 5 and 6 indicate that the forest plantation policy has been of little use to the forestry sector; if this slow reforestation rate continues, Thailand may have to import logs and sawnwood indefinitely. The total reforested area of 1.07 million ha between 1906 and 2004 is clearly insignificant compared with the total deforested area of 10.76 million ha between 1961 and 2004. The reforested areas since 1994 shown in Table 6 account for 65.3 percent of the total reforestations since 1906, implying that the other nearly 90 years of reforestation achieved only 34.7 percent of the

total. The years 1994 and 1995 were very productive for private plantations, accounting for 67.9 percent of the total for this category. Forest degradation and deforestation seem likely to continue at rates of about 2 to 2.6 percent a year (FAO, 1999).

Discussion of the failure of reforestation and the inability to combat deforestation in Thailand has become increasingly critical. The government, via RFD and DNP, adheres to its original concepts of reforestation, as outlined in the Forest Plantation Act and DNP's establishment of PAS. For example, in February 2000, the government approved plans for a 750 000-rai plantation (120 000 ha) in degraded forest in Tha Takiab and Sanam Chai Khet districts of Chachoengsao province, to be managed by a large company, Kaset Rungruang. The plantation was to be divided, with 250 000 rai being planted by the company itself, and the remaining 500 000 rai by farmers as contract tree farming (*The Nation*, 2000). This was to be a joint project between China and Thailand, aimed at producing wood products for a new pulp factory to be established in Thailand.

However, the main species in the plantation was to be *Eucalyptus* spp., which was widely criticized by local farmers, who call it the "evil tree"; "it depleted the water in the only canal that passes through my farm", according to one. If the plan was implemented, local villagers thought that conflict would be inevitable, owing mainly to land conflicts and their hatred of Eucalyptus trees. Land conflict would break out because the villagers have occupied the land for more than two decades and some even reside illegally in the area. The RFD Director General supported the project and stressed that, "it will finally enable the government to get the land back from the villagers, and the plantations will also raise forest cover". Local authorities, including forestry and military officials working with the villagers, stressed that a number of villagers would reject the plan.

As shown in Table 1, the remnants of forest in Thailand are about a third or less of the total land area, and must be preserved as specified in the Royal Decree regarding the revocation of all commercial timber concessions in natural forests. After more than a decade of the logging ban, it seems that the economy has suffered as much as the environment from illegal forest extraction in Thailand and its neighbours. Deforestation continues in Thailand, and is increasing in neighbouring countries, particularly Cambodia, Myanmar and Lao People's Democratic Republic. The demand for wood products continues to rise, while the supply declines.

The economic effects of the logging ban can be seen by comparing projected figures of future consumption with the quantities that were subsequently required. For example, in 1972, the projected demands for sawn and veneer logs were 24 million m³ for 1980, and 33 million m³ for 2000 (de Backer and Openshaw, 1972), but actual consumption in 1998 was only 1.18 million m³ according to RFD's most current data. This implies that the forest industries were far less active than had been expected in 1972, and a likely reason for this is the 1989 logging ban.

In the meantime, the remaining forest industries rely heavily on FIO's legal and confiscated timber. FIO has been permitted to maintain and utilize its own plantations, concessionaires' plantations and confiscated logs from illegal practices outside the conservation areas. The owners of wood industries are uncertain about the government's policy, even though the reforestation policy clearly implies that many more plantations must be established for conservation purposes. Private plantations of fast-growing species, such as *Eucalyptus* spp., *Acacia* spp. and *Cassia* spp., can produce wood for the general market, but reserve species, such as teak and dipterocarp, require specific RFD approval. RFD must assess whether or not this plan can be sustainable in the future, and adjust it as necessary.

To compensate for the commercial logging ban, the government reduced log import tariffs and opened all borders to timber imports (Pragtong and Thomas, 1990). Lao People's Democratic Republic has responded to this by imposing very high taxes on log exports, and introducing plans to improve its forest management capability, including inviting Thailand's wood industry to invest in wood processing facilities for exports to Thailand. The government of Myanmar has increased its conflict with ethnic minority rebels over timber export routes in forest areas near the Thai border, but the minorities continue to export sawlogs and sawntimber to Thailand, both legally and illegally. The World Wide Fund for Nature (WWF) estimates that nearly all exports from India, Lao People's Democratic Republic, Cambodia, Thailand and the Philippines are illegal, and a third of those from Malaysia may also be illegal (WWF, 1996).

Irrefutable evidence of an illegal timber trade was discovered along the border between Thailand and Cambodia, even though this border was officially closed in late 1994, following the murder of 22 Thai timber workers in November of that year (Global Witness, 1995). Cambodia's Secretary of

State for the Environment, during an interview on 6 March 1995, claimed that as many as 300 log trucks a day were still crossing the border. Global Witness (1995) pointed out that this may have been a serious underestimation of the scale of illegal trade, because 100 trucks a day were crossing the border to supply the Suan Pha timber concession in Thailand's Trad province alone. As long as the Thai logging business continues to operate in neighbouring countries, deforestation is worsening in Thailand and its neighbours.

In 1996, Global Witness claimed that Cambodia was Thailand's main source of timber imports; for instance, up to 750 000 m³ of illegal timber a year was entering the Thai harbour of Kalapangha, Trad province, while the governments of both Thailand and Cambodia were doing nothing to stop it, in spite of the timber export ban that the Government of Cambodia imposed on 31 December 1996 (Global Witness, 1997). In addition, nine Thai logging companies operating along the border with Cambodia were illegally importing more than 120 000 m³ of illegally felled timber (Global Witness, 1997). The best response to this situation would be for the Government of Thailand to do all it can to prevent illegal logging in Cambodia and other war-wrecked neighbours, thereby showing that Thailand takes a responsible attitude to its own SFM scheme without overexploiting its neighbours' forests.

COMMUNITY FOREST MANAGEMENT: DE FACTORIGHTS AND LIVELIHOODS

The CF concept was introduced to Thailand in the mid-1970s, and is based on the belief that State control over forest management is too bureaucratic and centralized. Centralization contributes to deforestation through inefficient natural resource management as a result of complex and time-consuming bureaucratic controls, together with inflexible top-down rules and regulations that lack adequate feedback from the bottom, or local level. CF has existed throughout the history of village settlement in Thailand, but it was not called CF. New settlers in or near the forest normally agreed to set aside some existing forest or grazing land for communal use. Although CF has taken many forms and served various functions in Thailand, the Community Forestry Act of 1992 has been under development for more than a decade and has still to be finalized. RFD's first draft of the act was limited to addressing the communities' role in fast-growing tree plantations (Poffenberger, Soriaga and Walpole, 2005). Villagers, NGOs and academics began informal discussions of the issues relating to CF policy, legislation and implementation in 1990.

A CF Division was created in 1986 under the Office of Reforestation within RFD, with the aim of developing new participatory programmes. At the same time, increasing numbers of NGOs and academics in Thailand were developing expertise in CF programmes, implementation and strategies, and some worked closely with the CF Division. Unfortunately, Thailand continues to lack comprehensive legislation dealing with the forest resource rights and responsibilities of forest-dependent populations, many of whom are ethnic minorities. Nationwide, at least four major types of CF can be identified: (1) newly organized community protected forests, which have emerged as a response to illegal logging; (2) monastery (*wat*) forests, which are restricted areas where plants and animals are protected; (3) wetland forests, which communities protect to ensure that there is a breeding ground for fish, frogs and crabs, and a source of bamboo, timber and fuelwood; and (4) cultural forests, which have economic, historical or religious significance (Poffenberger, Soriaga and Walpole, 2005). Figures 9 and 10 show the areas of CF projects already approved by RFD. The areas of community forests managed by local communities are shown in Figure 9. More details are provided in Annex Tables A3 and A4.

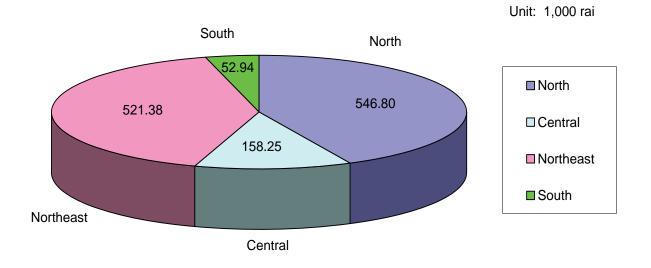
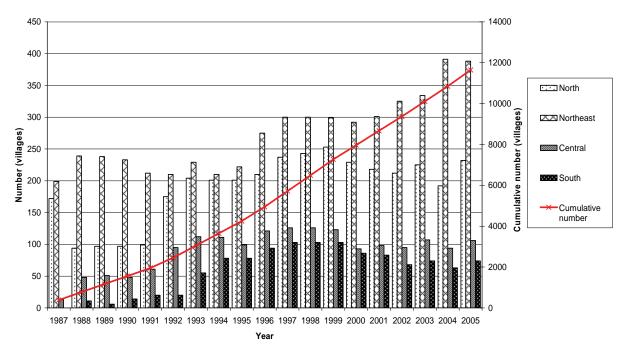


FIGURE 9 Areas of CF projects approved by RFD by region, 2000 to 2005

FIGURE 10 Numbers of community forests by region, 1987 to 2005



The positive impacts of forestry policies are reflected in the increased numbers and areas of CF andPAS, including national parks, forest parks and wildlife sanctuaries, as shown in Figure 10. However, the cost–impact ratio and effectiveness of these conservation areas cannot be analysed because the monetary and non-monetary values of the conservation practices used have not been evaluated. People in Thailand recognize that conservation practices are good for the country, but conservation should not affect the livelihoods of forest-dependent people. In cases where forest-dependent villagers have to move out of their villages in demarcated forest land for conservation purposes their livelihoods are likely to be jeopardized and marginalized. The balance between excluding and including local people in forest areas must be carefully calculated, so that CF projects can be implemented effectively, whether they have been formalized or not. Throughout Thailand,

there are an estimated 7 million ha of degraded State forest land, much of which is inhabited. If a truly enabling Community Forestry Act is approved by the Thai legislature, it is likely that CF will rapidly be integrated as a major component of the forestry sector (Poffenberger, Soriaga and Walpole, 2005).

The current forest conservation policy aims to protect the remaining forests, establish as many human-made forests as possible, and focus on natural regeneration. Enhanced conservation of national parks and wildlife sanctuaries is necessary. Based on World Bank (1998) recommendations, key measures to be taken include: more effective enforcement of the logging ban through enhanced policing capabilities (surveillance, log monitoring and trade control technologies), more effective prosecution and tougher penalties; increased and more frequent monitoring of changes in forest cover, using satellite images and ground verification; increased staff capacity; effective demarcation of protected areas, in consultation with local communities; participatory management planning for protected areas and buffer zones; involvement of local communities and NGOs in the implementation of management plans; and full financing of recurrent management costs through increased user and service fees, as well as concession fees when applicable.

Watershed conservation has been a major issue in the north of Thailand. Watershed areas in mountainous regions are Thailand's only source of headwaters. The causes of watershed degradation are similar to those of deforestation. The logging ban in natural forest should have yielded positive outcomes for watersheds, but pressure and conflict between the uplands and lowlands and between the government and forest encroachers have emerged, and national policies have been irregularly implemented in some areas, resulting in increased destruction of watershed areas. Watershed areas are categorized into five classes (Box 1), with class 1 (both 1A and 1B) considered as prioritized conservation forest. This category is so significant for conservation that upper class 1 watersheds on slopes of more than 35 percent cannot be utilized in any way, and no humans are allowed to reside in these areas.

BOX 1

Watershed classes (WSCs)

WSC1: Protected or conservation forest and headwater sources. This class is divided into two subclasses:

- WSC1A: *Watershed protection forest:* protected forest areas, including the headwaters of rivers, usually at high elevations and on very steep slopes. Should remain as permanent forest cover.
- WSC1B: *Disturbed WSC1*: areas with similar physical and environmental features to class 1A, but with portions cleared for agriculture, which requires special soil conservation measures. Where possible, these areas should be replanted as forest or maintained as permanent agroforestry.

WSC2: *Commercial forest:* for protection and/or commercial forest, with mining and logging allowed within legal boundaries, usually at high elevations with steep to very steep slopes. May be used for grazing or crop production, with soil conservation measures.

WSC3: *Fruit tree plantations*: uplands with steep slopes and less erosive land forms. May be used for commercial forests, grazing, fruit trees or certain agricultural crops, with soil conservation measures.

WSC4: *Upland farming:* areas with gentle sloping land suitable for row crops, fruit trees and grazing, with moderate need of soil conservation measures.

WSC5: *Lowland farming:* gentle slopes or flat areas needed for paddy fields or other agricultural uses, with few restrictions.

Over the past 25 years, many hill tribal people have migrated into the uplands, highlands and mountainous areas in the north, stirring up much conflict. Many hill tribes claim to have been in upland areas for as long as 80 to 100 years, and some tribes have been present in Thailand for more

than 100 years. The total population of hill tribes was 991 122 in 1998, according to the Public Welfare Department (cited in Phonpanpua, 1999), but researchers and demographers find it very difficult to estimate hill tribe populations owing to the dynamic in- and out-migration along the borders with Lao People's Democratic Republic and Myanmar.

Hill tribal people are often blamed for destroying watershed forests for shifting or swidden agriculture, and debates on this issue have been ongoing for the past 40 years. However, shifting cultivation practices have been reduced or stabilized because shifting cultivation in protected watershed areas is illegal, there is limited available land for cultivation in mountainous regions, the population is too large for the arable land, and the government has been seeking alternative livelihoods for the people affected. An analysis by Lakanavichian and Van Cappellen (1989) indicates that shifting cultivation is neither critical nor unbalanced when there is unlimited arable land and a small population. As this is not the case in the highland watersheds, shifting cultivation has naturally declined and become less productive. The next challenge is to make the shifting cultivation system sustainable and viable for farmers, without destroying the environment. Many studies and attempts to do this are under way, and shifting cultivators are under pressure to adopt rotational cultivation.

Options for the way forward

CONTRIBUTION OF TENURE ARRANGEMENTS TO SFM AND POVERTY ALLEVIATION

The impacts of forestry policies in Thailand, particularly under the logging ban regime, are interrelated. The worst impacts have probably been those affecting the environment, followed by economic and social impacts. The minimal preparation prior to launching the logging ban created difficulties and even hardship in balancing wood production and consumption while conserving forests. It is clear that Thailand has been unable tackle the problems of unbalanced imports and exports of timber and wood products. The Thai forestry and forest product industries have lost much income, causing some of the parties concerned to overexploit neighbouring countries, leading to increased deforestation in those countries. The government encouraged log concessionaires to move their operations to neighbouring countries after the declaration of the logging ban, but this has resulted in damaged forests all over the region.

The logging ban led the government to reverse its target areas for forests, to 25 percent conservation forest and 15 percent economic or production forest. The latter should be managed under CF, with the full participation of local people and communities.

One of the most important lessons learned relates to the need for legislative and technical preparation and suitable planning. Any country aiming to impose a logging ban should study past experiences, and set up the process carefully and gradually, paying close attention to the likely environmental and socio-economic impacts and their affects on forest-dependent livelihoods.

Specific tenure arrangements between RFD and villagers for the collaborative management of community forests and reforested areas must be put in place. Forest management activities are unlikely to proceed well under the current ownership regime for State forest. During the wait for enactment of the Community Forestry Act, RFD should provide security for informal or *de facto* community-based forest management so that forest-dependent people can implement programmes productively. SFM may be attainable.

RECOMMENDATIONS FOR THE WAY FORWARD

Community forest management should be considered as a way of promoting SFM and poverty alleviation. If community forests are to be conserved and managed properly, the Community Forestry Act should include two important clauses: allowing communities to use forests sustainably; and acknowledging the rules and regulations framed by officially recognized committees with local participation. Stakeholders can finalize the forest resource tenure system in relation to CF roles and responsibilities when the Community Forestry Act is enacted. Forest-dependent villagers should be able to continue their management and utilization of community forests without impeding the claims and rights of communities.

Conservation policies should be adjusted in order to take community participation and benefits into account. Many researchers and RFD and FIO officials suggest that Thailand should produce its own timber and wood products, while protecting its forest and the environment. This is possible only if forest-dependent people – be they forest dwellers, illegal loggers or city dwellers – are involved. Responsible agencies, including RFD and DNP, must alter their personnel's attitudes and behaviour so that they start progressively to work more with local people. Many local communities in Thailand have demonstrated that they can protect and manage community forests effectively.

The following two suggested policy options provide ways of setting up SFM and forest conservation, while helping the rural poor by reducing poverty. Both options aim to change the view that natural forests and government plantations should be free from logging. (Although private owners of plantations can operate logging under the 1992 Plantation Act, State forest plantations are preserved as a type of conservation forest.) The participatory approach is at the centre of both options.

Option 1: Community forest management with timber production

Community forest management, incorporating small- and medium-scale plantations (private or communal) for commercial production, with technical assistance from RFD. This option integrates all of the biophysical and socio-economic factors, leading to closer cooperation between the State and the people. TAOs, local groups and local people should be at the centre of plantation operations on available land, which can be either State degraded forest land or the community's own communal/public land.

The government must adjust the rental procedures for State forest land so that small farmers and communities can be involved.

A CF committee/working group should be elected to work on sustainable timber production in the community, incorporating the social and environmental services that lead to SFM.

Favourable land taxes or incentives are needed to promote reforestation, conservation and intensive land uses, which must be sustainable. One such incentive could be no, or very low, royalty fees for logging.

Training on nursery techniques, plantation maintenance and harvesting is necessary. RFD must simplify the bureaucratic procedures and regulations for logging.

TAOs and RFD must operate the market system transparently and accountably, and ensure the equitable sharing of costs and benefits.

Trees should be integrated into farming systems throughout the country so that agroforestry can contribute to economic and environmental goods and services in the same way as communal or private plantations.

Option 2: Collaborative forest rehabilitation

Collaborative forest rehabilitation implemented by government agencies and incorporating local people in degraded forest areas. Partnership with local communities should be set up, focusing on SFM with sustainable flows of wood outputs.

The forest rehabilitation programme needs to establish clear procedures for the sharing of costs and benefits among partners.

The programme for this should be set up in the most practical and transparent way possible. RFD and other forestry units should establish effective laws and legislation controlling wood production and consumption, while local partners should formulate the process on the ground.

Native species should be used for forest rehabilitation. This ensures high survival rates and convenient maintenance for local people. Co-managed nurseries could produce seedlings for plantations.

Timber production should be based on subsistence, with any extra production being available for income, if the capacity allows.

The government should shorten the bureaucratic procedures for logging; logging legislation needs an effective and convenient legal framework. The Forest Act of 1941, which oversees logging operations, needs a thorough overhaul (the current government has called for all legislation to be updated).

The government needs to provide incentives, such as low rents for degraded State forest land in small farmers' forest rehabilitation programmes, exemption from royalty fees for timber harvesting and low land taxes.

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ANNEX

			5		., .,			•	/				
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	2005
Title deed	0.20	0.45	0.50	0.57	0.63	8.70	9.59	10.51	11.50	12.61	13.99	15.65	22.11
NS3-K	0.13	0.15	0.16	0.18	0.18	8.05	7.84	8.12	8.14	8.24	2.86	8.07	6.03
NS3	0.00	0.00	0.00	0.00	0.00	2.22	2.11	2.13	2.10	2.08	2.08	2.04	1.66
NS2	0.01	0.01	0.01	0.03	0.01	0.51	0.37	0.37	0.37	0.38	0.38	0.39	0.33

TABLE A1 Numbers of landholdings in Thailand by type, 1987 to 2005 (in millions)

Sources: Department of Land, annual reports for 1987 to 1998. Available at: www.dol.go.th/doc/planning/land_doc2.htm.

TABLE A2 Areas of landholdings in Thailand by type, 1987 to 2005 (in million rai)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	2005
Title deed	0.24	0.51	1.24	2.13	2.41	30.60	34.81	37.54	41.34	45.06	50.61	59.78	78.20
NS3-K	0.82	0.93	1.05	0.14	0.84	48.37	49.69	50.02	48.99	48.22	46.86	44.60	32.42
NS3	0.00	0.00	0.00	0.00	0.00	19.47	19.15	19.55	19.08	19.31	18.68	17.98	14.79
NS2	0.12	0.11	0.11	0.16	0.11	5.14	4.07	4.12	4.12	4.08	4.19	4.05	3.25

Sources: Department of Land, annual reports for 1987 to 1998. Available at: www.dol.go.th/doc/planning/land_doc2.htm.

TABLE A3	
Numbers of community forests in Thailand by region, 1987 to 200	05

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
North	172	94	97	97	99	175	204	201	201	210	237	243	253	229	218	212	225	192	232	3 591
Northeast	199	239	238	233	212	210	229	210	222	275	300	300	299	292	301	325	334	391	388	5 197
Central	13	48	51	48	61	95	112	111	99	121	126	126	123	93	98	95	107	94	106	1 727
South	0	11	6	14	20	20	55	78	78	94	103	103	103	86	83	68	74	63	74	1 133
Total	384	392	392	392	392	500	600	600	600	700	766	772	778	700	700	700	740	740	800	11 648

Sources: Extension programmes

TABLE A4Numbers and areas of authorized community forest projects by region, 2000 to 2005

Region	Villages	Projects	Area (ha)
North	1 492	1 405	87 488
Central	747	665	25 320
Northeast	2 690	2 317	83 420.8
South	512	506	8 470.4
Total	5 441	4 893	204 699.2

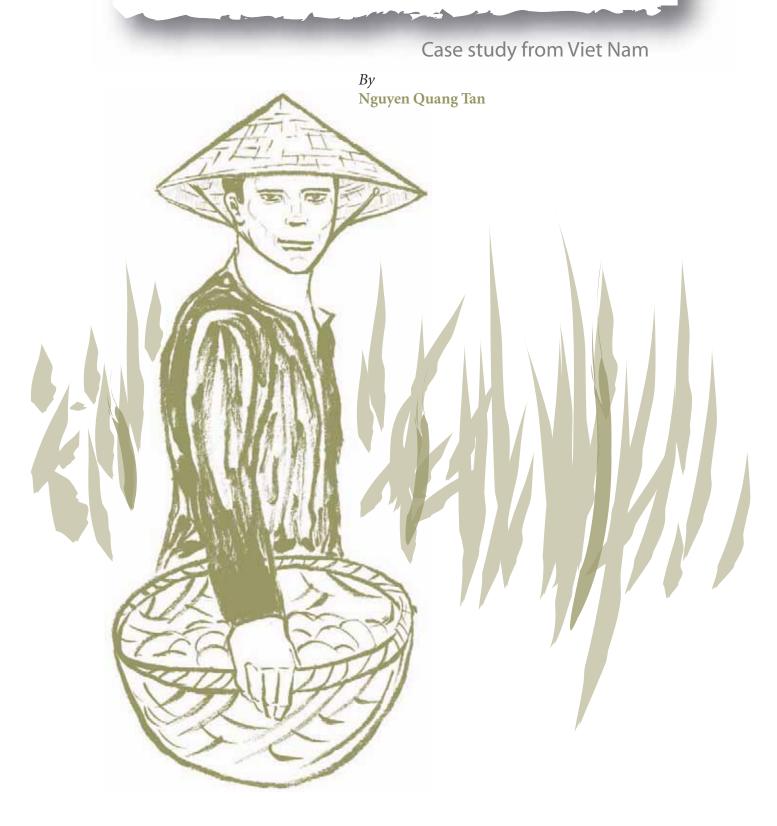
TABLE A5

Numbers and areas of forest conservation and reserve areas, 2004

Conservation type	Number	Area (million ha)
1) Conserved areas under laws and cabinet resolutions		
□ National parks	103	5.28
□ Wildlife sanctuaries	55	3.57
Forest parks	70	0.083
□ No-hunting areas	56	0.43
□ Watersheds class 1	25	9.32
Mangrove conserved forests	-	0.04
Subtotal		18.72
2) Other conservation areas	1 221	23.04
Total		41.76

Sources: RFD, 1998; 2004; Green World Foundation, 1999.

Trends in forest ownership, forest resources tenure and institutional arrangements: are they contributing to better forest management and poverty reduction?



Summary

Viet Nam is a tropical country located in the Indochina peninsula of Southeast Asia. At present, 57.6 percent of the country's land is classified as forest land, but forest cover is only 36.7 percent. Forested land in Viet Nam includes natural and plantation forests, and is categorized into production forests, protection forests and special-use forests.

Forest tenure and changing trends

The last two decades have seen radical changes in Viet Nam's forest sector towards the inclusion of various forest tenure arrangements. Until the end of the 1980s, State management was generally the only form of forest tenure. The decline of forest resources and the inefficiency of the State forest enterprise system for forest management led to changes in the role of State forest enterprises (SFEs). In addition, recognition of the role of local people in forest management and successful reform of the agriculture sector contributed to the introduction of private management as a new forest tenure arrangement. Since the early 1990s, local people have been able to participate in forest management through protection contracts. People can also have long-term land-use title and become the real owners of bare land classified as forest land.

Since the late 1990s, changing trends in forest policies in countries around the world, and donors' and practitioners' advocacy of participatory forest management have led to changes in forest policies in Viet Nam. The management of forest as private property has been increasingly recognized, with individual households being given forested land (including natural forest) and forest land-use titles in several parts of the country. Communal management of forest has also been recognized as a forest management arrangement.

At present, the following four major forest tenure arrangements can be found in Viet Nam:

- *Private property:* This is the most common forest management arrangement in Viet Nam. It includes forest management by individual households and by State and joint venture enterprises. Under this arrangement, forest is allocated to its owner for long-term management (50 years). Most forest owners under this arrangement are entitled to a legal land-use certificate.
- State property: Forests under the State property arrangement are managed by people's committees at different levels, army units and forest management boards. Under this arrangement, forest is allocated to a State body for an unspecified period. Where the forest falls into the special-use or protection category, its owners are entitled to receive State budget for its management.
- Common property: The common property arrangement is found in forest managed by collectives that
 are legally recognized by the State. Forest under this arrangement is allocated to a group of individuals,
 each of whom has similar rights and responsibilities. Owner groups are also entitled to land-use title for
 the area of forest they are allocated. At present, only a small area of forest is under the common
 property arrangement, but the potential for the future is promising.
- Forest contracting: This management arrangement is formed when an owner of forest (under State property) signs a contract with an organization, household, group of households or village to protect the forest. Under this arrangement, rights of ownership of the forest under contract remain with the contractor, and the contractee has only the rights specified in the contract. The contractee is entitled to a cash remuneration for protecting the contracted forest area. Contracts are usually for one year and renewable based on the satisfactory performance of the contractee.

It is important to note that there are overlapping forest tenure arrangements in practice. A forest area may formally be under the State management arrangement, but common property in practice. One of the main causes of such inconsistencies is a lack of attention to local traditions and the legitimate interests of different stakeholders, particularly those in weak and poor groups, in the implementation of forest policies at the local level. Another contributing problem is the inadequacy or total absence of monitoring mechanisms for the implementation of policy.

Regarding the relationship between sustainable forest management and the improvement of local livelihoods and poverty alleviation, experiences in Viet Nam show that people's management of forest resources appears to be more effective than forest management by other owners. Despite radical changes, forest policies in Viet Nam are still strongly protection-oriented, and forest protection and development remain major targets for the forest sector. Organizations managing forest as State property are called on to conserve the forest resources under their responsibility, because most of the forest areas under State management are protection and special-use forests. Livelihood improvement is recognized as a condition for the sustainable management of such forests, but only as a measure for forest protection. Organizations that own forest as private property are also held responsible for the forest that they have been given.

Although some forest enterprises seek to improve local people's income generation and livelihood options, most contribute very little to poverty reduction. When local people are the owners of private property forest, forest management often contributes more to livelihood improvement and – to a certain extent – poverty alleviation than it does under organizational owners. Forest can also contribute to poverty alleviation when it is managed as common property. In all cases, however, people's forest management can only contribute to poverty alleviation when certain other factors are present. For example, there is a need to improve poor people's access to the benefits of forest management, otherwise livelihood improvements may end up benefiting only the better off, thereby widening the economic gap between rich and poor.

Forest planning and monitoring

At present, there are no specific planning and monitoring systems for the different forest management arrangements in Viet Nam. Instead, the current systems of forest planning and monitoring apply to all types of forest tenure. The ultimate responsibility for forest planning and monitoring of changes in forest conditions lies with the Ministry of Agriculture and Rural Development (MARD), which assigns the tasks of forest planning to the Forest Inventory and Planning Institute (FIPI) and of forest monitoring to the Forest Protection Department (FPD).

FIPI works with provincial authorities to prepare provincial forest plans. By law, forest planning has to be based on existing land-use, forest protection and development plans, the local socio-economic conditions, and local people's demand for and capability in forest protection, use and plantation. Forest planning also has to follow the cycle for socio-economic development planning. However, at present, about 10 percent of special-use forest and all protection forest has no forest management plan. In addition, the approach followed is rather topdown, and forest planning involves little or no involvement of local forest users/owners. Most forest planning in Viet Nam concentrates on the forest itself; improvement of forest people's livelihoods is only a secondary result.

The current forest monitoring system is a recent development, which started on a trial scale in 2000 and has been functioning throughout the country since 2002. In this system, all forest owners are required by law to report changes in forest conditions to the forest protection staff/office. The changes are recorded at the commune, district and provincial levels. The system requires the cooperation of all forest owners, many of whom are reluctant to report areas of forest lost for fear of losing their budgets for protection, or even their forest titles. In addition, budget for forest monitoring has not been approved in some provinces.

A major issue with the current system is the lack of coordination between forest planning and forest monitoring in Viet Nam. At present, the two systems exist independently of each other and there is little, if any, data and experience exchange between FIPI and FPD. This creates some overlapping in work and incurs extra costs, which could be saved through better coordination. In addition, the outputs from the two systems may be inconsistent and confusing to users.

Recommendations

Given the changing trends in forest management in Viet Nam over the last two decades and based on a comparative analysis of forest management under different tenure arrangements and by different owner groups, it is proposed that forest management in Viet Nam in the future move towards greater involvement of local people, particularly local indigenous communities, in managing forest resources. To facilitate the changing trends in forest management and to improve the contribution of forest management to poverty alleviation the following recommendations are made:

- There should be a better balance of policy interests between protection and livelihoods (poverty
 alleviation) in the management of protection and special-use forests. In forest areas where strict
 protection is needed for conservation and environmental purposes, alternatives should be offered to
 local people to make up for their loss of the forest resources on which their livelihoods depend.
- In production forests or protection forests where strict protection is not required, initiatives should be taken to involve more local people in managing and benefiting from the forest. Forest management should be devolved, and local people be given tenure rights to forest resources. Forest devolution should be demand-oriented to avoid imposition from outside the village.
- State assistance is required to strengthen communities' capacity to realize their rights. This can be done
 through clear guidance on the structures to be set up and run at the community level, frequent back-up
 visits by local forest officials, and the State's early response to communities' calls for help. In addition,
 the legal framework should recognize the rights of communities to mortgage their forest Red Book
 Certificates (RBCs) for loans and to use their forests in joint venture commercial undertakings.
- In order for forest devolution to contribute more to poverty alleviation, it should be followed by capacity improvement programmes, and poor and disadvantaged households should be given priority in obtaining access to these programmes.

- Policies and legislation should be more concrete, easier to understand and more stable so that local people can remain in touch with current policy frameworks.
- The forest planning and monitoring systems should be harmonized. Responsible people should work
 out the general structure for a single planning and monitoring system, based on the two existing
 systems. The responsibilities of each organization, and standard operations procedures should also be
 elaborated and agreed.
- It is recommended that a participatory approach be consistently applied to forest planning to ensure that forest plans reflect the different interests of all stakeholders.
- A more flexible structure for forest monitoring is recommended. This structure should capture the diversity of conditions and forest owners at the local level, while allowing concise summaries of data at the national level.

Introduction

Between May and July 2005, the Food and Agriculture Organization of the United Nations (FAO) commissioned a study of forest ownership in Viet Nam, focusing on forest allocation. This study is part of FAO's pilot survey of 20 countries in Asia,⁶⁹ which aims to collect detailed data on the extent of forests according to two variables – type of ownership, and level of control over and access to resources – as part of the Global Forest Resources Assessment (FRA) 2005. The objective of the study as stated in the guideline, is "to achieve a better understanding of the relation between forest resource tenure and forest management and in particular of the implications for poverty alleviation. Study results will support policy and law development in Viet Nam, and raise awareness about the linkages between forest ownership, management and poverty alleviation on the one hand, and sustainable forest management and poverty alleviation on the other.

The lack of a data matrix and of systematic quantitative data on forest ownership⁷⁰ made it difficult for this study to employ a quantitative method. As a result, it focuses on a qualitative analysis of the available data and information, complementing this with simple quantitative tools, where possible. Many data about forests and forest owners are not updated regularly, so data from the latest available year were used.

Various sources of data/information were used in the course of the study, including direct personal communication with key informants at various levels, existing literature related to forests and forest management in Viet Nam, and the existing legal database. In addition, the study's author has extensive experience in forest devolution and management in Viet Nam.

⁶⁹ Brunei, Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Japan, Republic of Korea, Democratic People's Republic of Korea, Lao People's Democratic Republic, Malaysia, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, Timor-Leste and Viet Nam.

⁷⁰ Although quantitative data on forest ownership were available for the provincial level, these data could not be used for quantitative analysis because it was not possible to disaggregate them for each forest tenure arrangement.

Context: the tenure system

OVERVIEW

Viet Nam is a tropical country in the Indochina peninsula of Southeast Asia. Its territory stretches from 8° 02' to 23° 23' northern latitude and from 102° 08' to 109° 28' eastern longitude. Its total land area is 33 038 000 ha, which is divided into 64 administrative provinces and municipalities.

According to recent statistics of the Forest Protection Department (FPD, 2004), 57.6 percent of the land in Viet Nam is classified as forest land. The current forest cover is 36.66 percent (30.54 percent natural forest and 6.12 percent plantation forest, excluding new plantation).⁷¹ Since 1986, forests in Viet Nam have been classified into three use categories: production forests account for 36.3 percent of the total forested area;, protection forests for 48.1 percent, and special-use forests for 15.6 percent (Table 1).

Forested land in Viet Nam can be divided into natural forests and plantation forests. Based on composition and physical setting, natural forests can be classified into timber forest, bamboo forest, mixed timber and bamboo forest, mangrove forest and forest associated with limestone mountains. Timber forest is the most dominant type, accounting for 78.6 percent of the total natural forest area. This is almost ten times as much as the second largest forest type, bamboo forest, which accounts for 7.9 percent of the total. These are followed by mixed timber and bamboo forest, accounting for 6.8 percent of the total, forest associated with limestone mountains, 6.1 percent of the total, and mangrove forest, 0.7 of the total, mostly in coastal areas of the central and southern provinces.

Forest type	Total area (ha)	Production forest (ha)	Protection forest (ha)	Special-use forest (ha)
I. Forested area	12 306 858	4 465 717	5 920 688	1 920 453
A. Natural forest	10 088 288	3 145 251	5 105 961	1 837 076
B. Plantation forest	2 218 570	1 320 466	814 726	83 378
II. Unforested forest area	6 718 576	2 529 807	3 709 440	479 328
Total forest area	19 025 434	6 995 525	9 630 128	2 399 782

TABLE 1 Forest classification according to use

Source: FPD, 2004.

STAKEHOLDERS IN FOREST MANAGEMENT

According to the Constitution of the Socialist Republic of Viet Nam, all forest resources (including land, trees and wildlife) are under the ownership of the people. The State manages forest resources in accordance with master plans and laws, and legally entrusts the management of forest to specific actors. At present, eight major groups of stakeholders are involved in forest activities:

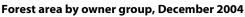
- State enterprises, mostly State forest enterprises (SFEs) and State forest companies;
- management boards for protection forest (MBPFs);
- management boards for special-use forest (MBSFs);
- joint venture enterprises;

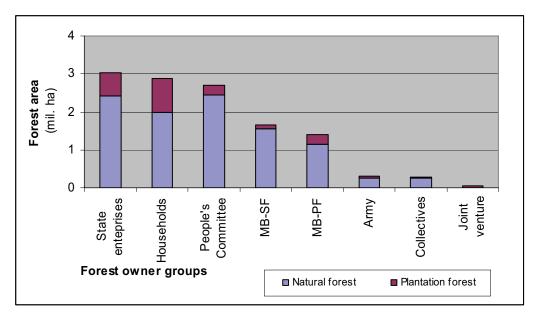
⁷¹ In December 1999, forest cover was 33.2 percent (28.7 percent natural forest and 4.5 percent forest plantation).

- individual households;
- collectives, such as groups of households and communities;
- army units;
- people's committees (PCs), mostly at the commune level (CPCs).

State enterprises are the largest forest owners in Viet Nam (Figure 1); in December 2004 they were managing about 3 million ha, or 24.6 percent of the total forested area (including natural and plantation forest). With 23.3 percent of total forested area under their management, individual households are the second largest owner group. PCs are the largest owners of natural forest, with almost 2.5 million ha, or 24.3 percent of the total natural forest area. Individual households own the most plantation forest, with 872 000 ha, or 39.2 percent of the total. Collectives and joint venture enterprises are the two smallest groups of forest owners: collectives own 0.6 million ha of forest, and joint venture enterprises 68 500 ha.

FIGURE 1





Data are sorted in descending order of total forest area.

Source: FPD, 2004.

RIGHTS AND RESPONSIBILITIES OF FOREST OWNERS

The discussion that follows focuses on forest management by SFEs, MBPFs, MBSFs, individual households, collectives and PCs, which together manage more than 97 percent of the total forested area in the country. Forest management by joint venture enterprises and army units will not be discussed because there is little available information about this:

- An MBSF is responsible to the State for protecting, managing and conserving the area of special-use forest under its responsibility. It is also responsible for preparing and submitting proposals for investment in the forest under its management, and for implementing investment activities. An MBSF is also in charge of monitoring changes in forest conditions. It has the right to carry out research and socio-cultural activities and ecotourism. Staffing for an MBSF is based mostly on the size and remoteness of the forest under its management. A minimum of five people in an MBSF are paid from the State budget.
- An MBPF is responsible for protecting, managing, developing and using an allocated area of protection forest according to the laws and regulations in force. It is in charge of preparing

annual work plans based on approved master plans. An MBPF is also responsible for receiving investment funds and subcontracting local people or organizations for the protection of its forest. It monitors changes in forest conditions according to Ministry of Agriculture and Rural Development (MARD) requirements. The rights of an MBPF include the organization of production and commercial activities in allocated forest. A minimum of seven MBFP staff members are on State salaries.

- An SFE is responsible to the State for the production forest area under its management and for the effectiveness of the production and commercial activities in this forest. It is also responsible for monitoring changes in forest conditions and carries out periodical inventories of its forest resources. Among the rights of an SFE are rights to use, purchase and process forest products as regulated by law, to use part of its allocated forest land for agricultural or fishery purposes, to commercialize the allocated forest in cooperation with other organizations or individuals, and to subcontract its allocated forest to other organizations, households or people for forestry, agriculture or fishery purposes.
- Other groups, including households and individuals⁷² managing production forest, have the right to State support through soft loans, extension, product processing and marketing. They are also entitled to collect timber and other forest products and to use part of the allocated forest for agricultural or fishery purposes. In return, they have to ensure that the allocated forest is used in accordance with existing laws and regulations. Forest owners also have to pay taxes as required by law, to report changes in the conditions of their allocated forests and to carry out periodical inventories of their forest resources.

MANAGEMENT ARRANGEMENTS

Most forests in Viet Nam are managed as private, State or common property, but some forest is managed through contracts.⁷³ Detailed data on the forest area under each tenure system are not available, and the discussion in this paper is based largely on aggregated forest data for 2004 at the national level, which were made available by FPD (Annex 7).

Private property: This arrangement includes forest management by individual households and State and joint venture enterprises (Table 2). Under this arrangement, forest is allocated to its owner for long-term (50 years) management. In most cases, forest owners under this arrangement are entitled to a legal land use certificate, called a Red Book Certificate (RBC), for the forest areas they are given.⁷⁴ By law, the RBC is the highest legal document certifying ownership of a piece of (forest) land. It represents legal recognition of all rights and responsibilities as regulated in current land law. RBC holders have the right to exchange, transfer, lease, inherit and mortgage their RBCs and to use their forest in joint production and commercial activities. Owners of forest under this arrangement are required to pay taxes.⁷⁵

State property: Forests under State property arrangement are managed at different levels by PCs, army units, MBPFs and MBSFs. Under this arrangement, forest is allocated to State bodies for an unspecified period. Where the forest falls into the special-use or protection category, forest owners are entitled to receive State budget for its management. An important difference between this management arrangement and the others is that owners of forest under this arrangement do not pay taxes on the forest they manage.

Common property: This arrangement is found in forests managed by collectives, including those that are legally recognized by the State. Forest under this arrangement is allocated to a group of individuals, each of whom has similar rights and responsibilities. Owner groups are entitled to have RBCs for the areas of forest they are allocated. In most cases, this forest management arrangement involves groups of households or a whole community/village, and legal recognition of this arrangement has recently emerged as an important issue in forest management in Viet Nam. At

⁷² By law, all individuals and households managing forest in Viet Nam have similar rights and responsibilities, regardless of ethnicity.

⁷³ The area of forest managed under contract is incorporated in the other three management arrangements.

⁷⁴ As the process of forest land allocation is still ongoing, not all legal owners of forest are yet in possession of RBCs.

⁷⁵ The amount of tax payable by different owner groups varies, and may be zero in certain cases.

present, only a small area of forest is under the common property arrangement, but its potential for the future is promising.

Forest contracting: The most popular form of forest contracting in Viet Nam is *khoan quan ly bao ve rung*, or protection and management of forest through contract. This management arrangement is formed when the owner of a State property forest signs a contract with an organization, household, group of households or village to protect that forest. Under this arrangement, rights of ownership of the forest remain with the contractor, and the contractee's rights are specified in the contract, usually on an annual basis and renewable on satisfactory performance by the contractee. The total cumulative contract time for one piece of forest is not more than five (consecutive) years. The contractee is entitled to a remuneration of 50 000 dong (D) per year per hectare of forest under contract.⁷⁶ This management arrangement is applied in the 5 Million Hectare Reforestation Programme (5MHRP) (Box 1).

TABLE 2 Summary of forest ownership categories

	Private property	State property	Common property	Forest contracting	
Forest owner groups	Households, SFEs and joint ventures	PCs, army units, MBPFs and MBSFs	Collectives	Contractor is the owner	
Total area of forest (ha)	5 954 806	6 067 421	284 632	2 261 966†	
Duration of ownership	Usually 50 years, renewable	Mostly unspecified	Usually 50 years, renewable	One year, renewable for up to five years total	
Type of ownership paper	RBC	State decision	RBC	Contract	

[†] Area under 5MHRP only.

BOX 1

Forest contracting under 5MHRP

5MHRP, also known as National Programme 661, was launched in 1998. One of its objectives is to increase forest cover from about 9 million ha (28 percent forest cover) to 14.3 million ha (43 percent forest cover) by 2010. Of the 5 million ha of forest to be established, 2 million ha are protection forest and 3 million ha production forest.

One of the measures to achieve this objective is to contract local people to protect forest. Between 1998 and 2005, 2.26 million ha of forest were contracted to local people for protection, costing about D100 billion per year. On average, the cost per hectare of forest protection under 5MHRP is lower than the planned D50 000, mainly because some provinces have stretched the allocated budget (by lowering the unit cost) to cover more target area.

Forest contracting is done by local 5MHRP implementing agencies (e.g., local State enterprises or management boards) through the following process:

- *Provision of information:* the 5MHRP implementing agency announces the forest contracting to local people, informing them of the location of the forest and the remuneration for contractees.
- *Collection of applications:* local people submit applications for contracts to the implementing agency (via the village head).
- *Screening of applications:* the implementing agency, in collaboration with the village leader, checks the applicant households' capability in forest protection (the availability of adult labourers is an important criterion).
- Selection of households: the implementing agency selects the households to which contracts for forest protection will be issued; it also assigns the size and location of each forest plot.
- *Signing contracts*: selected households visit the forest contracted to them and sign the protection contracts.

⁷⁶ At time of writing, D15 850 = US\$1.

- *Forest protection*: contractees are responsible for protecting the contracted forest area throughout the year.
- *Evaluation, payment and renewal of contracts*: at the end of the year, the implementing agency evaluates the contractees' forest protection and pays them their remuneration. Contractees can renew their contracts for the coming year.

The main source of funds for forest contracting is the national budget, but provincial budgets also contribute.[†] Other budgets, such as those from loans and international donors, are not used for this item.

+ Between 1998 and 2005, the national budget contributed a total of D3 318 billion to 5MHRP. Contributions from provincial budgets were D247 billion. However, it is not known how much of the money from each source was spent on forest contracting.

FOREST PLANNING AND MONITORING SYSTEM

At present, there are no specific planning and monitoring systems for the different forest management arrangements in Viet Nam. Instead, the current systems of forest planning and monitoring apply to all types of forest tenure. The ultimate responsibility for forest planning and the monitoring of changes in forest conditions lies with MARD, which assigns individual tasks to the specific organizations under its disposal.

Following a Ministry of Forestry decision, forest planning is the task of the Forest Inventory and Planning Institute (FIPI) (MARD, 2003c). FIPI works with provincial authorities to prepare provincial forest plans; no comprehensive forest planning has been carried out for the whole country. Forest planning at the regional and provincial levels follows the socio-economic development planning cycle of ten years. Within each regional or provincial boundary, planning is carried out for each forest type (production, protection and special-use forest). Planning specifies the area of forest to be used for specific purposes (e.g., regeneration, plantation, exploration), based on the forest allocation, protection, plantation and exploration that can take place.

Forest monitoring is the responsibility of the Forest Protection Department (FPD),⁷⁷ which launched a test system for monitoring forest condition changes in two provinces in 2000. After successful implementation of this, the monitoring system was expanded to cover the whole country in 2001, and became officially functional in 2002.

FPD has the leading role in monitoring changes in forest conditions throughout the country. All forest owners are required to report changes in their forest, and forest organizations at the local level coordinate this information. FPD prepares special forms for this local-level data collection (Annex 6) and is developing a database management system for forest monitoring, which is available at the provincial level and in some districts. FPD is also introducing a Geographic Information System (GIS) into the forest monitoring system, using MapInfo software. Digital maps of commune units at 1: 10 000 scale will be used as the basis for forest resource monitoring.

Data on changes in forest conditions are updated from the bottom up. At the communal level, a forest protection official collects information on changes from all forest owners and passes this on to the District Forest Protection Office. District-level data are then passed on to the provincial FPD, which sends them to FPD in Hanoi for aggregation at the national level. Data on changes in forest conditions are published annually.

Although the monitoring of changes in forest conditions is a national programme, forest monitoring at the provincial level is funded from the province's budget. Where provincial authorities have not approved the forest monitoring programme, the budget to run it depends on

⁷⁷ In addition to FPD's monitoring activities, FIPI carries out a countrywide inventory of forest resources every five years. The results of the latest inventory were due to be published at the end of 2005.

the administration budget available for the provincial FPD. By the end of 2004, 43 out of 61 provinces with forest⁷⁸ had approved the provincial forest monitoring programme.

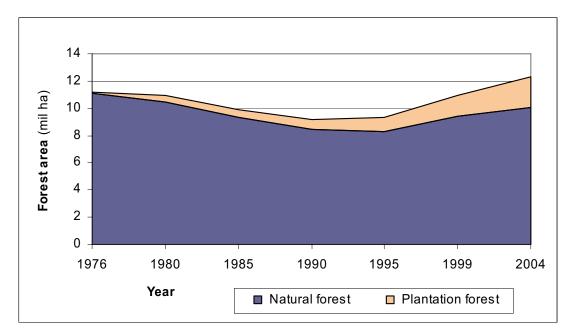
⁷⁸ Three provinces – Hung Yen, Vinh Long and Can Tho – have no forest cover and are not part of the forest monitoring system.

Changes and trends

After the end of the war with the United States, all forest resources in Viet Nam were managed by the State (Box 2 describes major milestones in the forest policy and legal framework). The Ministry of Forestry⁷⁹ was in charge of State forestry issues at the national level, departments of forestry were established for each province, and State forest organizations were also present at the district and, in some cases, commune levels (Nguyen *et al.*, 2001). Forest exploitation was a major focus of the forestry sector during this period, and SFEs were set up to be in charge of forest exploitation and plantation at the field level. In early 1989, 413 SFEs were managing 6.3 million ha of forest land in Viet Nam (MARD, 2001b; Nguyen *et al.*, 2001).

However, the area of natural forest declined quickly (Figure 2), and by 1986 almost half of the SFEs had run out of forest to exploit.⁸⁰ In addition, the State budget to run this system was cut, and many forest enterprises were faced with unemployment (MARD, 2001b; Nguyen *et al.*, 2001). Restructuring the SFE system became necessary and was initiated by the general framework for reform of SFEs. In September 1999, a Prime Minister's decision defined the specific purposes of and principles for restructuring SFEs, giving them the role of firms. These policies marked a major change in forest ownership in Viet Nam.

FIGURE 2 Changes in forest area, 1976 to 2004



Sources: FPD, 2004; Nguyen et al., 2001.

At the same time, Viet Nam's forest policy changed by devolving forest management from the State. The 1991 Law on Forest Protection and Development stipulated that forest resources could be allocated to diverse land users, including organizations and individuals, for management, protection and commercialization. It also established a legal basis for setting up management boards for protection and special-use forests. In July 1993, a Land Law was passed specifying that land users were entitled to long-term, renewable land-use titles, or RBCs. In addition, the law officially

⁷⁹ In December 1995, the Ministry of Forestry and two other ministries merged to become MARD, which has been in charge of forestry issues at the national level ever since.

⁸⁰ Between 1976 and 1990, an estimated 190 000 ha of forest was lost every year across the country.

recognized that titleholders had five rights: to exchange, to transfer, to inherit, to mortgage, and to lease. These two laws provided the basic framework for various management arrangements other than State property.

During this period, various legal documents specified forest management arrangements as forest contracts and private property. In 1992, National Programme 327 was launched, according to which individual households were entitled to annual contracts for the protection, restoration and regeneration of forest areas. Households could also be allocated cultivable land for agroforestry or agricultural purposes. On 15 January 1994, the government issued Decree 02/CP, ushering in a new trend in the management of both forested and unforested forest land, including natural forests. According to this decree, the State can allocate forest land to organizations, households and individuals for long-term (50 years) use in accordance with the uses stipulated for each forest type – production, protection and special use.

In principle, Decree 02/CP provides a framework for transferring the management of forest land from the State to local organizations, households and individuals. On 4 January 1995, the government issued Decree 01/CP on the allocation of land through contracts for agriculture, forestry and aquaculture. According to this decree, individuals, households and groups of households are eligible for long-term contracts with State organizations. In July 1998, the Prime Minister issued decision 661/QD-TTg for implementation of 5MHRP, which emphasizes the allocation of forest land to organizations and individual households as a measure to realize its objectives.

Viet Nam's forest policies in the 1990s reveal a shift in the forestry sector's focus from exploitation to protection and afforestation (MARD, 1998; 1999). There is a move from State forestry to more people-oriented forestry, and private property is introduced as a new forest management arrangement. Rights to local forests are devolved to local inhabitants in some places, and people are more involved in forest management, mostly through protection contracts. The deforestation and led the State to recognize the inefficiency of this system. This, coupled with the important role of various forest owner groups in managing forest resources, was a driving force for changing the trend of forest policy during the 1980s and 1990s. Another important force was the successful reform of the agriculture sector; the increased agricultural output that resulted from contractual arrangements in agricultural land management, which were introduced in 1985, helped to stimulate changes in forest management.

By the late 1990s and early 2000s, another trend in forest management in Viet Nam was emerging – forest management by groups of households and whole communities/villages. The management of forests by local communities is not a new concept and is, in fact, traditional in many forest communities (Box 3; Le, 2001; Nguyen, Pham and Nguyen, 1999; Tran, 2004; Pham, 2004). Changes in forest policy during the 1990s created a general framework for the involvement of local people and communities in forest management. A national-level Community Forestry Working Group (CFWG) was set up in 1998 to advocate for community forestry. At present, it is preparing guidelines to facilitate the formation and operation of community forestry, but this is still in its early stages. International donors are also promoting this form of forest management through their projects in Viet Nam.⁸¹

As well as the forest they traditionally managed, local communities are now also becoming involved in the protection and management of provincial forests. By June 2001, local communities were protecting/managing almost 1.7 million ha of forest, of which 86 700 ha were traditional community forest (Pham, 2004). However, most of these community forests did not have RBCs. Dak Lak and some other provinces were pioneers in the devolution of forest management to local communities with RBCs. In 1998, the experimental forest devolution programme in Dak Lak was initiated, and by the end of 2000, 19 groups of households had been assigned natural forest areas with RBCs (Nguyen, 2005b: 97). In Son La, a forest devolution programme was started in 2000, and by the end of 2004 about 4 980 groups of households and 2 423 communities had been given 510 000 ha of forest with RBCs. Thua Thien Hue also started community forest management in 2000,

⁸¹ Examples are the Social Forestry Development Project Song Da in Son La and Lai Chau; the Mountain Rural Development Programme in Phu Tho, Tuyen Quang, Yen Bai, Ha Giang and Lao Cai; the Rural Development Project in Dak Lak; and the Sustainable Management of Natural Resources in Central Viet Nam.

and by the end of 2004, seven communities had been given about 4 500 ha of forest for management; issuance of RBCs to these communities is expected in the near future.

Changes in the legal framework during the 2000s also reflect a trend towards community management. In November 2003, a new Land Law was passed, which recognizes a community as a legal owner of land resources. The Law on Forest Protection and Development, which was passed in December 2004, is an important innovation for forest management in Viet Nam in that it specifies the allocation of forest to local communities for protection and management. In general, two important factors are responsible for the recognition of common property as a forest management arrangement. The first of these is the changing trend in forest policy throughout the world, which – encouraged and promoted by international donors – has changed the view that Viet Nam's forest policy-makers have of local people's role in forest management. The second factor is the trend that is being driven by experiences and experiments at the field level, which show policy-makers the strong interest of local communities in managing local forests, thus motivating the promotion of needs-based policies.

However, it is important to note that the 2004 Law on Forest Protection and Development only recognizes rights to use forest (i.e., to withdraw forest products) and does not indicate that a community has rights of ownership to the forest it has been allocated (Nguyen and Nguyen, 2005: 9). Article 5 of the law, which specifies the legal owners of forest, does not list communities as legal owners (Annex 3).

BOX 2

Major milestones in the policy and legal framework

July 1976: Ministry of Forestry established as a State organization responsible for forestry issues at the national level. Benchmark of nationalization of forest resources.

December 1986: Economic renovation policy launched after the Sixth National Congress of the Vietnamese Communist Party.

August 1991: Law on forest protection and development passed by the Eighth National Assembly, marking an effort to involve local people and different economic sectors in forest protection and development.

July 1993: Land law passed by the Ninth National Assembly, stipulating landowners' rights to lease, exchange, inherit, mortgage and transfer land-use title.

November 1999: Government Decree 163/1999/ND-CP on land allocation for forestry purposes.

November 2003: Land Law passed by the Eleventh National Assembly, recognizing the legal status of a community as an owner of land resources.

December 2004: Law on Forest Protection and Development passed by Eleventh National Assembly, recognizing common property as a legal forest management arrangement.

Analysis of components of the tenure system

FOREST MANAGEMENT

In general, specific types of forest do not have specific management arrangements. Each type of forest appears to be managed under diverse property regimes. By law, special-use forests are under the direct responsibility of MARD, the Ministry of Culture and Information (for cultural, historical and environmental forest sites) and PCs at the provincial level. These bodies can allocate special-use forest to district-level MBSFs or PCs for management. When the special-use forest is more than 1 000 ha, an MBSF can be established to manage it. Other special-use forests can be managed by communal-level PCs or by households and individuals. At present, about 1.84 million ha are managed as 126 special-use forests, of which 27 are national parks, 60 nature conservation areas and 39 cultural, historical and environmental forest sites.⁸² Only eight national parks whose territories span more than one province are under the direct management of MARD; all other special-use forests are managed by provinces. No data are available about the management of special-use forest as private, common or other form of State property. Forest contract arrangements usually apply to protection and special-use forests, as State budget is available for the protection of only these forests.

An MBPF can be set up to manage a protection forest of more than 5 000 ha. Smaller protection forests are allocated to (local) organizations, individuals or households, and can be managed as common property in areas where the topographical conditions are complicated (e.g. on rocky mountains). Protection funds come from the provincial budget and, in recent years, 5MHRP, which provided the funds to protect 2.26 million ha of forest between 1998 and 2004.⁸³

Private property is the most common management arrangement for production forests, although SFEs, households and joint venture companies can also be allocated such forests and some are managed as State or common property. MBPFs and MBSFs can be allocated production forest, in addition to their protection or special-use forest, and production forest can also be under the management of PCs. Where the conditions are suitable for community management (e.g., where forests are important to the traditions or livelihoods of the community), production forest can be allocated to local communities for management.

About 55.2 percent of timber forest is managed as State property, 42.4 percent as private property and 2.4 percent as common property⁸⁴ (left side of Figure 3). Areas of bamboo, mixed timber and bamboo and mountain forests are fairly evenly distributed between private and State property, while State management dominates mangrove forest, accounting for almost 70 percent of the total. For all types of forest, only modest areas are managed as common property. Each forest type seems to be fairly evenly distributed among the different management arrangements (right side of Figure 3). Across the three management arrangements, timber forests account for between 76 and 81 percent of total forest, bamboo forest for 6.6 to 9.5 percent and mangrove forest for less than 1 percent. Only mixed timber and bamboo forest and forest on mountains show wide variance. With mixed timber and bamboo forest accounting for only 2.4 percent of forest under common property, compared with 6.3 percent of State property and 7.6 percent of private property. Forest on mountains accounts for 5.5 and 6.5 percent, respectively, of the total forest area under State and private property, but for 11 percent of that under common property.

⁸² 95 of these forests have already been decreed and the remainder have been proposed.

⁸³ It is not clear how much of this area is protection and how much special-use forest.

⁸⁴ Separate data on forest under contract arrangement are not available; the area of such forest is included in the three arrangements mentioned.

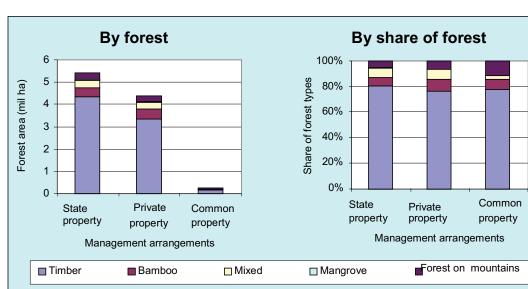


FIGURE 3 Distribution of forest by management arrangement

Source: FPD, 2004.

By law, forest planning has to be based on the master land-use plan, existing forest protection and development plans, local socio-economic conditions and local people's demand for and capability in forest protection, use and plantation. It also has to follow the cycle of socio-economic development planning. However, at present about 10 percent of special-use forest and all protection forest has no forest management plan. One of the most important issues of the moment is increasing local participation in forest planning. Although bottom-up and participatory approaches have been introduced into forest land-use planning in Viet Nam (MARD, 2003c), the planning exercise is often carried out with limited or no involvement of local forest users/owners. Forest planning pays most attention to the forest itself, and the improvement of forest people's livelihoods is only a secondary issue. In the end, it is unclear whether the forest plan reliably represents all the different interests involved or only those of certain groups.

The system for monitoring changes in forest conditions requires cooperation from all forest owners, but many of them are reluctant to report the loss of forest area for fear of losing budget for protection or their forest title. The monitoring system has only a limited fund for cross-checking the data reported by forest owners, either through staff on the ground or through aerial photos and/or satellite images. In addition, the complexity of the situation is not taken fully into account. In cases such as in Dak Lak province, some SFEs, rather than reporting changes in their forest to district FPDs, report them directly to the Department of Agriculture and Rural Development, from which provincial FPDs then have to collect the data. This is because the forest areas of some SFEs span more than one district, and it is cumbersome to report monitoring information to all the district FPDs concerned. Another problem is funding in provinces where the forest monitoring programme has not been approved, and the budget for equipment (computers, plotters, scanners, etc.), training and personnel⁸⁵ is not available. This raises questions about the reliability of the monitoring system's outcomes, particularly in provinces where it has not been approved.

In forest management there are gaps between the *de jure* and the *de facto* rules. Unauthorized logging continues, even in protection and special-use forest areas. Nguyen (2005b) and Tran (2004) indicate that under both State and private property regimes in Dak Lak, local farmers retain their traditional uses of local forest, particularly with regard to the use of forest land for cultivation (Box 3). Similar situations are found in other provinces, such as Son La, Gia Lai and Thua Thien Hue. Production forest is most susceptible to overlapping (*de facto*) management arrangements, although

⁸⁵ It is estimated that there are more than 1 000 FPD staff members involved in forest monitoring: five at the national level, 122 at the provincial level (two in each province with forest) and 900 at the district level (two in each district).

it is rare that an informal arrangement dominates over a formal one. One of the main causes of such overlaps is a lack of attention to the local traditions and legitimate interests of different stakeholders, particularly weak and poor groups, in the implementation of forest policies at the local level. Another contributing factor is the lack or absence of mechanisms to monitor policy implementation. Some policies are difficult to comprehend and realize in practice, which leads to confused implementation.

Access to forest benefits for local (farmer) owners also needs to be addressed. By law, all forest owners are entitled to the benefits from their forest, but in practice most individual owners are disadvantaged by organizational owners (both State and private) in gaining access to forest benefits. Individual households owning forest find it difficult to acquire legal logging permits, so they collect timber without permits (Nguyen, 2005b). Similarly, legal permission to use forest land for cultivation is also difficult to obtain, and most individual forest owners use forest land for agricultural purposes without a legal permit (Nguyen, 2005b). One of the reasons for this is unclear policy and guidance on the procedures to be followed in order to obtain a forest use permit. In the end, the promised benefits appear too small to provide the incentive for farmer forest owners to accept the attached responsibilities for forest management.

BOX 3

Traditional forest ownership in an Ede village

As in many other Ede villages in the area, the inhabitants of Cham B have had close links with the nearby forest for generations. Despite the village's relocation and the State property claim to the forest, Cham B villagers still maintain a traditional system of forest resource ownership.

There is an area of forest that is known locally to belong to Cham B, which is where the ancestors of Cham B's present inhabitants used to live and farm. Cham B villagers' access to arable land in this forest area is regulated by local institutions. Farmers whose parents used to farm in the area can make a claim to the land. Traditionally, when someone first cleared a patch of forest for cultivation, (s)he would plant several mango trees to mark ownership. Now that the land has been left fallow, the mango tree has become a symbol of landownership that all villagers recognize.

Local people also have a traditional way of claiming ownership to timber trees, which is based on a "first-see, first-own" basis. Households set their claims to timber trees by making clear and visible marks on the tree trunks. A forest tree with a mark on its trunk is "owned", and only the person who made the mark has the right to take the tree home.

Violation is sanctioned by traditional rules, with village heads (appointed by the State) deciding the penalties. The village head is also responsible for settling disputes regarding traditional law.

Source: Fieldwork by author in 2002 (see also Nguyen, 2005b).

LIVELIHOODS

Forest is important for rural communities in upland areas of Viet Nam. Forest resources can provide the basis for rural livelihoods, and can be an important source of income for local people. The most important uses of forest resources for Viet Nam's rural upland population include the use of forest land for cultivation purposes, the collection of timber for home use (e.g., housing and tools) and the collection of non-timber forest products (NTFPs) and game animals for food. "Some rural people have derived great benefit from the elimination of forest cover through increased access to arable land and through conversion of timber and other forest products into income and capital" (Sunderlin and Huynh, 2005: 4).

Crop production on forest land has been a major source of livelihoods for forest people. Although swidden farming is discouraged in forest areas,⁸⁶ indigenous upland farmers continue to practise traditional farming systems. A patch of forest is cleared for cultivation for a few years

⁸⁶ Permanent farming has been promoted in upland areas of Viet Nam since 1968, with Decree 38/CP of the Government Council on fixed cultivation and sedentarization.

(depending on the fertility of the soil and the pressure on land use in the area) and then left fallow to regain its fertility. Cultivation on swidden fields in forest can produce important quantities of food for farm households. Do (1994) estimates that 9 million Vietnamese ethnic minorities practise swidden cultivation, and for one-third of these people it is their main source of livelihood. Nguyen (2005b) indicates that in Dak Lak province, swidden fields in forest that has been allocated to a village can produce up to 70 percent of local household crop production, in value terms.

NTFPs are the second most important livelihood source for local people, both rich and poor, in the remote uplands of Viet Nam. The poor people living in or near natural forest areas rely on a wide range of NTFPs for food, fodder, medicines and other daily needs (Sunderlin and Huynh, 2005: 32). Pham (2003) indicates that a rural community can gather 194 different products from nearby forest, about 80 of which are collected frequently. The most important NTFPs are fuels (about 50 percent of the total value of NTFPs), bamboo shoots, medicinal herbs and forest leaves. Almost 8 million members of ethnic minorities in Viet Nam collect NTFPs (Sunderlin and Huynh, 2005), and it is estimated that NTFPs account for 15 to 25 percent of the household income of those living in forest areas. Most of the NTFPs collected are used domestically, but some are sold, particularly medicinal herbs, bamboo and rattans.

Timber products are of only limited importance to people's livelihoods because it is difficult to convert timber into cash. Timber is most important to people's livelihoods in forest plantation areas, particularly where pulp material abounds (e.g., six provinces in the production area of Bai Bang Paper Mills in the Northern Upland Region). The commercial logging of natural forest is not regarded as a means of livelihood for local populations (Nguyen et al., 2001). Nevertheless, the emerging trend of forest devolution is increasing the potential for local populations to benefit from small-scale timber logging. By law, forest owners are entitled to all the harvest from the first production cycle of plantation forests and to part of the incremental volume of timber from natural forests. According to Decision 178/2001/QD-TTg, the owner of a forest that was of medium quality at the time of allocation (i.e., forest with a timber volume greater than 100 m³/ha) is entitled to 2 percent of the total value⁸⁷ from each year of management. For poor-quality forest, 100 percent of the harvest goes to the owner. Some provinces have used this decision as the basis for benefit calculation, but have modified it slightly. Forest owners in Thua Thien Hue are entitled to between 10 and 50 percent of the harvest, depending on the growth rate of the allocated forest. In Dak Lak, forest owners are entitled to 6 percent of the total value of the harvest every year of management, while in Son La they are entitled to between 30 and 95 percent, depending on the number of years they have managed the forest (from a minimum of five years), the type of forest (production or protection) and the status of the forest at the time of allocation. (Box 8 gives an example of timber benefits for local forest owners.)

The environmental impacts of forest management also influence the livelihoods of local people, mostly through protecting water resources, improving soil conditions, mitigating natural calamities, and providing payments for environmental services (PES). In recent years, large-scale natural calamities such as floods and drought have occurred increasingly throughout the country, directly influencing the livelihoods of both forest people in the uplands and lowlanders. However, not everybody perceives the importance of environmental services, and many people associate forest management with local livelihoods only (Le, Ziegler and Grever, 2002). Forest management can have an impact on local livelihoods through payment schemes for the foregone use of forest resources. In Viet Nam, such a scheme is applied through the forest protection contract. So far, two programmes related to PES have been implemented: the completed 327 Programme and its follow-up 556 Programme; and the ongoing 5MHRP (Box 1). Under both programmes, participating farmers are paid to protect forest and keep it unused. The gross rate for protecting forest is D50 000/ha per year, and farmers receive a net income of D30 000 to D35 000/ha per year.⁸⁸ Between 1998 and 2005, 5MHRP spent almost D100 billion per year on forest protection contracts (Nguyen, 2005a).

⁸⁷ It is not clear if this 2 percent refers to the incremental volume of timber or the total volume of timber at the time of harvest.

⁸⁸ Some provinces have reduced this rate in order to expand the area under protection (Nguyen, 2005a).

CAPACITIES

Over the last three decades the quality and quantity of forest under State management declined. This has contributed to changing trends in forest ownership over the last decade. The management of forest as State property focuses on protection and special-use forest, while most production forests are managed as private or common property.

Financial resources for the management of special-use forest areas come from the provincial (in most cases) or national government (for the eight national parks under MARD), and are more abundant than those for other types of forest. Emerton *et al.* (2003) estimate that US\$12/ha per year is available for special-use forest under the responsibility of MARD, and US\$6.5 for areas under provincial responsibility, but the annual budget available varies, depending on the financial situation of each province. For most of the forest under provincial responsibility, the budget available is barely enough to cover the modest operation and maintenance costs, which makes it difficult to manage the forest in accordance with requirements. Additional financial resources are available from national programmes (such as 5MHRP), tourist activities and the site-specific projects of international organizations, including BirdLife International, Fauna and Flora International (FFI), the World Conservation Union (IUCN) and the World Wide Fund for Nature (WWF), are identifying and expanding special-use forest areas and strengthening the management capacity of these forests (BirdLife International, 2004). In recent years, the legal framework for the management of special-use forest has been strengthened.

The owners of protection forests (including MBPFs, SFEs, households and communities) are entitled to annual State budget for forest protection, but this is limited and usually has to be stretched to cover large areas. The provinces provide additional financial resources, which vary from province to province because of differences in their financial statuses. National programmes are another source of financing, and sometimes forest resources can be used to provide supplementary funds for the management of protection forest. The strengthening of capacity to manage protection forest is specified in Decision 08/QD-TTg, the 2003 Land Law and the 2004 Law on Forest Protection and Development.

Production forest owners are supposed to be self-financing through the appropriate use of forest resources. At present, SFEs are the largest owners of production forest, and the forest under their management is often of higher quality than that managed by other owners. By the end of 2002, there were 368 SFEs, 40 of which were under the direct control of the central authorities and 328 under local (provincial) authorities. There were about 26 800 staff members in the SFE system, managing approximately 5 million ha of natural forests, or 50.7 percent of the total natural forest area of the country (MARD, 2003a: 57). However, the performance of SFEs could be improved. Some enterprises have not delineated clear boundaries for their forests. Others do not link responsible management to the development of forest resources. Most SFEs do not use all of the forest allocated to them, and very few manage their forests in a sustainable way. Various policy attempts have been made to strengthen SFEs' capacity for managing forest in accordance with existing regulations. However, four years after Decision 187/199/QD-TTg on the restructuring of SFEs, little progress has been made in implementing it.

Individual households are the second largest owners of production forest. By September 2002, about 1.55 million ha of forest had been given with RBCs to households (MARD, 2003c).⁸⁹ Although households have only recently become legal forest owners through the holding of forest RBCs, they have proved to be more effective than SFEs in managing their forests. Some forest under household ownership has declined, but far less has been lost than under SFE management (Tran, Nguyen and Sikor, 2004). Local households are obtaining increasing benefits from the forest (Nguyen, 2005b), but the data regarding this have not been differentiated between forest owners and non-owners, so it is not clear that owners benefit more than non-owners. The State has promulgated several legal documents to strengthen households' capacity to manage forest through providing extension support, soft loans, etc. However, these policy ideas have not been fully implemented.

⁸⁹ FPD (2004) reports that 2.87 million ha of forest (of which 2 million ha was natural forest) was being managed by individual households in December 2004, but provides no data on RBCs.

The management of forest as common property has been formally recognized recently, and in only a few test cases has a community been given an RBC for the forest under its management. Although no comprehensive study of the effectiveness of community forest management is available, the initial results of studies conducted by CFWG show that many communities have organized forest protection work without support from the State. In the cases under review (which include those documented in literature and others observed by or reported to the author), the forest resources under community management seem generally to be well protected, and there have been few cases of unauthorized appropriation of forest resources. Dak Lak, a Jarai village that applied for a forest allocation with RBC, has established its own regulations for forest management and organized a forest patrol. This village has even succeeded in preventing outsiders from logging timber in its forest (Dang Thanh Liem, Dak Lak Rural Development Project, personal communication). (Box 8 gives another example from Thua Thien.) In some cases, however, communities have difficulty financing their forest protection activities (Nguyen, Pham and Nguyen, 1999; Nguyen and Vu, 2002; Pham, 2004).

The capacity to protect forest under contractual arrangements largely depends on the budget available from the State. At present, 5MHRP is the only source of funding for this forest management arrangement, which it obtains from the State budget.⁹⁰ Local people usually accept the rates that contractors offer for protecting forest, even when these are reduced in order to put larger areas of forest under protection. Although local communities sometimes protect forest without immediate cash remuneration (Pham, 2004), a common problem in most parts of Viet Nam is that when funding stops, there is no capacity to protect forest, which becomes vulnerable to uncontrolled appropriation. To solve this problem, it has been proposed that the management rights of forest be devolved to the contractee at the end of the contract period.

POLICIES AND LEGISLATION

Over the last two and a half decades, various legal documents have been issued in an effort to improve owners' management of specific forests. There are now more than 100 laws and regulations relating to forest and forest management at different levels (Annex 4), but no legal document regulates the implementation of these. The following procedures are based on research by MARD's Legislation Division (MARD, 2003b):

- Step 1: Identification of the entities that are subject to the legal document, based on the document's contents and scope.
- Step 2: Preparation of the legal document (prior to its implementation),
- Step 3: Preparation of an implementation plan.
- Step 4: Preparation of the legal document's implementation (including training, informing potential beneficiaries and other awareness raising activities).
- Step 5: Evaluation of implementation of the legal document.

This study found that different forest owners have different capacities for understanding laws and regulations relating to forest management, rights and responsibilities. Organizational forest owners (such as SFEs, MBPFs and MBSFs) seem to understand them better than farmer owners (rural households). Level of understanding also varies according to level of education and access to information. In a programme on forest land allocation or forest contracting with local people, at least one local-level meeting should be organized to inform the programme's potential beneficiaries about the related policies, their rights and responsibilities. Nevertheless, this is often done in a rather "academic" manner, and the degree to which people have understood the discussions at the meeting is not evaluated. As a result, few households have a clear idea of their own rights and responsibilities (Nguyen and Le, 2002; Tran, Nguyen and Sikor, 2004), not to mention those of the State

⁹⁰ Funding for 5MHRP forest activities also comes from other sources such as international donors and loans, but funding from these sources is not used for forest protection contracts.

organizations concerned. Local leaders and intellectuals are among those who understand policies better.

Different levels of understanding of policies, rights and responsibilities result in different perceptions of the policies. Some villagers in Dak Lak, for example, are indifferent to RBCs because they perceive forest RBCs as no more than pieces of paper. Other people consider their ownership of forest as being temporary, and think that State enterprises can take forest back from them at any time. Some knowledgeable farmers understand their own rights and responsibilities as owners of forest and try to follow and make use of these, for example, by collecting timber for house construction in Dak Lak (Nguyen, 2005b).

Understanding and observation of legal regulations by non-owners of forests, particularly in forest devolution programmes, are also important. Experiences in Viet Nam show that most information and training on policies are directed to the future beneficiaries of programmes, and little attention is given to other affected people. In forest devolution programmes, for example, most policy information meetings are organized for future forest owners, while non-participating households from inside or outside the village have few opportunities to find out about the policies and their own rights and responsibilities. This results in many people being surprised when a forest area from which they could collect fuelwood a month previously is no longer accessible to them because it has become the property of a specific household or community.

TENURE RIGHTS, TENURE SECURITY AND ACCESS

Better rights to forest resources can lead to increased opportunities to benefit from those resources. However, improved rights do not automatically enable local households to procure better incomes and more secure food production from the forest. Rights are important, but they need to be accompanied by ability and/or access⁹¹ if they are to have positive effects on people's livelihoods. Rights are necessary conditions, and access is the sufficient condition for local populations to benefit from forest resources. Nguyen (2005b), for example, found that the improved rights to forest resources brought about by forest devolution in Dak Lak had positive impacts only on households with sufficient productive resources, particularly labour and capital. Poor and disadvantaged households who lacked these resources obtained few of the benefits of the new situation, but suffered its consequences. Access is important in obtaining forest benefits and improving rural livelihoods, but (legal) rights are also needed in order to sustain income from forests. For example, illegal loggers are able to fell and collect timber from the forest but, without the legal rights to do so, their actions should be controlled and their benefits from the forest will not be sustainable.

In addition, rights to forest products need to be legally secure, or at least seen as such by the right holders, if local livelihoods are to be improved. Without secure rights, it is unlikely that local people will invest their resources in the forest for long-term benefits. In general, forest owners have legal rights, which are endowed by the State, and informal rights, which are defined and recognized locally. Under private and common property, forest owners have rights to forest for the term of the forest RBC, which is usually 50 years. Legal rights are protected by law and considered to be legally secure. It is important to note that under both private and common property regimes, local forest owners feel more secure about their tenure rights when their legal rights can be realized in practice (e.g., when forest owners can benefit from their forest) and are in line with traditional rights. More important, where local forest owners have adequate legal back-up to realize their new rights, the rights may be secure enough to improve livelihoods. In a study of forest management by a Mnong community in Dak Lak, Vuong (2003) indicates that the local community invested its labour in tending and protecting the forest because it was clear of its own rights and benefits. In addition, local people were also supported by local forest authorities in realizing their rights and responsibilities and by a development project in enrichment planting and thinning techniques.

Security of tenure rights for organizational forest owners under private or State property arrangements are sometimes challenged. Legal rights to forests are vested in the organizations that manage the forest, and local people are expected to refrain from appropriating forest resources. However, local people continue to use forest products when their livelihoods depend on them,

⁹¹ The meaning of the term "access" is defined as "the capacity of some actors to affect the practices and ideas of others" (Ribot and Peluso, 2003: 155).

claiming their informal rights to these products. Tran (2004) and Nguyen (2005b) suggest that the security of State forest tenure depends on the capacity of the organization in charge of forest management and the existing pressure on the forest resources. In addition, the extent to which State regulations conform with local institutions on forest management also influences the security of rights under State property.

Assessment of the effectiveness of different forest tenure systems

It is hard to say which system of forest tenure contributes most to sustainable forest management and poverty alleviation for two reasons: (1) there is a wide range of different biophysical, socioeconomic, cultural and climatic conditions across the country, and the performance of forest tenure has to be considered in these specific circumstances – a system may work well in one situation but fail in others; and (2) it is often difficult to achieve sustainable forest management and poverty alleviation at the same time, as the two do not always go together. This chapter focuses on situations in which a specific tenure arrangement works and contributes to sustainable forest management and poverty alleviation.

FIELD EXPERIENCES

Under State management, an organization's most important goal is the protection of the forest under its responsibility for environmental conservation and/or biodiversity purposes. Sustainable forest management is therefore considered more important than poverty alleviation. MBSFs and MBPFs, for example, have to protect the area of forest allocated to them against the unauthorized use of forest products and to develop forest resources (Box 4). The ability of these bodies to fulfil such tasks depends largely on the budget available, but annual State budgets are enough to pay only staff salaries and cover modest operation costs, so most management boards have to rely on supplementary budgets from national, local or international projects to cover the costs of their activities, so the forests under their management are likely to be well protected. The main reason for these additional resources is that these management boards are in charge of complex and/or important forest areas (such as forests whose territories span more than one province, or protection forests for important works), and therefore their staff need high incentives to carry out their tasks.

The improvement of local livelihoods is a secondary objective in State forest management. In most cases, forest livelihood activities are limited to non-permanent jobs (e.g., tree planting and tending or forest protection through contracts) and the limited collection of forest products. The State organizations managing forest as State property very rarely include poverty alleviation among their main goals or activities.

Box 4 illustrates the example of Bach Ma National Park in Thua Thien Hue province, where the management board's most important task is to protect the area of forest under its responsibility for biodiversity, conservation and environmental purposes. The importance of protecting this forest makes it an attractive investment for national and provincial government and international donors. However, local people suffer from the strict protection policies applied in the park, despite their awareness of the environmental importance of these policies. People's use and collection of forest resources from the park hamper the environmental goals of the park's protection work, but may be justified by subsistence needs and lack of alternatives.

BOX 4 Forest conservation and local livelihoods in Bach Ma National Park, Thua Thien Hue

Bach Ma National Park is situated 40 km southeast of Hue city at latitude 16°05' to 16°15' N and longitude 107°43' to 107°53' E. The park covers a total area of about 43 331 ha, of which 22 031 ha is the core area and 21 300 ha the buffer zone. Bach Ma National Park is identified in Viet Nam's Biodiversity Action Plan as one of the last remaining primary forests, and should receive the highest priority for protection because of its biodiversity value. The park includes about 19 percent of the flora and half of the fauna species in Viet Nam. It was officially created in 1991 with the purpose of conserving the only green transect left in Viet Nam, which stretches from the South China Sea to the border with Lao People's Democratic Republic. The core area of the park is managed by MARD, and the buffer zone area by Thua Thien Hue province. The park has a management board with about 68 staff, 40 of whom are forest rangers.

There are various investment projects related to the park. As well as national and provincial programmes, donor-funded projects have also been implemented, including a FAO project on forest land allocation, a social forestry project implemented by HELVETAS and Hue University, a rural development project implemented by Nordic Assistance to Viet Nam, a project to support afforestation and train technicians implemented by Nord Pas de Calais, a rural development project implemented by World Vision, a buffer zone socio-economic survey implemented by IUCN, and the Participatory Development of Bach Ma National Park Project implemented by WWF. In addition, Tropenbos International has six small projects in the park.

It is estimated that 70 000 people in more than 12 000 households live in the park. Only 65 households are in the core area, and the rest are in the buffer zone. The main source of local livelihoods is agriculture, and about 40 percent of the local households are classified as poor. Generally, people in the buffer zone of the park are positive towards conservation, probably because the severe flood of 1999 has raised awareness of the necessity to conserve forest. In addition, local households are generally aware of government regulations regarding the collection of biological materials from the park. Nevertheless, the area provides difficult conditions in which to achieve high agricultural output and, with no alternatives to agriculture, many households continue to use and commercialize illegal forest products. Those who invade and clear forest or collect forest products risk punishments ranging from confiscation of tools and the material collected for smaller violations to heavy fines or imprisonment for the extraction of timber, high-value plants and animals at risk of endangerment.

Sources: BirdLife International, 2004; Le, Ziegler and Grever, 2002; Tran Huu Nghi, Programme Team Leader of Tropenbos International Viet Nam, personal communication.

In its original form, forest contracting has the potential not only to improve forest resources but also to contribute to poverty alleviation. With the announced rate of D50 000/ha per year, a household protecting 30 ha can earn as much as D1.5 million a year, or D125 000 per month, which is a significant amount for poor upland households whose annual incomes are no more than D1 million per capita. In addition, the collection of NTFPs under the forest canopy can provide extra income or materials for home consumption. Nevertheless, poor households are not often selected as forest contractees because they do not have the necessary resource (labour) for the extra work demanded by the contract. In addition, there is confusion regarding ownership of the protected forest. Local people are not clear about their rights to the forest, particularly about their possibilities for benefiting from the forest in the future. As a result, local people become dependent on State funds, protecting the forest when these are available and not when they are not.

Box 5 assesses the effects of forest contracting arrangements under two nation programmes: Programme 327 and 5MHRP. In general, forest contracting has helped to increase the national forest cover, but its contribution to poverty alleviation is not clear.

BOX 5

Assessment of forest contracting

So far, two national programmes (Programme 327 and 5MHRP) have been involved in forest contracting. In both, local people receive cash payments for protecting and regenerating forests, and are allowed to collect limited NTFPs and other forest products. The following are the findings of a first assessment of forest contracting in these two programmes.

Strengths

- Generation of significant income for some participating households through cash payments and collection of NTFPs from the contracted forest.
- Contribution to the protection of forest resources and increased forest cover.

Weaknesses

- Government control and restrictions on forest use have undermined the contracts in some provinces.
- Low returns to participants and dependence on the government, with contract payments of D50 000/ha per year being insufficient to discourage local households from exploiting forest resources. Local households are not clear who are the recipients of future benefits from the forests.
- Inadequate funding: Protection of large areas of forest requires a substantial budget. Lack of sufficient protection funds to ensure the equal participation of all ethnic households may cause dissatisfaction among communities.
- Corruption and bad practices are resulting in budgets earmarked for protection being spent for other purposes. It is estimated that more than 50 percent of the total funds for Programme 327 were used for other purposes.
- Funding comes only from the State, and lowland people are not involved in paying for forest protection.
- Ambiguity and complexity of the programme are creating a lack of understanding of the rights and obligations stated in contracts. In addition, participating households often do not receive any official documents and are uncertain about the boundaries of their contracted forest.

Sources: 5MHRP Partnership Secretariat, 2001; Nguyen, 2005a; Sunderlin and Huynh, 2005.

Under private property, forest owners have obligations that are attached to the allocated forest. They are required to use their forest effectively and to maintain and develop its resources. These requirements apply to both organizational and individual forest owners and can be categorized into three major groups of activities: protection of forest against unauthorized use; plantation of trees where needed; and utilization of forest to maximize profits. SFEs, for example, are assigned by the State to protect and commercialize their allocated forests. Owing to a partial logging ban and, in many cases, low-quality forest, SFEs' most important activity is protecting forest for timber trees to grow. This includes using forest patrols to prevent people from unauthorized logging or harming the timber, and informing and educating people about their important responsibilities in protecting local forests. Where the pressure on forest resources is high, forest owners pay even more attention to protection (Box 6). Few managing boards and SFEs pay much attention to poverty alleviation; the most that they can do to help local people improve their livelihoods is to provide forestry jobs and permission to use NTFPs. Overlapping claims to forest resources are not rare (Box 3), and local people often use forest under State enterprise ownership for their own livelihoods, particularly where there is market demand for forest products such as timber and NTFPs (Box 6) or where the pressure on land is high (Nguyen, 2005b).

BOX 6 Forest protection in Ea H'leo State Forest Enterprise, Dak Lak province

Ea H'leo SFE was set up in 1992, based on a forest resource exploitation brigade. The SFE has three main tasks: to manage, protect and develop the allocated forest resources; to carry out agricultural and forest production and commercialization; and to harvest and process forest products. It was allocated 32 700 ha of forest – 22 500 ha of which is natural forest – in three communes as fixed assets. Of this area, 12 700 ha is protection forest and 20 000 ha production forest. Ea H'leo SFE has 24 staff members.

Forest protection is considered to be the most important activity of Ea H'leo SFE. Since its establishment, the enterprise has established three branch offices in three communes, each of which has a staff of four. The main task of the branch offices is to detect and penalize the illegal use of forest resources – forest land, timber and NTFPs. In recent years, the expansion of pepper cultivation has led to increasing demands for timber poles, resulting in high pressure on timber collection from the forest. The forest protection task of branch offices has therefore been strengthened, and their daily activities focus on patrolling the forest under their responsibility and monitoring the use of local forest resources. In addition, local SFE staff help local villages to develop village forest protection regulations and evaluate the implementation of these. In cooperation with communal authorities, the SFE carries out awareness raising and information activities on the importance of forest protection. It has drawn up forest protection contracts with 65 households to protect 5 000 ha of forest under Programme 327.

Other activities performed by Ea H'leo SFE include exploitation and processing of round logs, enrichment of natural forest, plantation of protection forest (through contracts with local people) and plantation and tending of tree crops (rubber and coffee).

Sources: Lam Truong Ea H'leo, 2002; Nguyen, 2005b; Ea H'leo SFE leadership and staff, personal communications.

The balance between sustainable forest management and poverty alleviation can be better observed in forest management under individual household ownership. Recent experimental forest devolution programmes have granted individual households natural forest with long-term RBCs. Similar to organizational owners, the individual owners of forest under private property have to protect their allocated forest against unauthorized appropriation of resources, plant forest where needed, and use the forest for their own benefit. Individual owners have followed diverse courses of action since forest devolution; some rush to obtain material benefits from the forest (Nguyen, 2005b), while others concentrate more on fulfilling their responsibilities. Box 7 gives an example of forest management by individual households in two districts of Quang Binh province where, despite technical problems during the devolution process, people have developed the forest resources on their allocated land. Forest plantation takes time (at least five to seven years for fast-growing trees), so local people's investment in tree planting after devolution implies their certainty of tenure security. Forest devolution has given people a chance to improve their livelihoods in the long term, while improving forest conditions. Other factors that have contributed to this outcome include a buoyant market for pulp materials and the province's strategy of subsidizing seedlings for forest plantations.

BOX 7

Forest management by individual households in Quang Binh province

Between 1998 and 2002, with support from the Integrated Food Security Project, more than 40 000 ha of forest land was allocated to more than 11 000 households in 16 communes of the Minh Hoa and Tuyen Hoa districts of Quang Binh province. Forest devolution at such a large scale was very progressive at the time, considering the political uncertainty about the allocation of forest land to local stakeholders. Forest land allocations were distributed equally among the individual households, which received narrow strips of forest stretching from the foothills to mountain ridges; in some cases, allocations were split into two or three smaller areas at different locations. However, the consequences for forest management were not taken into account during the forest devolution process, and most local households can identify the boundaries of allocated barren land, but not allocated forest area.

Very few conflicts have broken out since the allocation of forest land, but there is an inherent potential for conflict concerning specific forest land allocations. At present, there are no conflicts about allocated natural forest because of the open-access situation that resulted from forest owners' inability to identify the boundaries of their forests. Even when the boundaries of individual plots of natural forest can be distinguished, households are unlikely to have sufficient resources to manage and protect their forests individually.

Local households of all economic statuses have planted forest trees on the allocated barren and shrubland. Major plantation species are Acacia (including *A. mangium* and *A. auriculiformis*), Cinnamon and Eucalyptus. Acacia seedlings were provided free of charge by a provincial programme to assist local communities in establishing short-rotation plantations for livelihood improvement. However, no technical training was offered, resulting in poor-quality plantations. Eucalyptus seedlings were purchased at low prices from nurseries in other districts. Timber from the plantations can be sold to the provincial paper factory. The tree planting induced a high demand for seedlings, despite the province's provision of Acacia seedlings, and some households have set up their own nurseries, producing mostly Acacia and Eucalyptus. Although the seedlings from these private nurseries are of low quality, the nursery owners are still able to sell them to local households.

Sources: Roth, 2005; Marianne Meijboom and Vu Van Manh, the Sustainable Management of Natural Resources in Central Viet Nam (SMNR-CV), personal communications.

Of the tenure systems under review, the management of forest as common property appears to address poverty alleviation most effectively. Although this tenure system has only recently been formally recognized by law, trials and experiments have taken place in several parts of the country and common property sometimes dominates over private property for forest management and poverty alleviation. In Dak Lak, for example, the provincial forest devolution programme gave 139 ha of forest to nine households in a village of 108 households. Less than two years later the results of an assessment showed that community management may be a more appropriate type of forest management in this village (Pham *et al.*, 2003), and the village proposed managing the forest as common property. The proposal was approved and the village was given a new patch of forest. Village regulations for forest management were then established with the agreement of all members. The villagers also set up four forest protection teams, each divided into three groups for patrolling and monitoring the use of the forest. The protection teams have been able to exclude unauthorized loggers (16 cases) and confiscate logging materials. The village has allowed its members to collect timber to fence gardens (Huynh, 2004; Dang Thanh Liem, Rural Development Project, Dak Lak, personal communication).

Another example of managing forest as common property is described in Box 8. A village was given ownership of a forest under an experimental programme in 2000 and established village regulations on forest protection and development. These specify the rights and responsibilities of members, paying particular attention to poor and disadvantaged people in the village. Five years after this devolution, the villagers are able to protect their allocated forest while benefiting from it.

BOX 8

Managing forest as common property in Thuy Yen Thuong, Thue Thien Hue province

In 2000, with support from the PROFOR project of MARD and Thua Thien-Hue Forest Development Department, an agreement was made for the experimental management of a natural forest area by Thuy Yen Thuong village in Loc Thuy commune.

The village is located near the forest, 13 km southeast of the centre of Phu Loc district, with good transportation and communication systems. At the time the agreement was made, the village had 252 households with 1 860 inhabitants, 856 of whom were labourers (97 percent in the agriculture sector). Under the project, a village management board was set up consisting of the village chief and two vice chiefs, who are trusted and respected by fellow villagers.

In the past, villagers were members of an agriculture cooperative that ran tourist activities along Tien River with other organizations. This business was promising and helped to raise local people's awareness of the importance of forest protection. Local people also planted forest to meet their own timber and fuelwood needs, and by 2000 the village had more than 250 ha of plantations. However, many local people from within and outside the village were still trying to make a living from unauthorized logging in the local forest. In 1998, Thuy An Forest Protection Unit was set up near the village, and staff of this unit helped villagers with technical forestry problems related to nursery, tree planting, the tending of plantations, etc. Villagers became better aware of the environmental effects of deforestation after a big flood in 1999.

The village was selected as a test case for community forest management with the objectives of eliminating hunger, alleviating poverty and enabling the local community to enrich itself from the forest. The forest to which the management agreement applied was the best-quality section of an area classified as essential watershed protection forest located in a remote area with difficult access. It covered a total area of 405 ha of medium- to rich-quality forest with an average timber volume of 76 m³ per hectare. The village was to protect the forest for a test period of three years after which – as long as its performance was satisfactory – it would be given the forest along with an RBC (for details of the agreement, see Vo, 2000: 3-8). See Annex 2 for the village regulations.

The trial was successful. Both the provincial FPD and the Forest Department evaluated the village's performance in managing the forest as very good, and an official evaluation of forest land allocation was planned for the second half of 2005. The forest has been well protected, and local people have benefited from it. By mid-2005, a plan to harvest 90 m³ of timber from the allocated forest had been approved and logging activities were put in progress.

Sources: Phu Loc Forest Protection Unit, 2000; Vo, 2000; Tran Huu Banh, Director Thua Thien Hue Forest Department, personal communication.

PEOPLE MANAGING FOREST – A WAY FORWARD?

Viet Nam's forest sector has been starting to involve different actors in the management of forest resources. The policy and legal framework have been adapted in order to recognize different forms of forest tenure, among which the balance between forest management and poverty alleviation varies. Although improved incomes and the creation of employment for forest-dependent people have been incorporated as objectives in the forestry development strategy (MARD, 2001a), the management of forest resources as State property is still a common arrangement, and forest protection and development remain major targets for the forest sector. Although the legal framework has started to adapt to changing trends in forest management, forest policies in Viet Nam are still strongly protection-oriented. Because of their importance in conserving and protecting resources, habitats, species, biodiversity, watersheds and other important environmental values, protected areas under State management appear to have more important environmental implications than forest under other management arrangements. Sustainable forest management is therefore an important target under State management, and organizations managing forest as State property have to protect and develop their allocated forest areas for conservation and environmental purposes. In fact, most of the forest areas under State management are classified as protection and special-use forests. Community development to improve the livelihoods and reduce the poverty of forest people is recognized as a condition for sustainable forest management, but only insofar as it serves forest protection purposes.

Under private property, forest owners are bound by responsibilities and tasks attached to the forest they are given. In purely economic terms, private forest owners can be compared to private firms whose activities are directed to their own goals; for forest owners, one of these goals is to prevent the forest from being taken back by the State.⁹² This applies particularly to organizational

⁹² By Vietnamese law, the State retains the right to take back any land (and forest) if its owner appears to be neglecting or abusing it, as specified in the land-use title.

owners (e.g., private and State enterprises), in whose production strategies forest land allocated by the State is an important asset. Although some forest enterprises pay attention to income generation and livelihood improvement for local people, the extent to which forest management by SFEs contributes to poverty reduction is very limited.

When local people are the owners, the management of forest as private property contributes more to livelihood improvement and, to a certain extent, poverty alleviation than it does with organizational owners. However, additional factors need to be present for forest management by local households to contribute to poverty alleviation. The benefits that a household derives from its forest depend not only on its legal rights to the forest but also on its ability, and poor households need help in strengthening their ability to benefit from forest. Another important factor is market conditions. Without available markets for forest products, it is difficult for poor rural households to generate cash income from their plantations. If they are to contribute to poverty alleviation, any factors that improve local livelihoods must be accompanied by activities to strengthen the abilities of poor rural people. When poor people lack the capacity to make use of favourable conditions, any livelihood improvement risks widening the economic gap between rich and poor, as the former are better able to make use of emerging opportunities, thereby becoming richer.

Forest can contribute to poverty alleviation when forest benefits are distributed through a mechanism that considers the poorer members within the community. Practical experience in Viet Nam and other countries shows that communities are able to regulate the viable use of forest resources and the equitable distribution of forest benefits among their members, thereby enabling the poor and disadvantaged groups to benefit. Box 8 illustrates how communal forest management can help the poor; the management of forest as common property was proven to be appropriate. In the Box 8 example, there were specific conditions that helped collective forest resources management. First, villagers shared a common understanding of the importance of forest, and the occurrence of a severe flood in 1999 had increased their awareness about the need to protect forest for their own livelihoods. Second, the State supported the villagers' realization of their new rights and responsibilities by establishing a local forest protection office, which also supplied technical advice about forest tending and maintenance. Third, the village was confident about its ability to protect and benefit from the forest and was willing to experiment with the new form of management. Fourth, the village was given a certain level of autonomy within which it could decide what to do regarding, for example, the distribution of benefits and the exclusion of outsiders. Fifth, the villagers were clear about their rights and responsibilities (costs and benefits) in participating in the experiment. All these conditions made for successful management of the allocated forest as common property in Thuy Yen Thuong.⁹³

The forest monitoring system follows standardized forms regulated by Decision 78/2002/QD-BNN, but the structure of these forms is not sufficiently flexible to reflect various groups of forest owners at the local level (Annex 6). With changing trends in forest management and the presence of various experimental forms of management at the local level, many provinces find it difficult to categorize all the different types of forest owner according to the limited number of columns on the forms. FPD has revised the forms, but they still fail to capture all the local variations. Resource monitoring appears to work better in provinces where there is less variation (e.g., fewer types of forest ownership) than in those with great diversity. In Son La, for example, there are ten specific groups of owner: individual households, household groups, communities (villages), mass organizations (e.g., women's unions and youth unions), schools, State agroforestry enterprises, army units, MBSFs, the Department of Agriculture and Rural Development (which manages the protection forest while MBPFs are set up), and other forestry organizations. The limit of eight groups of owners on the monitoring form requires the aggregation of forest data to fit the form.

Regarding the implications of forest devolution on different stakeholders, experiences in Viet Nam show that although there are variations across different locations, local households generally achieve (or have the potential to achieve) higher economic benefits from forest resources after devolution (Nguyen, 2005b). However, forest devolution also implies additional costs (mostly in terms of labour for forest protection) for participating households. For local households that are not

⁹³ These conditions can be compared with the seven important attributes of resource users for successful collective action, as discussed by Ostrom (1999): salience, common understanding, discount rate, distribution of interest, trust, autonomy, and prior organizational experience.

forest owners, devolution does not change their legal position regarding the use of the devolved forest resources, and such households continue to have no legal rights to utilize the forest, as under State forest management. For the State, budget for forest protection (in the case of protection forest) can be saved after devolution.⁹⁴ Because most of the allocated forests are of low to medium quality, and are not in production, SFEs do not suffer from the reduced area of forest land under their management. Immediately after devolution, SFEs save the labour that would have been needed to protect the forest, while local authorities incur the increased costs of personnel to deal with forest management issues raised by local people (Nguyen, 2005b: 163–166 for the case of Dak Lak).

The discussion in this paper indicates that forest management in Viet Nam is complex. It is hard to say which management arrangement works best at the country level in support of sustainable forest management and poverty alleviation. No single solution works in all conditions and for all purposes. The most suitable forest management arrangement for a specific forest depends on the type of forest and the socio-economic, biophysical, cultural and political conditions. In areas of critical importance for environmental and other purposes, State management appears to be more suitable than other tenure arrangements. In less critical protection or in production forest, management by local people (in either collective or individual form) may be a more suitable option for achieving both sustainable forest management and poverty alleviation objectives. The specific form of people's management that is most suitable for a given situation also needs to be viewed in terms of the local context. In general, where local conditions support the management of forest as common property (Ostrom, 1999), forest management by the community may be more suitable than management by individual households because of the community's collective strengths in equitably distributing forest benefits among its members and in helping poor and disadvantaged members.

⁹⁴ Except for in Son La, where local households continue to receive funds for protecting the allocated forest.

Proposals for the way forward

Over the last two and a half decades, the forest sector of Viet Nam has undergone radical reform. Changes in forest management were driven by a rapid decline in the national forest area during the decade after unification, the ineffectiveness of the SFE system as the main manager of forest, the State's recognition of local people's important role in forest management, and the successful reform of the agriculture sector in the late 1980s. The reform represents great advances for the Vietnamese forest sector in improving forest cover and involving different stakeholders, particularly local people, in the management of forest resources. As a result of the reform, State-owned forest enterprises are no longer the only managers of forest, and different forest tenure arrangements have gradually been introduced.

At present, throughout the country, about eight major groups of forest owners have been identified, managing forest under three property regimes: State property (State organizations managing forest for environmental and conservation purposes); private property (organizations and individual households managing forest for commercial, production and protection/environmental purposes); and common property (groups of households or communities managing forest for production and protection/environmental purposes). Forest management under contractual arrangement is also present. SFEs, MBPFs, MBSFs, individual households, collectives and PCs are the six largest forest owners, managing more than 97 percent of the total forested area in Viet Nam. The remaining forest is managed by joint venture enterprises and army units.

In terms of improved local livelihoods and poverty alleviation, the paper has shown that people's management of forest resources appears to be more effective than forest management by any other owners. This reflects changing trends in current forest policies and legislation towards more and better involvement of local people, along with other actors, in managing forest resources. Various legal documents demonstrate the State's intention to reduce the area of forest under management by State organizations. For example, Prime Minister's Decision 187/1999/QD-TTg specifies that SFEs should survey their existing forests and give "unproductive" areas back to local authorities for allocation to the people.

The legal framework has to adapt to the changing trends in forest management. Various policy and legal documents have been issued to legalize and guide the management of forest by different actors. At present, two major issues remain to be addressed. First, changes to the policies and legislation have been made too quickly over the last decade and a half. For example, three important documents specifying regulations regarding the benefits and obligations of forest owners were issued within less than four years. While on the one hand these quick changes to the legal framework reflect policy-makers' rapid response to changing trends, on the other hand they create confusion for both the local agencies responsible for implementing laws and the people. Another issue is the complexity of legal documents. Many policies made at the national or provincial level are incomprehensible to the local officials who implement them, not to mention local people. MARD (1998; 1999) shows that even the district staff who implement forest land allocation policies are not clear about the rights of land users. Decision 178/2001/QD-TTg is an example of a complicated policy. It is meant to regulate the entitlements and obligations of forest owners, but the calculation of benefits for specific owners is extremely complicated. This results in slow implementation and confusion in the field that lasts for several years after promulgation. The language used in policy documents also contributes to their complexity. Legal documents make much use of forestry jargon, which is difficult to understand even for experts from other fields, let alone local people.

Forest planning and monitoring systems have also been adapted to changing trends in forest management. FIPI has been assigned the responsibility for technical issues in forest planning and FPD is responsible for annual forest monitoring. FIPI also conducts an inventory of forest resources every five years. Both organizations, particularly FPD, have tried hard to adapt to the current changes, but important issues must still be dealt with to make forest planning and monitoring systems work better in the changing environment. The most important of these is coordination between the forest planning system and the forest monitoring system. At present, the two systems exist independently and there is little, if any, data and experience exchange between them. This creates overlapping work and incurs extra costs, which could be saved by better coordination. In addition, outputs from the two systems may be inconsistent and confusing to users. Another issue relates to the approach of both systems, which at present is rather top-down, resulting in limited participation of local people in forest planning and inflexibility in forest monitoring.

Given the changing trends in forest management in Viet Nam over the last two decades and based on comparative analysis of forest management under different tenure arrangements and by different owner groups, it is proposed that forest management in Viet Nam in the future move towards the greater involvement of local people – particularly local indigenous communities. To facilitate the changing trends in forest management further and to increase forest management's contribution to poverty alleviation, the following are recommended.

POLICY AND LEGISLATION

It is recommended that policy regarding the management of protection and special-use forests be better balanced between protection on the one hand, and livelihoods and poverty alleviation on the other. In areas of forest where strict protection is needed for conservation and environmental purposes, local people should be offered alternatives for their foregone use of the forest resources on which their livelihoods depend. In other words, people living in protected areas should be rewarded for the environmental services generated by the forest that they have to refrain from using. Currently, 5MHRP pays D50 000/ha per year for the protection. Alternatively, under 5MHRP, forest can also be contracted to a community, and the poor can obtain a share of the benefits of this. Other payment schemes, such as food subsidies, should be made available for local people to choose from, and funding sources for these schemes should be extended. Currently all funding comes from the State budget, but additional sources could include international donors and downstream users of the environment in Viet Nam and around the world.

In production forests or protection forests where strict protection is not required, initiatives should be taken to involve more local people in managing the forest and benefiting from it. It is recommended that forest management be devolved and local people be given tenure rights to forest resources. Whether forest be given to individual households or a community for management should be considered in consultation with local people, taking into account the biophysical, cultural, socio-economic and historical setting of the village. The form of devolution should not be decided until these conditions have been fully taken into account. Forest devolution should be demand-oriented to avoid imposition from outside the village.

To promote community forest management, the State needs to provide assistance with its formation and operation. For community forestry, the most important area where State assistance is needed is in strengthening communities' power to realize their rights, which can be achieved through clear guidance on the structure to be set up and run at the community level, frequent back-up visits from local forest officials, and early response to communities' requests for help. CFWG is working on guidelines to help the future development of community forestry, including providing clear instructions on communities' rights, responsibilities and options. The language of guidelines should be simple and clear so that local people can understand and follow them. In addition, it is recommended that the legal framework recognize the rights of communities to mortgage their forest RBCs for loans and to use their forests in joint venture undertakings, as these two rights will help communities to communities their forests better.

In order for forest devolution to contribute more to poverty alleviation, it is recommended that devolution be followed by the implementation of capacity improvement programmes, and that poor and disadvantaged households/villages be given priority in obtaining access to these programmes. Because the poor are often unable to use the opportunities for achieving the economic benefits that devolution brings, strengthening of their ability to benefit from forest devolution will enable them to emerge from poverty.

It is recommended that policies and legislation be more concrete and easier to understand. Ordinary language should be added when forestry jargon is used, and important legal documents should be transcribed into simple language with concrete messages for distribution to rural (upland) people. Policies and legislation should also be more stable so that local people can keep abreast of the current policy framework.

FOREST PLANNING AND MONITORING

It is strongly recommended that the forest planning and monitoring systems be harmonized; MARD should take the lead in this. Responsible people from FIPI, FPD and MARD should work out the general structure of a single planning and monitoring system, based on the two existing systems. The responsibilities of each organization and the standard operating procedures should also be agreed.

It is recommended that a participatory approach be consistently applied to forest planning, to ensure that plans reflect the different interests of all stakeholders. In addition, a comprehensive master plan for the whole nation is needed to guide forest planning in the regions and provinces.

A more flexible forest monitoring structure is recommended. This should be able to capture the diversity of conditions and forest owners at the local level, while allowing concise summaries of data at the national level. In other words, the structure should allow the aggregation of detailed data and the disaggregation of summary data. To make this easier, data sets should be divided into sub-sets and divided again to a maximum of four levels so that data can be aggregated by adding up the sub-set, while variations across locations are captured. In addition, the structure should be flexible so that new variables can be added without the whole system having to be revised.

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ANNEX 2: EXAMPLE OF THUY YEN THUONG VILLAGE REGULATIONS

Regulations on Forest Protection and Development in the Community of Thuy Yen Thuong Village

Based on Law on Forest Protection and Development dated 12 August 1991.

Based on Directive of the Prime Minister 24/1998/CT-TTg dated 19 June 1998 concerning preparation and implementation of rules, regulations and agreements at the village level.

Based on results of meeting in Thuy Yen Thuong village.

We hereby agree with the following village regulations on forest protection and development and pledge to implement the contents:

Part I: What has to be done:

Follow the orientations and policies of the Communist Party and of the State. Implement State regulations on forest protection and development in a serious manner.

Actively participate in the protection of the area of forest allocated to the village. Implement the regulations on fire prevention and extinguishing in a serious manner. Upon notice, immediately report to the village, local forest protection official or Communal People's Committee (CPC) any forest fire and participate in extinguishing the fire. Before starting any fire on cleared vegetation for forest plantation or on fields near the forest, inform the village or local forest protection unit for inspection.

Uncover and report people involved in unauthorized exploitation, transaction and transportation of forest products and in damaging forest products. Participate in taking these people into custody and handing them over to the village or competent organizations for settlement.

Part II: What is permitted

- Receive land for forest plantation and forest for protection. Participate in activities related to production and forest protection organized by the village or CPC.
- Raise cattle under the forest canopy in accordance with current regulations.
- Improve household economic situation through agroforestry production.

Part III: What is encouraged

Apply technical and scientific advancements, intensively invest in forest plantation, forest tending and protection, create good forest tending model for other households in the village to learn from.

Survey *in situ* flora species. Produce seedlings of *in situ* species for planting in existing Acacia and Eucalyptus forest plantations.

Set up a 15 ha plantation on the hill where the spring emerges to create a village welfare fund. All members of the village are requested to respect the following regulations:

Every household will participate in tree planting festivals or New Year's tree planting days with a minimum quota of 20 trees per capita.

Each newly wedded couple will plant 100 trees. For every child born, the couple will plant 50 trees in the village plantation.

Every student finishing secondary school will plant 50 trees and every student finishing high school will plant 100 trees.

The road from An Bang village to Ba dam will be named "the road I love" and will be cared for by the young pioneers. Divisions of 250 to 300 m in length will be made and each road segment will be assigned to children of An Bang village, naming from one through ten. At the New Year's tree planting, each child will plant ten trees on the two sides of the road.

- . In addition, on being mobilized, each household will contribute five labour days for tree planting, tree tending and the construction of village social welfare works. Any household that does not contribute labour will pay D20 000 for each day of labour.
- . Set up an action team with members from village youth led by the head of the village youth union to take care of forest protection and village security.

Part IV: What must not be done

- . Exploit, transport, transact, store and use timber and other forest product illegally.
- . Hunt, trap and use wildlife illegally.
- . Use dynamite or electricity to catch aqua products from springs in the forest area.
- . Use dynamite to exploit rock, excavate land causing landslides and damage the land.
- . Clear forest and use fire in the forest for cultivation purpose; burn forest for charcoal under any form.
- . Use fire carelessly in the forest, use fire to scare bees for honey, use fire to burn trees for fuelwood and look for materials from the war.
- . Encroach land classified for plantation or land that belongs to other people, leading to land conflict.

Part V: Rights of the community and the villagers

- . Entitled to own products from forest plantation, other products from forest protection. Free to trade these products.
- Entitled to State policies that apply to people living near forests.
- Entitled to village selection for proposal to the State concerning permission to exploit and use timber and other products according to the following priorities:

a. On targets:

Collective: priority is given to works that serve production purposes, such as irrigation, agricultural production tools, construction or maintenance of nurseries.

Households:

Households that are the targets of social policy and are facing problems with housing and timber furniture.

Poor households who participate in forest protection and development and who are selected by local people.

Other poor households in the village.

b. On purposes:

Timber for coffins.

Timber for production and social welfare.

Timber for domestic use.

The quantity of timber that households or collectives are entitled to follows the forest land allocation plan approved by the PPC.

Part VI: Responsibilities and rights of the village

Responsibilities:

Guide and direct local households in the implementation of regulations and in forest protection and development work.

Organize conflict resolution and information briefings for those who violate the village's forest protection and development.

Find examples of good people and good deeds in forest protection and development,

and request recognition of merit from high level.

Rights:

Organize prevention and prepare records of violations of forest protection and development regulation, in particular, and of the law, in general. Report to higher level for resolution.

Refuse or accept proposals for exploitation of timber and forest products by local households.

Request the violator to provide compensation in labour days and value of damage to the victim.

Organize periodical (monthly) or occasional meetings to evaluate the situation and criticize individuals or households that violate village regulations.

Part VII: Awards and Penalties

Awards:

Households and individuals who implement forest protection and development work and the village regulations well will not only be praised by the villagers but will also be recommended to the State for compliments and priority in obtaining permission to exploit timber and forest products.

Penalties:

Households and individuals who violate the regulations will not only be judged by law but also be subject to the following penalties:

Mandatory compensation to the victim in addition to a fine of five labour days to tend and protect the village's forest.

Ineligibility for village proposal for the exploitation of timber and forest products during the period the sentence is applied.

Public criticism and reproach. Repeated violations will lead to ineligibility for participation in village traditional activities.

Part VIII: Provisions for implementation

These regulations apply to all members of the village and will be in effect on the day they are approved by the District People's Committee.

The regulations will be made available to all people in the village for implementation.

Certified by the Loc Thuy CPC village

Representatives of Thuy Yen Thuong

ANNEX 3: SELECTED ARTICLES FROM THE LAW ON FOREST PROTECTION AND DEVELOPMENT

This law was passed by the Eleventh National Assembly of the Socialist Republic of Viet Nam at its sixth session on 3 December 2004. (Unofficial translation from MARD International Support Group: available at: www.isgmard.org.vn.)

Article 4. Forest classification

Based on their major use purposes, forests are classified into three following kinds:

1. Protection forests, which are used mainly to protect water sources and land, prevent erosion and desertification, restrict natural calamities and regulate climate, thus contributing to environmental protection, including:

- a) watershed protection forests;
- b) wind and sand break protection forests;
- c) protection forests for tide shielding and sea encroachment prevention;
- d) protection forests for environmental protection.

2. Special-use forests, which are used mainly for conservation of nature, specimens of national forest ecosystems and forest biological gene sources; scientific research; protection of historical and cultural relics and landscapes; recreation and tourism, in combination with protection, contributing to environmental protection, including:

- a) national parks;
- b) nature conservation areas, including nature reserves and species conservation areas;
- c) landscape protection areas, including forests of historical or cultural relics and scenic landscapes;
- d) scientific research and experiment forests.

3. Production forests, which are used mainly for production and trading of timber and non-timber forest products in combination with protection, contributing to environmental protection, including:

- a) natural production forests;
- b) plantation production forests;
- c) seeding forests, including selected and recognized planted forests and natural forests.

Article 5 Forest owners

1. The protective forest or special use forest management boards that are assigned forests or land by the State for forest development.

2. Economic organizations that are assigned or leased forests or land by the State for forest development or that have forest use rights and ownership rights over planted production forests recognized by the State or are transferred with such rights.

3. Domestic households and individuals that are assigned or leased forests or land by the State for forest development or that have forest use rights and ownership rights over planted production forests recognized by the State or are transferred with such rights.

4. People's armed force units that are assigned forests or land by the State for forest development.

5. Organizations involved in forestry-related scientific research and technological development, training or vocational training that are assigned forests or land by the State for forest development.

6. Overseas Vietnamese nationals investing in Viet Nam and assigned or leased forests or land by the State for forest development.

7. Foreign organizations and individuals investing in Viet Nam and leased forests or land by the State for forest development.

Article 6 The State's rights over forests

1. The State uniformly manages and disposes of natural forests and forests developed with the State's capital, forests being planted forests over which the ownership right has been transferred from forest owners to the State; forest wild animals; forest micro-organisms; forest landscapes and environment.

2. The State exercises the right to dispose of the forests prescribed in Clause 1 of this Article as follows:

- a) to decide on forest use purposes by approving and deciding on forest protection and development planning and plans;
- b) to stipulate forest assignment quotas and forest use terms;
- c) to decide forest assignment, lease and recovery and to permit the change of forest use purposes;
- d) to valuate forests.

3. The State regulates forest benefit sources through the following financial policies:

- a) collecting forest use levies and forest rents;
- b) collecting tax on forest use right transfer and transfer of the ownership right over planted production forests.

4. The State renders forest use rights to forest owners in the forms of forest assignments, forest leases, recognition of forest use rights or ownership rights over planted production forests; and prescribes forests owners' rights and obligations.

Article 30. Rights and obligations of village communities with assigned forests

1. Village communities with assigned forests shall have the following rights:

- a) To have their forest use rights recognized by competent State bodies for stable and long-term forest assignment terms.
- b) To exploit and use forest products and other forest yields for public purposes and domestic use for community members; to conduct combined forestry/agriculture/fishery production according to this law's provisions and forest management regulations.
- c) To enjoy the fruits of their labour and investment from the assigned forest areas.
- d) To be provided with technical guidance and capital support according to the State's policies for forest protection and development and to benefit from forest protection and improvement works.
- e) To be compensated for their labour and investment for forest protection and development according to the provisions of this law and other relevant provisions when the State issues forest recovery decisions.
- 2. Village communities with assigned forests shall have the following obligations:
 - a) To formulate forest protection and development rules compatible with this law's provisions and other relevant provisions, submit them to the People's Committees of rural or urban districts, provincial towns or cities for approval and organize the implementation thereof.
 - b) To organize forest protection and development, periodically report to competent State agencies on changes of forest resources and activities related to forests under the guidance of commune/ward/township People's Committees.
 - c) To fulfil financial obligations and other obligations under law provisions.
 - d) To return forests when the State issues forest recovery decisions or at the end of the forest assignment term.
 - e) Not to divide forests among their members; not to convert, transfer, donate, lease, mortgage, provide guarantee or contribute business capital with the value of the use rights over the assigned forests.

Chapter V: RIGHTS AND OBLIGATIONS OF FOREST OWNERS: Section 1. General provisions on the rights and obligations of forest owners

Article 59. Common rights of forest owners

1. To have their forest use rights and the right to use planted production forests recognized by competent State agencies.

2. To use forests for a stable, long-term forest assignment or lease term, as well as the land assignment or lease term.

3. To combine forestry/agriculture/fishery production according to the forest management regulations, except for special use forests.

4. To enjoy the fruits of their labour and investment in the assigned or leased areas; to sell such fruits and results to others.

5. To combine scientific research, landscape business, convalescence and eco-environmental tourism according to projects ratified by competent State bodies.

6. To be compensated for their labour and investment for forest protection and development according to the provisions of this law and other relevant provisions when the State issues decisions to recover forests.

7. To be provided with technical guidance and capital supports according to the State's policies on forest protection and development and to benefit from the public works of forest protection and improvement.

8. To have their legitimate rights and interests related to the assigned or leased forests protected by the State.

Article 60. Common obligations of forest owners

1. To conserve forest funds and develop forests in a sustainable manner; to use forests for the right purposes within the boundaries defined in the forest assignment or lease decisions and according to the forest management regulations.

2. To organize forest protection and development according to the approved planning, plans, projects and schemes.

3. To report periodically to competent State bodies on forest resource developments and activities related to forests according to the provisions of Clause 2, Article 32 of this law.

4. To return forests to the State when the latter issues decisions to recover forests or when the forest use terms expire.

5. To fulfil financial and other obligations according to law provisions.

6. To observe the provisions of this law and other provisions; not to cause harms to legitimate interests of relevant organizations and individuals.

Section 2. Rights and obligations of forest owners being management boards of special use or protection forests

Article 61. Rights and obligations of special use forest management boards

1. To have the rights and obligations prescribed in Articles 59 and 60 of this law.

2. To be assigned forests under package contracts according to forest protection and development plans approved by competent State bodies and the government's regulations.

3. To lease forest landscape to economic organizations for commercial eco-environmental tourism under projects ratified by competent State bodies.

4. To conduct or cooperate with organizations and scientists in conducting scientific research according to plans approved by competent State bodies.

5. To organize international cooperative activities within the ambit of their tasks and powers.

6. To formulate and organize the implementation of forest protection rules.

7. To elaborate and submit to competent State bodies for approval forest management, protection and development schemes and implement the approved schemes.

Article 62. Rights and obligations of protection forest management boards

1. To have the rights and obligations prescribed in Articles 59 and 60 of this law.

2. To exploit forest products in protection forests according to the provisions of Article 47 of this law.

3. To exploit forest products according to the provisions of Clause 2, Article 55, Points b and d of Clause 2, Point a of Clause 3 and Clause 4 of Article 56 and Clause 2 of Article 57 of this law on production forest areas intermingled in the protection forests assigned to them.

Section 3. Rights and obligations of forest owners being economic organizations

Article 63. **Rights and obligations of economic organizations assigned production forests being seeding forests by the State without the collection of forest use levies**

1. To have the rights and obligations prescribed in Articles 59 and 60 of this law.

2. To sell products of seeding forests and forest saplings according to the forest management regulations.

3. To mortgage, provide guarantee or contribute capital to the value of production forests planted with their own capital.

4. Not to convert, transfer, donate or lease forests or forest use rights; not to mortgage, provide guarantee or contribute capital with the value of the right to use natural production forests or production forests planted with capital of State budget origin.

5. The production and trading of forest saplings must comply with the legislation on plant varieties as well as with legislation on forest protection and development.

Article 64. **Rights and obligations of economic organizations assigned production forests by the State with the collection of forest use levies or transferred with production forests**

1. In cases where the paid forest use levies or forest transfer money amounts originate from the State budget, forest owners shall have the following rights and obligations:

- a) To have the rights and obligations prescribed in Articles 59 and 60 of this law.
- b) To enjoy the added value of forests; to exploit forest products in production forests according to the provisions of Clause 2 of Article 55, Points b and d of Clause 2, Point a of Clause 3 and Clause 4 of Article 56 and Clause 2 of Article 57 of this law.
- c) To lease forests to organizations, households or individuals for combined forestry/agriculture/fishery production, landscape business, convalescence, eco-environmental tourism and scientific research according to the forest management regulations.
- d) Not to convert, transfer or donate the rights to use or own planted production forests.
- e) To mortgage, provide guarantee or contribute capital with only the added value of forest use rights, brought about by the forest owners' investments as compared with the value determined at the time of forest assignment.

2. In cases where the paid forest use levies or forest transfer money amounts have not originated from the State budget, forest owners shall have the following rights and obligations:

a) To have the rights and obligations prescribed in Articles 59 and 60 of this law

- b) To enjoy the added value of forests; to exploit forest products in production forests according to the provisions of Clause 2 of Article 55, Points b and d of Clause 2, Point a of Clause 3 and Clause 4 of Article 56 and Clause 2 of Article 57 of this law.
- c) To transfer forest use rights and the ownership right over planted production forests; to mortgage, provide guarantee or contribute capital with the value of forest use rights and the value of planted production forests.
- d) To lease forests to organizations, households or individuals for combined forestry/agriculture/fishery production, landscape business, convalescence, eco-environmental tourism and investment in scientific research according to the forest management regulations.

Article 65. **Rights and obligations of economic organizations assigned protection forests by the State**

1. To have the rights and obligations prescribed in Articles 59 and 60 of this law.

2. To exploit forest products in protection forests according to the provisions of Article 47 of this law.

3. Not to convert, transfer, donate or lease the rights to use protection forests assigned by the State.

Article 66. Rights and obligations of economic organizations leased production forests by the State

1. To have the rights and obligations prescribed in Articles 59 and 60 of this law.

2. To exploit forest products in production forests according to the provisions of Clause 2 of Article 55, Points b and d of Clause 2, Point a of Clause 3 and Clause 4 of Article 56 and Clause 2 of Article 57 of this law.

3. To own trees, animals and property associated with the planted forests invested by forest owners during the lease term.

4. To mortgage, provide guarantee or contribute capital with only the added value of forest use rights brought about by forest owners' investments compared with the forest use right value determined at the time of forest lease according to law provisions.

Article 67. Rights and obligations of economic organizations leased protection forests or special use forests being landscape protection areas by the State

1. To have the rights and obligations prescribed in Articles 59 and 60 of this law.

2. To exploit forest products in leased protection forests according to the provisions of Article 47 of this law.

3. To exploit forest products in special use forests being landscape protection areas according to the provisions of Article 51 of this law.

Article 68. Rights and obligations of economic organizations assigned or leased afforestation land by the State

1. Economic organizations assigned land by the State to plant production forests or protection forests with non-State budget capital shall have the following rights and obligations:

- a) To have the rights and obligations prescribed in Articles 59 and 60 of this Law.
- b) To own forest trees, animals and property on the land planted with forest.
- c) To exploit forest products according to the provisions of Clause 3 and Clause 4 of Article 47 and Clause 2 of Article 57 of this law.
- d) To transfer, lease or donate land use rights; to mortgage, provide guarantee or contribute capital with land use rights according to the provisions of land legislation.

- e) To transfer, donate, lease or donate the value of planted production forests.
- f) To join domestic organizations, households or individuals as well as overseas Vietnamese nationals by contributing capital with the value of planted production forests.

2. Economic organizations leased land by the State to plant production forests or protection forests shall have the following rights and obligations:

- a) To have the rights and obligations prescribed in Articles 59 and 60 of this Law.
- b) To own forest trees, animals and property on the land planted with forest.
- c) To exploit forest products according to the provisions of Clause 3 and Clause 4 of Article 47 and Clause 2 of Article 57 of this law.
- d) To transfer or donate the planted production forests; to mortgage or provide guarantee with the value of planted production forests at Viet Nam-based credit institutions.
- e) To join domestic organizations, households or individuals as well as overseas Vietnamese nationals by contributing capital with the value of planted production forests.

Section 4. Rights and obligations of forest owners being households and individuals

Article 69. **Rights and obligations of households and individuals assigned protection forests by the State**

1. To have the rights and obligations prescribed in Articles 59 and 60 of this law.

2. To build forests under the guidance of competent management agencies in charge of forests.

3. To exploit, use forests and fully tap forest products according to the provisions of Article 47 of this law.

4. To swap the assigned forest areas with other households or individuals in the same communes, wards or townships; individuals may bequeath their forest use rights according to law provisions.

Article 70. **Rights and obligations of households and individuals assigned production forests by the State**

1. To have the rights and obligations prescribed in Articles 59 and 60 of this law.

2. For planted production forests, to exploit them according to the provisions of Clause 2 of Article 57 of this law; to transfer, donate, lease, mortgage, provide guarantee or contribute capital with their value according to law provisions.

3. For natural production forests, to exploit them according to the provisions of Article 56 of this law; to mortgage, provide guarantee or contribute capital with only the added value of forest use rights that is brought about by forest owners' investments compared with the forest use right value determined at the time of forest assignment according to law provisions.

4. Individuals may bequeath their forest use rights under law provisions.

Article 71. **Rights and obligations of households and individuals leased production forests by the State**

1. To have the rights and obligations prescribed in Articles 59 and 60 of this law.

2. To enjoy the added value of forests brought about by forest owners' investments in the lease terms according to law provisions.

3. To mortgage, guarantee or contribute capital with the value of planted production forests that they have invested in according to law provisions.

4. For production forests planted with State budget capital:

a) to exploit them according to the provisions of Point b, Clause 2 of Article 57 of this law;

- b) to transfer, sublease the forest use rights according to law provisions.
- 5. For natural production forests:
 - a) to exploit them according to the provisions of Article 56 of this law;
 - b) to mortgage, provide guarantee or contribute capital with only the added value of forest use rights that is brought about by forest owners' investments compared with the forest use right value determined at the time of forest lease according to law provisions.

Article 72. **Rights and obligations of households and individuals assigned or leased afforestation land by the State**

1. Households and individuals assigned or leased afforestation land by the State shall have the following rights and obligations:

- a) To have the rights and obligations prescribed in Articles 59 and 60 of this law.
- b) To own forest trees, animals and property on the land planted with forest.
- c) To exploit forest products according to the provisions of Clause 3 and Clause 4 of Article 47 and Clause 2 of Article 57 of this law.
- d) To mortgage, provide guarantee or contribute capital with land use rights according to the provisions of land legislation.
- e) To transfer, donate or sublease planted production forests; to mortgage or provide guarantee with the value of planted production forests; to join domestic organizations, households or individuals as well as overseas Vietnamese nationals by contributing capital with the value of planted production forests; individuals may bequeath forests according to law provisions.

2. Households and individuals leased land by the State to plant production forests or protection forests shall have the following rights and obligations:

- a) To have the rights and obligations prescribed in Articles 59 and 60 of this law.
- b) To own forest trees, animals and property on the land planted with forest.
- c) To exploit forest products according to the provisions of Article 47 and Article 57 of this law.
- d) To transfer or donate planted production forests; to mortgage or provide guarantee with the value of planted production forests at Viet Nam-based credit institutions; individuals may bequeath forests according to law provisions.
- e) To join domestic organizations, households or individuals as well as overseas Vietnamese nationals by contributing capital with the value of planted production forests.

3. Households and individuals assigned or leased afforestation land by the State, if making investment by themselves in the application of measures to zone off for tending and regeneration or creation of production forests or protection forests on land without forests, shall also have the rights and obligations prescribed in Clause 1 of this Article in cases where they are assigned land; and shall have the rights and obligations prescribed in Clause 2 of this Article in cases where they are leased land.

ANNEX 4: RELEVANT POLICIES AND LEGISLATION

The following are the policies and legislation relevant to forest management in Viet Nam (the list is not exhaustive).

Constitution of the Socialist Republic of Viet Nam, 1992.

Land Law, passed by the National Assembly on 26 November 2003.

Law of Forest Protection and Development, passed by the National Assembly on 3 December 2004.

Decree No. 64/CP issued by the Prime Minister on 27 September 1993 concerning regulations on allocating agricultural land to households and individuals for permanent agricultural uses.

Decree No. 02/CP issued by the Prime Minister on 15 January 1994 concerning regulations on allocating forest land to organizations, households and individuals for stable, long-term use in forestry purposes.

Decree No. 01/CP issued by the Prime Minister on 4 January 1995 concerning regulations on land allocation and utilization for agricultural, forestry and aquaculture purposes within State-owned enterprises.

Decree No. 08/1997/QH 10 of the Tenth National Assembly, Second Session on the 5 Million Hectare Reforestation Project.

Decree No. 163/1999/ND-CP issued by the Government on 16 November 1999 concerning allocation and leasing of forest land to organizations, households and individuals for long-term and sustainable use in forestry purposes.

Decree No. 38/2000/ND-CP issued by the Government on 23 August 2000 concerning land use fee collection.

Decree No. 66/2001/ND-CP issued by the Government on 23 August 2000 regarding amendments/modifications to several clauses in the Decree No. 04/2000/ND-CP dated 11 February 2000 on amendments/modifications of provisions of the Law of Land.

Decree No. 68/2001/ND-CP issued by the Government on 1 October 2001 regarding land use planning and projections.

Decree 28/NQ-TW issued by the Politburo on 16 June 2003 concerning restructuring and strengthening the capacity of State forest enterprises.

Directive No. No. 286/TTg issued by the Prime Minister on 2 May 1997 concerning the strengthening of urgent measures for forest protection and development.

Directive No. 287/TTg issued by the Prime Minister on 2 May 1997 concerning the checking and tracking down of individuals and organizations causing damage to forests.

Directive No. 12/2003/CT-TTg issued by the Prime Minister on 16 May 2003 concerning the enhancement of urgent measures for forest protection and development.

Decision No. 202/TTg issued by the Prime Minister on 2 May 1994 promulgating the regulations on forest protection contracting for natural forest regeneration and forest plantation.

Decision No. 245/1998/QD-TTg issued by the Prime Minister on 21 December 1998 regarding execution of the State's management functions at different levels over forest and forest land.

Decision No. 661/TTg issued by the Prime Minister on 29 July 1998 concerning objectives, tasks, policies and implementation arrangements for the 5 Million Hectare Reforestation Project.

Decision No. 07/1998/QD-TTg issued by the Prime Minister on 16 January 1998 regarding establishment of a National Steering Committee for the 5 Million Hectare Reforestation Project for the period 1998 to 2010.

Decision No. 187/1999/QD-TTg issued by the Prime Minister on 16 September 1999 regarding renovation of the organization and management mechanism of State forest enterprises.

Decision No. 08/2001/QD-TTg issued by the Prime Minister on 11 January 2001 promulgating the regulation on management of special use forest, protection forest and production forest as natural forest.

Decision No. 178/QD-TTg issued by the Prime Minister on 12 November 2001 concerning entitlements and obligations of individuals and households allocated or leased with forest or forest land.

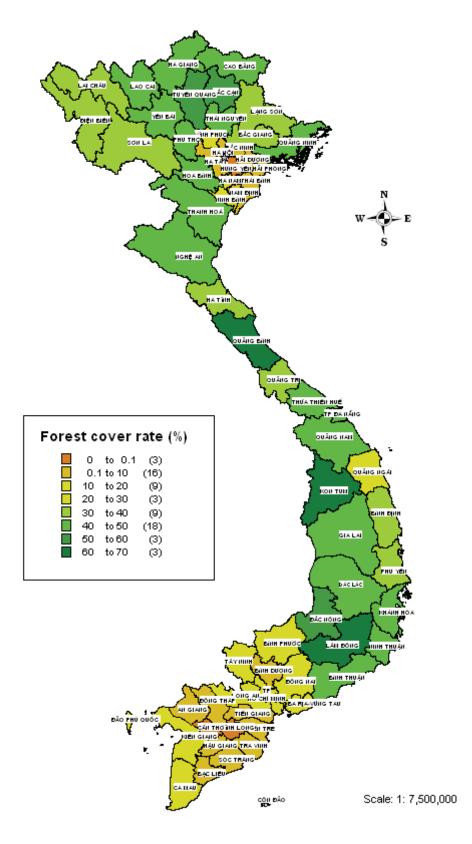
Inter-Ministerial Circular No. 1442/1999/TTLT/BNN-TCDC issued by the Ministry of Agriculture and Rural Development and the General Department of Land Administration on 21 September 1999 regarding instructions to issue land use certificates in accordance with Directive No. 18/1999/CT-TTG issued by the Prime Minister on 1 July 1999.

Inter-Ministerial Circular No. 62/2000/TTLT/BNN-TCDC issued by the Ministry of Agriculture and Rural Development and the General Department of Land Administration on 6 June 2000 giving instructions on land allocation, land lease and the issuance of land use certificates.

Circular No. 1842/2001/TT-TCDC issued by the General Department of Land Administration on 1 November 2001 regarding instructions to implement the Government's Decree No. 68/2001/ND-CP of 1 October 2001 on land-use planning and projections.

Circular No. 1990/2001/TT-TCDC issued by the General Department of Land Administration on 30 November 2001 regarding instructions on procedures for land registration, land record preparation and land-use certificate issuance.

Inter-Ministerial Circular No. 80/2003/TTLT/BNN-BTC issued by the Ministry of Agriculture and Rural Development and the Ministry of Finance on 3 September 2003 regarding instructions on implementing the Prime Minister's Decision No. 178/2001/QD-TTg of 12 November 2001 on the entitlements and obligations of households and individuals allocated/leased/given forest and forest land.



ANNEX 5: POLITICAL AND FOREST COVER MAP OF VIET NAM

ANNEX 6: STANDARD FORMS FOR FOREST RESOURCE MONITORING

Applied in 2004

Form 1: Area of forest and forest land in the country

	l and type	Changes in forest area	st area		Classified according to function	ling to function	
Forest and forest land type	code	(in Vietnamese)	(in Vietnamese)	(in Vietnamese)	(in Vietnamese)	(in Vietnamese)	(in Vietnamese)
I. Forested land							
A. Natural forest							
1. Timber forest							
2. Bamboo forest							
3. Mixed forest							
4. Mangrove forest							
5. Forest on rocky mountains							
B. Plantation forest							
Plantations with timber volume							
Plantations with no timber volume							
II. Bare land and unforested hills and mountains							
1. 1a Grassland							
2. 1b Shrubs, scattered timber trees and bamboo							
3. 1c Regenerated trees							
4. Unforested rocky mountain							
5. Sand hills, swamp land							
III. Other land							

Forest and forest land types	Land type code	Total area	SFEs	MBPFs	MBSFs	Joint ventures	Individual households	Collectives	Army units PCs	PCs
Row headings as in Form 1										
:										

Form 2: Area of forest and forest land in the country, by owner group

Form 3: Changes in area of forest and forest land in the country, by cause

Forest and forest land type	Land type code	Total changes	New plantation	Forest exploitation	Forest fire	Forest worms	Forest destruction	Change in forest land use	Natural regeneration	Other
Row headings as in Form 1										
:										

Form 4: Forest cover in the country

	-	-	·····	Of which:				ł	L
Province code	province	l otal natural area	l otal forest area	Natural	Plantation forest		for forest use	Uther land	rorest cover
				forest	Total	Newly planted			
Only provinces with forest									
cover									

Province code	Name of province	Total area	New plantation	Forest exploitation	Forest fire	Forest destruction	Change in forest land use	Natural regeneration	Total
Only provinces with forest cover	:								

Form 5: Changes in area of forest and forest land in the country, by cause

Form 6: Total forest and forest land, by function

Forest and forest land types	Land type	Total area	Of which:		
	code	2004	Special-use forest	Protection forest	Production forest
Row headings as in Form 1					

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Form 1: Area of forest and forest land in the country

Forest and forest land type	Land type code	Change in forest area		
		Area 2002 (1999)	Change	Area 2003 (2002)
Row headings as in Form 1 for 2004				

Numbers in parentheses apply to 2002.

Form 2: Total forest and forest land, by function

Forest and forest land tynes	Land type	Total area	Of which:		
	code	5	Special-use forest	Protection forest	Production forest
Row headings as in Form 1 for 2004					

Form 3: Area of forest and forest land in the country, by owner group

Forest and forest land type	Land type code	Total area	SFEs	MBPFs	MBSFs	Joint venture	Individual households, collectives	Army units	PCs	Other
Row headings as in Form 1 for 2004										
:										

Forest and forest land type	Land type code	Total changes	New plantation	Forest exploitation	Forest fire	Forest worms	Forest destruction	Change in forest land use	Natural regeneration	Other
Row headings as in Form 1 for 2004										
:										

Form 4: Changes in area of forest and forest land in the country, by cause

Form 5: Forest cover in the country

		Total material	Tatal forest	Of which:			boiling back our d	440	E outet
Province code	province	area	area	Natural	Plantation forest		for forest use	land	COVER
				forest	Total	Newly planted			
Only provinces with forest cover									
	:								

Form 6: Total area by province (not applicable to 2002)

Province code	Name of province	Total area	New plantation	Forest exploitation	Forest fire	Forest worms	Forest destruction	Change in forest Natural Iand use regener	Natural regeneration	Total
Only provinces with forest cover	:									

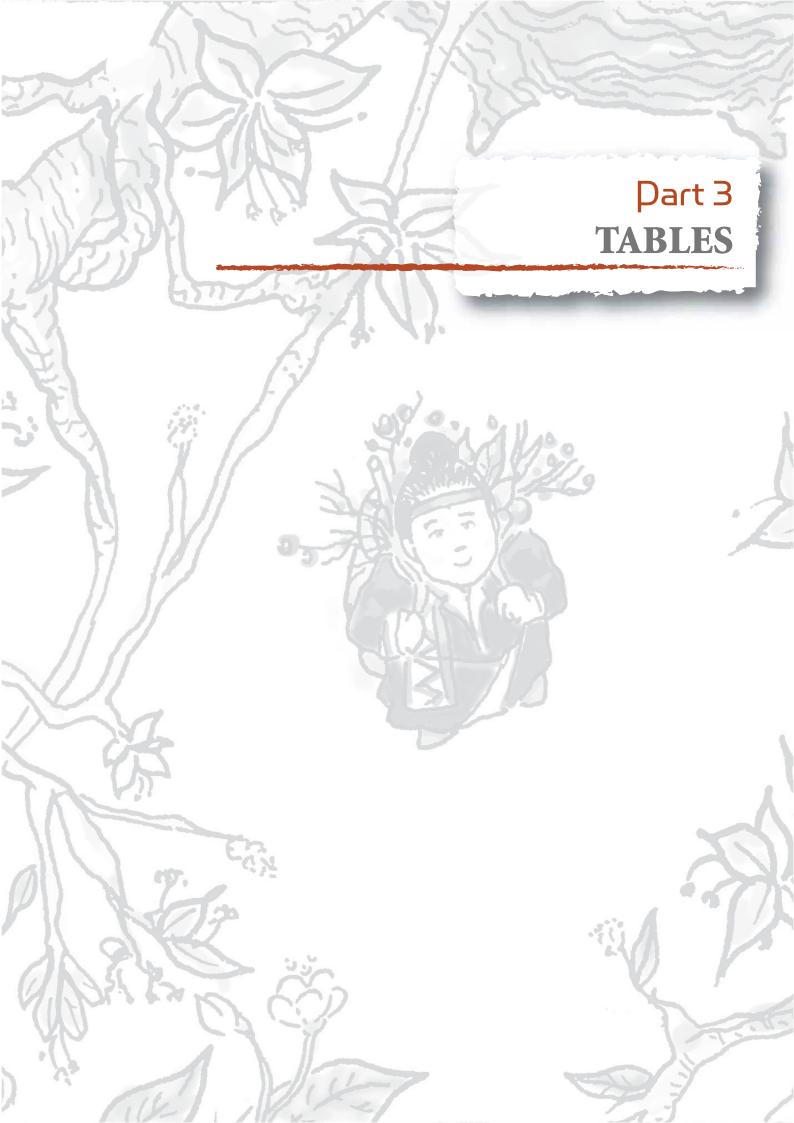
Forest and land type	Total area	SFEs	MBPFs	MBSFs	Joint ventures	Individual households	Collectives	Army units	PCs
I. Forested land	33 037 857	4 360 406	2 251 813	2 076 297	68 548	6 101 456	600 172	495 378	17 083 788
A. Natural forest	12 306 858	3 029 660	1 405 753	1 657 340	53 981	2 871 165	284 632	297 188	2 707 140
1. Timber forest	10 088 288	2 411 110	1 156 735	1 563 694	7 952	1 999 509	249 019	249 903	2 450 367
2. Bamboo forest	7 926 825	1 900 782	986 003	1 211 035	5 312	1 453 454	191 929	193 769	1 984 540
3. Mixed forest	799 130	225 271	60 520	71 598	1 472	192 587	22 173	12 595	212 914
4. Mangrove forest	682 642	209 271	76053	106 330	1 057	123 482	6 015	41 791	118 643
5. Forest on rocky mountains	68 035	13 406	23 553	12 082	32	5 977	1 406	289	11 289
B. Plantation forest	611 657	62 380	10 606	162 648	79	224 009	27 496	1 458	122 980
Plantations with timber volume	2 218 570	618 550	249 018	93 646	46 029	871 656	35 613	47 285	256 773
Plantations with no timber volume	895 244	294 773	118 196	45 798	4 102	280 076	23 767	23 933	104 599
II. Bare land and unforested hills and mountains	1 045 988	281 457	122 719	45 697	41 912	402 959	10 645	16 392	124 207
1. 1a Grassland	81 484	7 495	148	215	0	69 167	946	104	3 408
2. 1b Shrubs, scattered timber trees and bamboo 195 854	195 854	34 825	7 954	1 936	15	119 454	255	6 856	24 559
3. 1c Regenerated trees	6 718 576	921 261	557 483	354 246	5 527	1 969 805	240 190	115 567	2 554 496
4. Unforested rocky mountain	2 115 952	225 572	131 171	100 186	2 049	769 046	64 631	26 191	797 106
5. Sand hills, swamp land	2 090 219	338 605	198 417	108 186	1 696	582 569	35 594	50 489	774 663
III. Other land	1 935 032	266 143	131 099	126 942	995	524 289	119 204	36 288	730 071
I. Forested land	358 996	37 779	7 778	15410	26	90 633	20 748	1 042	185 582
A. Natural forest	218 377	53 162	89 018	3 522	763	3 268	14	1 556	67 073
1. Timber forest	14 012 423	409 485	288 577	64 711	9 039	1 260 486	75 350	82 623	11 822 152

ANNEX 7: AREA OF FOREST AND FOREST LAND IN THE CCOUNTRY, BY OWNER GROUP

Units: hectares.

Data of 31 December 2004.

Source: (FPD, 2004.



Authors

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- Vietnam: Mr. Nguyen Quang Tan.

Bangladesh

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	1,487,464	208,090	Including Rubber		1,695,554
Private	289,800		plantations		289,800
Community/Group owned					
Owned by indigenous or tribal people					
Other types of ownership					
Total	1,777,264	208,090			1,985,354
(*) Forest Area: ha					

(**) Ownership of the land = ownership of the forest

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	Owner is th man	Owner is the exclusive manager	Forest (Forest operation contracted/ Partnerships	tracted/ F	artnerships	De	volved man	Devolved management rights	Others	Total
Matrix 2 Detailed data public ownership	Str St	Strictly limited: No extraction rights for others and NWFP	Joi manaç com Comm concess	Joint forest management with communities. Community timber concessions /licenses	Private vv permi concessi	Private company volume permits/logging concession /schemes	Commur leases manaç conce	Community forest leases/forest management concessions	Private company leases/forest management concessions		
			Area:	17,050	Area:	191,040	Area:		Area:		1,695,554
Ctate		196 107	Duration:		Duration:		Duration:		Duration:	1	
oldle	200,302	1,100,402	Number:		Number:	_	Number		Number:	1	
			Access:		Access:		Access:		Access:	1	
			Area:		Area:		Area:		Area:		
Local governments.			Duration:		Duration:	_	Duration:		Duration:		
regions, provinces and			Number:		Number:		Number:		Number.		
districts			Access:		Access:		Access:		Access:		
			Area:		Area:		Area:		Area:		
Local governments:			Duration:		Duration:	_	Duration:		Duration:		
villages, municipalities			Number:		Number:	_	Number:		Number.		
			Access:		Access:		Access:		Access:		
			Area:		Area:	`	Area:		Area:		
Other aublic hediec			Duration:		Duration:	_	Duration:		Duration:		
			Number:		Number:	_	Number:		Number.		
			Access:		Access:		Access:		Access:		
(*) Ecret Area: he. Duration weak, Number Area (*)	Sec. Numberia	hor: Access: V/N									

Matrix 3 betailed data private ownership officies infinities infinities officies infinitinfinities infinities infinitis infinities infinities infin		Owner is the exclusive manager	is the exclusive manager	Forest operation contracted/ Partnerships	ontracted/	Partnerships		Devolved management rights	agement	rights	Others	Total
Area: Area: <th< th=""><th>Matrix 3 Detailed data private ownership</th><td>Strictly limited: No extraction rights for others</td><td>User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP</td><td>Joint forest management with communities. Community timber concessions /license</td><td></td><td>tte company volume nits/logging sion /schemes</td><td>Comr lea ma</td><td>nunity forest ses/forest nagement ncessions</td><td>Priva lea maa cor</td><td>te company ses/forest nagement icessions</td><td></td><td></td></th<>	Matrix 3 Detailed data private ownership	Strictly limited: No extraction rights for others	User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	Joint forest management with communities. Community timber concessions /license		tte company volume nits/logging sion /schemes	Comr lea ma	nunity forest ses/forest nagement ncessions	Priva lea maa cor	te company ses/forest nagement icessions		
285,630 Duration: Number: Duration: Number: Duration: Duration: Duration: Duration: Vumber: Number: N				Area:	Area:		Area:		Area:			285,630
Colonal Number:	المردانية بالمحمل	705 620		Duration:	Duration:		Duration:		Duration:			
Access:	Individual	000,002	2	Number:	Number:		Number:		Number:			
Area: Area: <th< th=""><th></th><td></td><td>×</td><td>Access:</td><td>Access:</td><td></td><td>Access:</td><td></td><td>Access:</td><td></td><td></td><td></td></th<>			×	Access:	Access:		Access:		Access:			
Duration: Duration: <t< th=""><th></th><td></td><td></td><td>Area:</td><td></td><td></td><td>Area:</td><td></td><td></td><td></td><td></td><td></td></t<>				Area:			Area:					
Number: Number: <t< th=""><th></th><td></td><td></td><td>Duration:</td><td></td><td>< 12</td><td>Duration:</td><td></td><td></td><td>4</td><td></td><td></td></t<>				Duration:		< 12	Duration:			4		
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Area: Area: Area: Area: Duration: Duration: Duration: Duration: Number: Number: Number: Number: Access: Access: Access: Access:			×	Access:			Access:				•	
Duration: Duration: Duration: Number: Number: Number: Number: Access: Access: Access: Access:				Area:	Area:		Area:		Area:			
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Access: Access:	Olliers		2	Number:	Number:		Number:		Number:			
				Access:	Access:		Access:		Access:			

(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N

	Owner is the exclusive manager	is the exclusive manager	Forest operation contracted/ Partnerships	tracted/ P	artnerships	Devolv	ed mana	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership	0,	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private vo permit concessic	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	forest est ent	Private company leases/forest management concessions		
				Area:			4	Area:		
Community/Group			N IN	Duration:			<u>10</u>	Duration:		
owned/User groups			N.A.	Number:		N.A.	<u> </u> ∠	Number:		
				Access:			4	Access:		
				Area:			A	Area:		
Owned by indigenous or			V IV	Duration:		V N		Duration:		
tribal people			·C·N	Number:		<u>C.</u>	2	Number:		
				Access:			P	Access:		
			Area:	Area:	/	Area:	4	Area:		
Other truce of summary			Duration:	Duration:		Duration:		Duration:		
			Number:	Number:	-	Number:	2	Number.		
			Access:	Access:	~	Access:	4	Access:		
(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N	ars; Number:num	ber; Access: Y/N								

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Bhutan

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	2,948,757	264,700	4,933		3,218,390
Private					
Community/Group owned					
Owned by indigenous or tribal people			In line with FRA 2005 figures, Only Forests	igures,	
Other types of ownership					
Total	2,948,757	264,700	4,933		3,218,390
(*) Forest Area: ha					

()) orest must ind (**) Ownership of the land ≠ ownership of the forest

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	Owner is the exclusive manager	is the exclusive manager	Forest o	Forest operation contracted/ Partnerships	tracted/ F	artnerships		Devolved management rights	agement	rights	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited No extraction rights for others	Strictly limited: Customary No extraction rights/Permits rights for to hunt, gather others and NWFP		Joint forest management with communities. Community timber concessions /licenses	Privat volume p concess	Private company volume permits/logging concession /schemes	Comm leas man con	Community forest leases/forest management concessions	Privat leas man con	Private company leases/forest management concessions		
			Area:	264,700	Area:		Area:	2,096	Area:	2,837		3,218,390
Ctate			Duration:		Duration:		Duration:		Duration:			
Släte		2,340,131	Number:		Number:		Number		Number:			
			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			
Local governments:			Duration:		Duration:		Duration:		Duration:			
regions, provinces and			Number:		Number:		Number:		Number:			
districts			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			
Local governments:			Duration:		Duration:		Duration:		Duration:			
villages, municipalities			Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			
		-	Area:		Area:		Area:		Area:			
Other muhlic hediec			Duration:		Duration:		Duration:		Duration:			
			Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			
(*) Forest Area: ha: Duration: vears: Number:number: Access: Y/N	ars' Number'num	her: Access: Y/N										

	Owner is the exclusive manager	is the exclusive manager	Forest	Forest operation contracted/ Partnerships	tracted/ P	artnerships		Devolved management rights	agement	rights	Others	Total
Matrix 3 Detailed data private ownership	Strictly limited: No extraction rights for others and NWFP	User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	Joi manag com Comm concess	Joint forest management with communities. Community timber concessions /licenses	Private volume pe concessi	Private company volume permits/logging concession /schemes	Comm leas mar con	Community forest leases/forest management concessions	Privat leas mar	Private company leases/forest management concessions		
		4	Area:		Area:		Area:		Area:			
			Duration:		Duration:		Duration:		Duration:			
Inalviauai		<u> </u>	Number:		Number:		Number:		Number:			
		4	Access:		Access:		Access:		Access:			
		4	Area:				Area:					
			Duration:				Duration:			V N		
		2	Number:				Number:			.4.2		
		1	Access:				Access:					
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0th			Duration:		Duration:		Duration:		Duration:			
Others		2	Number:		Number:		Number:		Number:			
		4	Access:		Access:		Access:		Access:			
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(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N

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	Owner is the exclu manager	is the exclusive manager	Forest operation contracted/ Partnerships	itracted/ Par	tnerships	Devolved ma	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership	0)	Strictly limited: No extraction rights/Permits rights for to hunt, gather others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private c volume perr concession	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	Private company leases/forest management concessions		
				Area:			Area:		
Community/Group			V IV	Duration:		4	Duration:		
owned/User groups			N.A.	Number:		N.Y.	Number:		
				Access:			Access:		
				Area:			Area:		
Owned by indigenous or			V IV	Duration:		4	Duration:		
tribal people			N.A.	Number:		N.Y.	Number:		
				Access:			Access:		
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Other trinee of enunerable			Duration:	Duration:		Duration:	Duration:		
			Number:	Number:	2	Number:	Number:		
			Access:	Access:	4	Access:	Access:		

Brunei

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	517,000				517,000
Private	10,000				10,000
Community/Group owned					
Owned by indigenous or tribal people			Slightly different from FRA 2005 data: includes forest and OWL	2	
Other types of ownership					
Total	527,000				527,000
(*) Forest Area: ha					

(**) Ownership of the land = ownership of the forest

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	Owner is the excl	e exclusive									
	man	manager	Forest oper-	ation conti	Forest operation contracted/ Partnerships	nerships	Devolved	manag	Devolved management rights	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: No extraction rights for others	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	rest ant with lities. /licenses	Private company volume permits/logging concession /schemes	mpany ne ogging schemes	Community forest leases/forest management concessions	र	Private company leases/forest management concessions		
			Miea:	4	Area:	4	Area:	Area:	aa:		517,000
C 4-4-2		105 000	Duration:		Duration:		Duration:	Du	Duration:		
State	222,000	133,000	Number:	2	Number:	2	Number	NU	Number.		
		/	Access:	Forest on	Forest on the state	4	Access:	Acc	Access:		
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Local governments:			Duration:				Duration:	Dυ	Duration:		
regions, provinces and	Enract	Enract recentee and	Mumbar:	2	Number:	2	Number:	Nu	Number:		
districts		norescressives and proposed extension		4	Access:	4	Access:	Acc	Access:		
				4	Area:	4	Area:	Area:	ea:		
Local governments:			Duration:		Duration:		Duration:	Du	Duration:		
villages, municipalities			Number:	2	Number:	2	Number:	Nu	Number:		
			Access:	4	Access:	4	Access:	Acc	Access:		
			Area:	4	Area:	4	Area:	Are	Area:		
Other withlie hedies			Duration:		Duration:		Duration:	Du	Duration:		
			Number:	2	Number:	2	Number:	Nu	Number:		
			Access:	4	Access:	4	Access:	Acc	Access:		
(*) Forest Area: ha: Duration: vears: Number:number: Access: Y/N	ars: Number:num	ber: Access: Y/N									

Matrix 3 betailed data private ownership ownership User rights/ no extraction rights for tights for ti	ser rights/ Joint forest ustomary management with runt, gather community timber aad wood					
10,000	NWFP	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	Private company leases/forest management concessions		
10,000	Area:	Area:	Area:	Area:		10,000
	Duration:	Duration:	Duration:	Duration:		
	Number:	Number:	Number:	Number.		
	Access:	Access:	Access:	Access:		
	Area:		Area:			
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Access:	Access:		Access:			
Area:	Area:	Area:	Area:	Area:		
Duration:	Duration:	Duration:	Duration:	Duration:		
Outers	Number:	Number:	Number:	Number.		
Access:	Access:	Access:	Access:	Access:		

(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N

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	Owner is the exclusive manager	is the exclusive manager	Forest operation contracted/ Partnerships	ntracted/ F	artnerships	Devolv	ed mana	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership	0)	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Privato vv permi concessi	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	forest est ent	Private company leases/forest management concessions		
				Area:			-	Area:		
Community/Group			V IV	Duration:		V IV	<u>10</u>	Duration:	1	
owned/User groups			N.A.	Number:		Υ.Υ.	2	Number:		
				Access:				Access:		
				Area:			-	Area:		
Owned by indigenous or			V IV	Duration:		V IV		Duration:		
tribal people			N.A.	Number:		Č.Z	2	Number.		
				Access:			-	Access:		
			Area:	Area:	1	Area:	`	Area:		
Other truce of cumerchin			Duration:	Duration:		Duration:		Duration:		
			Number:	Number:	2	Number:	2	Number:		
			Access:	Access:	1	Access:	`	Access:		

Cambodia

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	7,538,646	3,521,445			11,060,091
Private					
Community/Group owned			Correspond to FRA	to FRA	
Owned by indigenous or tribal people			2005 data		
Other types of ownership					
Total	7,538,646	3,521,445			11,060,091
(*) Forest Area: ha					

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Ownership
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	Owner is the exclusive manager	is the exclusive manager	Forest	Forest operation contracted/ Partnerships	itracted/	Partnerships		Devolved management rights	agement rig	Ihts	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: No extraction rights for others and NWFP	User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	Jo mana con Comn concess	Joint forest management with communities. Community timber concessions /licenses	Priva volume p concess	Private company volume permits/logging concession /schemes	Comr lea ma co	Community forest leases/forest management concessions	Private compar leases/forest management concessions	Private company leases/forest management concessions		
			Area:	218,647	Area:	3,302,798	Area:		Area:			11,060,091
			Duration:	15	Duration:	25-30	Duration:		Duration:			
State		7,538,646	Number:	274 forest	Number:	12 companies Number	Number		Number:			
				communities								
		-	Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			
Local governments:			Duration:		Duration:		Duration:		Duration:			
regions, provinces and		•	Number:		Number:		Number:		Number:			
districts			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			
Local governments:			Duration:		Duration:		Duration:		Duration:			
villages, municipalities			Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			
Other within healing			Duration:		Duration:		Duration:		Duration:			
Other public boales			Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			
(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N	rs; Number:numb	er; Access: Y/N										

	Owner is th man	Owner is the exclusive manager	Forest ope	Forest operation contracted/ Partnerships	racted/ Pa	Irtnerships	0	Devolved management rights	agement ı	rights	Others	Total
Matrix 3 Detailed data private ownership	Strictly limited: No extraction rights for others and NWFP	User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	Joint forest management with communities. Community timber concessions /licenses		Private volume per concessio	Private company volume permits/logging concession /schemes	Commi lease man: conc	Community forest leases/forest management concessions	Private leas man cono	Private company leases/forest management concessions		
			Area:	`	Area:		Area:		Area:			
	Ni- data	•	Duration:		Duration:		Duration:		Duration:		•	
Individual	INO DATA	•	Number:		Number:		Number:		Number:		•	
			Access:	~	Access:		Access:		Access:			
			Area:				Area:					
			Duration:		2	4	Duration:				•	
linuusures			Number:		<	. Ç.	Number:			.Y.Z.	•	
			Access:				Access:				•	
			Area:		Area:		Area:		Area:			
041			Duration:		Duration:		Duration:		Duration:		•	
Others			Number:		Number:		Number:		Number:		•	
			Access:	/	Access:		Access:		Access:			

(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N

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	Owner is the excl manager	is the exclusive manager	Forest operation contracted/ Partnerships	itracted/ Partno	erships	Devolve	ed mana	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigenou s/Other ownership	0,	Strictly limited: No extraction rights/Permits rights for to hunt, gather others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes	npany s/logging schemes	Community forest leases/forest management concessions	st st nrt ss	Private company leases/forest management concessions		
				Area:			+	Area:		
Community/Group			4	Duration:		V IV		Duration:		
owned/User groups			N.Y.	Number:		Y.Z	<u> </u>	Number.		
				Access:			4	Access:		
				Area:			+	Area:		
Owned by indigenous or			4	Duration:		V IV		Duration:		
tribal people			N.Y.	Number:		Y.Z		Number:		
				Access:			4	Access:		
			Area:	Area:	A	Area:	4	Area:		
Other truce of cumerchin			Duration:	Duration:		Duration:		Duration:		
Outlet types of ownership			Number:	Number:	z	Number:	2	Number:		
			Access:	Access:	A	Access:	+	Access:		

India

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	49,480,405	17,000,000			66,480,405
Private	1,073,395	Forestry Statistics			1,073,395
Community/Group owned		Tudia, 2000.			
Owned by indigenous or tribal people			State of Forest Report, 2001. Only forest.	eport, 2001.	
Other types of ownership			Correspond to FRA 2005 data	tA 2005 data	
Total	50,553,800	17,000,000			67,553,800
(*) Forest Area: ha	archia of the formet				

(**) Ownership of the land = ownership of the forest

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	Owner is the excl manager	is the exclusive manager	Forest o	Forest operation contracted/ Partnerships	racted/ F	artnerships	Devolved mai	Devolved management rights	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: No extraction rights for to hunt, gathe dead wood and NWFP	Strictly limited: No extraction rights for others and NWFP	Joi manag com Comm concess	Joint forest management with communities. Community timber concessions /licenses	Privat v perm concess	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	Private company leases/forest management concessions		
			Area:	17,000,000	Area:		Area:	Area:		61,499,599
			Duration:	10	Duration:	Ministry of		ration:		
State	006,000,0	40,042,033	Number:	84,632	Number:	Forests, Gov	Forests, Government of India	mber.		
			Access:	yes /	Access:		Access:	Access:		
			Area:		Area:		Area:	Area:		3,255,171
	ational		Duration:	Duration: Forestry Statistics	stics		Duration:	Duration:		
provinces and	Wildlife	3,255,1717	Number: I	Number: India, 2000			Number:	Number.		
	Database		Access:		Access:		Access:	Access:		
			Area:		raa.		Area:	Area:		1,725,635
Local governments:	SUUS TIM		Duration:	Duration: Forestry Statistics	stics		Duration:	Duration:		
villages, municipalities		1,125,035	Number:	Number: India, 2000			Number:	Number.		
•			Access:		Access:		Access:	Access:		
			Area:		Area:		Area:	Area:		
Other withlie hediec			Duration:		Duration:		Duration:	Duration:		
			Number:		Number:		Number:	Number.		
			Access:	,	Access:		Access:	Access:		

	Owner is th man	Owner is the exclusive manager	Forest operation contracted/ Partnerships	n contract	ed/ Partnership	s	Devolved management rights	agement right	ţs	Others	Total
Matrix 3 Detailed data private ownership		User rights/ User rights/ Customary No extraction rights/Permits rights for to hunt, gather others dead wood and NWFP	Joint forest management with communities. Community timber concessions /licenses		Private company volume permits/logging concession /schemes		Community forest leases/forest management concessions	Private company leases/forest management concessions	npany vrest nent ions		
			Area:	Area:		Area:		Area:			1,073,395
	1 070 206		Duration:	Duration:	on:	Duration:		Duration:		•	
Individual	1,07,0,030		Number:	Number:	er:	Number:		Number:		•	
			Access:	Access	S:	Access:		Access:		•	
			Area:			Area:					**
الم مار برم ا سار من			Duration:		4	Duration:			L		
IIIdustries			Number:		.Y.Y	Number:		N.N.		Included in the above	above
		-	Access:			Access:					
			Area:	Area:		Area:		Area:			
041			Duration:	Duration:	on:	Duration:		Duration:		•	
Others			Number:	Number:	er:	Number:		Number:		•	
			Access:	Access:	S:	Access:		Access:		•	
	NI	Law Assess V/NI									

(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N

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	Owner is th man	Owner is the exclusive manager	Forest operation contracted/ Partnerships	tracted/ F	Partnerships	Dev	olved mana	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership	0)	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Privat v perm concess	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	ity forest forest ement ssions	Private company leases/forest management concessions		
				Area:				Area:		
Community/Group			V IV	Duration:		N		Duration:		
owned/User groups			N.A.	Number:		N.A.	, ť	Number:	I	
,				Access:				Access:		
				Area:				Area:		
Owned by indigenous or			4	Duration:		Z		Duration:		
tribal people			N.A.	Number:		N.A.	ŕ	Number:		
•				Access:				Access:		
			Area:	Area:	4	Area:		Area:		
Other truce of summer his			Duration:	Duration:		Duration:		Duration:		
Other types of ownership			Number:	Number:	2	Number:		Number.		
			Access:	Access:	4	Access:		Access:		

Indonesia (a)

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	59,743,775	31,073,006	233,811	31,078,972	31,078,972 122,129,564
Private	1,705,687				1,705,687
Community/Group owned					
Owned by indigenous or tribal people					
Other types of ownership					
Total	61,449,462	31,073,006		31,078,972	31,078,972 123,835,251
(*) Forest Area: ha	abin of the forest				P

 $(\star \star)$ Ownership of the land = ownership of the forest

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	Owner is the exc manager	is the exclusive manager	Forest operation co	Forest operation contracted/ Partnerships	Dev	olved mana	Devolved management rights	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: No extraction rights for others	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	ity forest /forest ement ssions	Private company leases/forest management concessions	~	
			Area:	Area: 31,073,006	irea:	233,811	kea:		83,381,600
State	20 005 811	/	12.401.949 (Terrestrial National	rial National	Dunation:		Du community Forests	31 078 072	
Orde	50,000,03		Park): 4.045.049 (Marine	arine	Number		Nu	/ 10,010,10	
			National Park): 4.332.258 (Strict		Access:		Access:	<u> </u>	
			of Terrestrial Nature Reserve).	Reserve).	Area: 3.2	3.253.006		Production forest	38,747,964
Local governments:	21 650 170		216.555 (Strict of Marine Nature	arine Nature		Industrial plantation		which will be used for	
regions, provinces and	/ 14,000,10	1,009,432	Reserve)		Number: fore	forests	timbe	timber concessions,	
					Access: 27.	27.820.000	plant	planted forests or	
	Protected		America Americ		Area: Nat	Natural forest	resto	restoration	
Local governments:	forest		Duration:	Duration:	Duration: CON	concession	i ecos	ecosystem program	
villages, municipalities	5.120.647 Ter	7 Terrestrial Wil	restrial Wildlife Sanctuary:	Number:	Number:		Number: acco	according to the	
	342.940	342.940 Marine Wildlife Sanctuary;	Sanctuary;	Access:	Access:		Access: MOOC	wood/timber/trees	
	336.749 Grand	Grand Forest Pa	Forest Park; 297.682	Area:	Area:		Area: cond	condition in each	
Other within the disc	Terrestria	I Nature Recreat	Terrestrial Nature Recreation Park; 765.482	Duration:	Duration:		Duration: area,	area. Still is under	
	Marine Na	Marine Nature Recreation Park; 225.992	Park; 225.992	Number:	Number:		Number: Gov.	Gov. management	
	Game Hunting	nting Park		Access:	Access:		Access:	_	

	Owner is th man	Owner is the exclusive manager	Forest o	operation co	ntracted/	Forest operation contracted/ Partnerships	Ď	Devolved management rights	agement rigl	hts	Others	Total
Matrix 3 Detailed data private ownership	Strictly limited No extraction rights for others	Strictly limited: No extraction rights for others and NWFP		Joint forest management with communities. Community timber concessions /licenses		Private company volume permits/logging concession /schemes	Commu lease mana conci	Community forest leases/forest management concessions	Private company leases/forest management concessions	ompany forest ement sions		
			Area:		Area:		Area:		Area:			1,705,687
	1 705 687	_	Duration:		Duration:		Duration:		Duration:		•	
Individual	1,7 00,007	Hutan rakyat = Private	/at = Pri	vate	Number:		Number:		Number.		•	
		forest owned by local	ed by lo	cal	Access:		Access:		Access:			
		communities, families.	ies, fami	lies.			Area:					
		Data up to 2003	2003				Duration:					
Illiqustries		-			1		Number:		Z	÷		
			Access:		1		Access:					
			Area:		Area:		Area:		Area:			
0.41			Duration:		Duration:		Duration:		Duration:		•	
Others			Number:		Number:		Number:		Number:		•	
			Access:		Access:		Access:		Access:			

	Υ'N
	Access:
-	ration: years; Number:number; Access: Y
	S Numb
	years
	orest Area: ha; Duration:
	a: ha;
	st Are:
	(*) Fores

	Owner is th man	Owner is the exclusive manager	Forest operation contracted/ Partnerships	tracted/ Pa	rtnerships	Devolv	red mana	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigenou s/Other ownership	0,	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private (volume peri concession	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	forest est ent	Private company leases/forest management concessions		
				Area:			4	Area:		
Community/Group			N N	Duration:		V IV		Duration:		
owned/User groups			N.A.	Number:		Y.Y.	<u> </u>	Number:		
				Access:			4	Access:		
				Area:			A	Area:		
Owned by indigenous or			N N	Duration:		V IV		Duration:		
tribal people			.۲.N	Number:				Number:		
				Access:			4	Access:		
			Area:	Area:		Area:	4	Area:		
Other truce of summer thin			Duration:	Duration:		Duration:		Duration:		
Other types of ownership			Number:	Number:	-	Number:	2	Number:		
			Access:	Access:		Access:	4	Access:		
(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N	rs; Number:numb	er; Access: Y/N								

(a) Source: Forestry Statistic, Indonesian Department of Forestry 2004.

Japan

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	10,137,000				10,137,000
Private	14,440,000				14,440,000
Community/Group owned	290,000				290,000
Owned by indigenous or tribal people			Correspond to FKA 2005 data	RA A	
Other types of ownership					
Total	24,867,000				24,867,000
(*) Forest Area: ha					

(**) Ownership of the land = ownership of the forest

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	Owner is th man	Owner is the exclusive manager	Forest op	Forest operation contracted/ Partnerships	tracted/ Pa	artnerships	De	evolved man	Devolved management rights	Ğ	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: No extraction rights for others and NWFP	Strictly limited: No extraction rights/permits rights/permits to hunt, gather dead wood and NWFP	Joint manage comm Commu concessio	Joint forest management with communities. Community timber concessions /licenses	Private vo permit concessic	Private company volume permits/logging concession /schemes	Commu lease mana conc	Community forest leases/forest management concessions	Private company leases/forest management concessions	<u> </u>		
			Area:		Area:		Area:		Area:			7,631,000
C 4-4-		2 621 000	Duration:		Duration:		Duration:		Duration:		1	
State			Number:		Number:		Number:		Number:		1	
			Access:		Access:		Access:		Access:		1	
			Area:		Area:		Area:		Area:			1,200,000
Local governments:			Duration:		Duration:		Duration:		Duration:		<u> </u>	
regions, provinces and		1,200,000	Number:		Number:		Number:		Number:		1	
districts			Access:		Access:		Access:		Access:		1	
			Area:		Area:		Area:		Area:			1,306,000
Local governments:			Duration:		Duration:		Duration:		Duration:			
villages, municipalities		1,306,000	Number:		Number:		Number:		Number:		1	
			Access:		Access:		Access:		Access:		1	
			Area:		Area:		Area:		Area:			
Other withlie hedies		•	Duration:		Duration:		Duration:		Duration:		I	
Other public bodies			Number:		Number:		Number:		Number.		1	
			Access:		Access:		Access:		Access:		1	
(*) Forest Area: ha: Duration: vears: Number:number: Access: Y/N	ars' Number'num	her: Access: Y/N										

	Owner is the exclusive manager	is the exclusive manager	Forest o	Forest operation contracted/ Partnerships	tracted/ F	artnerships	4	Devolved management rights	agement	rights	Others	Total
Matrix 3 Detailed data private ownership		Strictly limited: No extraction rights for others and NWFP		Joint forest management with communities. Community timber concessions /licenses	Private v permi concessi	Private company volume permits/logging concession /schemes	Comm leas man con	Community forest leases/forest management concessions	Priva lea ma cor	Private company leases/forest management concessions		
			Area:		Area:		Area:		Area:			9,290,000
			Duration:		Duration:		Duration:		Duration:			
Individual	a,230,000		Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			
		~	Area:				Area:					2,430,000
laductaioc	2 430 000	probably overhestimated	verhesti	imated			Duration:			< 12		
	6,400,000		Number.			Č.	Number:			Č.		
			Access:				Access:					
			Area:		Area:		Area:		Area:			2,720,000
Others			Duration:		Duration:		Duration:		Duration:			
Others	z,1 zu,uuu		Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			

(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N

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	Owner is th man	Owner is the exclusive manager	Forest operation con	Forest operation contracted/ Partnerships	Devolved man	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership		Strictly limited: No extraction rights/Permits rights for to hunt, gather dead wood and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	Private company leases/forest management concessions		
				Area:		Area:		290,000
Community/Group				Duration:	4	Duration:		
owned/User groups	230,000		N.A.	Number:	N.A.	Number.		
				Access:		Access:		
				Area:		Area:		
Owned by indigenous or			4	Duration:	V IV	Duration:		
tribal people			N.A.	Number:	N.A.	Number:		
				Access:		Access:		
			Area:	Area:	Area:	Area:		
			Duration:	Duration:	Duration:	Duration:		
Other types of ownership			Number:	Number:	Number:	Number:		
			Access:	Access:	Access:	Access:		
/*/ Landa and a set a	Prove Please and Party of the P	Law Access VIAI						

Republic of Korea

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	1,847,490		49,442	50,751	50,751 1,947,683
Private	4,458,649				4,458,649
Community/Group owned					
Owned by indigenous or tribal people			Correspond to FRA 2005		
Other types of ownership					
Total	6,306,139		49,442	50,751	6,406,332
(*) Forest Area: ha					

(**) Ownership of the land = ownership of the forest

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	Owner is th man	Owner is the exclusive manager	Forest o	Forest operation contracted/ Partnerships	tracted/ P	artnerships	Δ	Devolved management rights	lagement	rights	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: No extraction rights for to hunt, gathe dead wood and NWFP	Strictly limited: No extraction rights for others and NWFP	Joir manag comr Commu concessi	Joint forest management with communities. Community timber concessions /licenses	Private vo permit concessic	Private company volume permits/logging concession /schemes	Comm leas man conc	Community forest leases/forest management concessions	Privat leas mar con	Private company leases/forest management concessions		
			Area:		Area:		Area:	23,837	Area:	25,605		1,457,252
Ctoto	1 267 060		Duration:		Duration:		Duration:	10-30	Duration:	10-30	EO 7E4	
State	BCU, 1CC, 1		Number:		Number:		Number	560	Number:	58	10/'00	
			Access:		Access:		Access:	No	Access:			
			Area:		Area:		Area:		Area:			151,935
Local governments:			Duration:		Duration:		Duration:		Duration:			
regions, provinces and	101,935		Number:		Number:		Number:		Number:			
districts			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			338,496
Local governments:	000 000		Duration:		Duration:	_	Duration:		Duration:			
villages, municipalities	338,490		Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			
Other withlie healing			Duration:		Duration:		Duration:		Duration:			
			Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			
(*) Forest Area: ha: Duration: vears: Number:number: Access: Y/N	ars' Number'num	her: Access: Y/N										

	Owner is th man	Owner is the exclusive manager	Forest operation	i contract	Forest operation contracted/ Partnerships		olved mana	Devolved management rights	Others	Total
Matrix 3 Detailed data private ownership	Z St	Strictly limited: No extraction rights/Permits rights for to hunt, gather others and NWFP	Joint forest management with communities. Community timber concessions /licenses		Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	ty forest forest ament sions	Private company leases/forest management concessions		
			Area:	Area:		Area:		Area:		4,017,172
	021201	2 million	million individual	Duration:	on:	Duration:		Duration:		
Individual	4,017,172	forest owners	rners	Number:	er:	Number:		Number:		
		ļ	Access:	Access:	S:	Access:		Access:		
			Area:			Area:				198,646
	100 616		Duration:		V 14	Duration:		V IV		
Industries	130,040		Number:	-	N.A.	Number:		N.A.		
			Access:			Access:				
Others.	100 010		Area:	Area:		Area:		Area:		242,831
Others	242,001		Duration:	Duration	on:	Duration:		Duration:		
(*) Ecreet Areas has Durations veares. Number and her Access. V/N	are: Number:num	har. Accese. V/N								

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	Owner is the exclusive manager	is the exclusive manager	Forest operation contracted/ Partnerships	tracted/ Partners	ips	Devolved man	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership	Z St	User rights/ nicity limited: Oustomary rights for to hunt, gather dead wood and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes		Community forest leases/forest management concessions	Private company leases/forest management concessions		
				Area:			Area:		
Community/Group			V IV	Duration:	 		Duration:		
owned/User groups			.Y.N	Number:		С.N	Number:		
				Access:			Access:		
				Area:			Area:		
Owned by indigenous or			V N	Duration:		4	Duration:		
tribal people			N.Y.	Number:		N.A.	Number:		
				Access:			Access:		
			Area:	Area:	Area:		Area:		
Other trinee of comparishing			Duration:	Duration:	Duration:		Duration:		
			Number:	Number:	Number:		Number:		
			Access:	Access:	Access:		Access:		

Lao People's Democratic Republic

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	11,200,000	600,000			11,800,000
Private					
Community/Group owned			Data do not corresnond to ERA	H to FRA	
Owned by indigenous or tribal people			2005, which reports 16 million ha	million	
Other types of ownership					
Total	11,200,000	600,000			11,800,000
(*) Forest Area: ha					

(**) Ownership of the land = ownership of the forest

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	Owner is the exc manager	is the exclusive manager	Forest o	Forest operation contracted/ Partnerships	tracted/ F	artnerships	Dev	volved man	Devolved management rights		Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: No extraction rights for others	Strictly limited: No extraction rights/permits rights for to hunt, gather dead wood and NWFP	Joi manag com Comm concessi	Joint forest management with communities. Community timber concessions /licenses	Private ve permi concessi	Private company volume permits/logging concession /schemes	Commur leases manaç conce	Community forest leases/forest management concessions	Private company leases/forest management concessions	st Is		
			Area:	600,000	Area:		Area:		Area:	_		11,800,000
C 4-4-			Duration:	not fixed	Duration:		Duration:		Duration:			
State		11,200,000	Number:		Number:		Number		Number:			
			Access:	Yes	Access:		Access:		Access:		•	
			Area:		Area:		Area:		Area:			
Local governments:			Duration:		Duration:		Duration:		Duration:			
regions, provinces and			Number:		Number:		Number:		Number:			
districts			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			
Local governments:			Duration:		Duration:		Duration:		Duration:			
villages, municipalities			Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			
Other within healing			Duration:		Duration:		Duration:		Duration:			
			Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:		•	
(*) Enrest Area: ha: Duration: vears: Number: number: Access: Y/N	ars' Number'num	her: Arress: Y/N										

	Owner is the exclu manager	is the exclusive manager	Forest operation contracted/ Partnerships	ntracted/	Partnerships		Devolved management rights	agement	t rights	Others	Total
Matrix 3 Detailed data private ownership	Strictly limited: No extraction rights for to hunt, gathe dead wood and NWFP	Strictly limited: No extraction rights/permits rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses		Private company volume permits/logging concession /schemes	Comm leas mar con	Community forest leases/forest management concessions	Priva lea ma cor	Private company leases/forest management concessions		
			Area:	Area:		Area:		Area:			
		•	Duration:	Duration:		Duration:		Duration:			
Individual			Number:	Number:		Number:		Number:			
			Access:	Access:		Access:		Access:			
			Area:			Area:					
la di intri on			Duration:		< 2	Duration:			V N	1	
			Number:			Number:					
			Access:			Access:				1	
			Area:	Area:		Area:		Area:			
04h			Duration:	Duration:		Duration:		Duration:			
Others			Number:	Number:		Number:		Number:			
			Access:	Access:		Access:		Access:			
	-	14/24									

	Owner is the exc manager	is the exclusive manager	Forest operation contracted/ Partnerships	tracted/ Pa	Irtnerships	Devolved	Devolved management rights	rights	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership	0)	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private voli voli permits concessio	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions		Private company leases/forest management concessions		
				Area:			Area:			
Community/Group				Duration:			Duration:			
owned/User groups			N.A.	Number:		N.A.	Number:			
				Access:			Access:			
				Area:			Area:			
Owned by indigenous or			V IV	Duration:		V N	Duration:			
tribal people			N.N.	Number:		Y.Y.	Number:			
				Access:			Access:			
			Area:	Area:	_	Area:	Area:			
Other truce of enunerchin			Duration:	Duration:		Duration:	Duration:			
Ourier types of ownership			Number:	Number:	_	Number:	Number:			
			Access:	Access:		Access:	Access:			
(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N	ars; Number:num	ber; Access: Y/N								

Myanmar

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	34,381,480	68,009	818,411		35,267,900
Private					
Community/Group owned			Corresponds to	nds to	
Owned by indigenous or tribal people			FRA data		
Other types of ownership					
Total	34,381,480	68,009	818,411		35,267,900
(*) Forest Area: ha					

(**) Ownership of the land \neq ownership of the forest

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	Ourses is the	e evelueire			_					
	Owner is une exci	is ure exclusive manager	Forest operation contracted/ Partnerships	itracted/ Partnershi	sd	Devolved man	Devolved management rights		Others	Total
Matrix 2 Detailed data public ownership	0,	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes		Community forest leases/forest management concessions	Private company leases/forest management concessions	pany est ent		
			trea:	Area: 68,009	Area:	35,478	Mrea: 329	329,244 🚩		15,391,964
C1-12	0 1 10 001		Durativ Classified under	er er	Duration:	30 renewable Duration:		30		
State	2,548,801	12,410,372	Numb the Forest Act		Number	481	Number		To private	
			Access:	Access	Access:		Access: Comn	Community	companies for	for
	Douls A shore		Area: Fores	Forest plantations	Area:		Area: forests	S	agri-crop	
	Faik-Aicas Evictore (DAC)		Duration:		Durat	Durat Kellewable	Duration:		cultivation	
provinces and	oystem. PAS		Number:	Number:	Number:		Number:			
districts			Access:	Access:	Access:		Access:		/	
			Area:	Area:	Area:		Area:			
Local governments:			Duration:	Duration:	Duration:		Duration:	_		
villages, municipalities			Number:	Number:	Number:		Number:			
			Access:	Access:	Access:		Access:		1	
			Area:	Area:	Area:		Area: 453	453,689		19,875,936
	linclaced	210 001 01	Duration:	Duration:	Duration:		Duration:	30		
	foreste		Number:	Number:	Number:		Number:			
			Access:	Access:	Access:		Access:			

	Owner is the exclusive manager	is the exclusive manager	Forest operation contracted/ Partnerships	ontracted/ F	Partnerships		Devolved management rights	agement	rights	Others	Total
Matrix 3 Detailed data private ownership	Strictly limited: No extraction rights for others	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses		Private company volume permits/logging concession /schemes	Comr lea ma	Community forest leases/forest management concessions	Priva lea ma	Private company leases/forest management concessions		
			Area:	Area:		Area:		Area:			
			Duration:	Duration:		Duration:		Duration:			
Individual			Number:	Number.		Number:		Number:			
			Access:	Access:		Access:		Access:		•	
			Area:			Area:					
Induction			Duration:	1		Duration:			V IV	•	
Industries			Number:	1	N.A.	Number:			N.A.		
			Access:	I		Access:					
			Area:	Area:		Area:		Area:			
			Duration:	Duration:		Duration:		Duration:		•	
Others			Number:	Number.		Number:		Number:			
			Access:	Access:		Access:		Access:			
(*) Formet Arrow how Diversion works and how how how Arrow V/N	down and a set of the	Access VIN									

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	Access:
	ration: years; Number:number; Access:
	years;
	orest Area: ha; Duration:
	Area:
	*) Forest
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	Owner is th man	Owner is the exclusive manager	Forest operation contracted/ Partnerships	tracted/ P	artnerships	Devo	olved mana	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigenou s/Other ownership	0,	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private volume pe concessi	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	y forest orest ment sions	Private company leases/forest management concessions		
				Area:				Area:		
Comminitu(Ground				Duration:				Duration:		
			N.A.	Number:		N.A.		Number.		
ownearuser groups				Access :				Access :		
				Area:				Area:		
Owned by indigenous or			¢ I4	Duration:		4		Duration:		
tribal people				Number:		Č.		Number:		
				Access:				Access:		
			Area:	Area:		Area:		Area:		
Other france of enumerable			Duration:	Duration:		Duration:		Duration:		
Outer types of ownership			Number:	Number:	-	Number:		Number.		
			Access:	Access:	~	Access:		Access:		
	N	11/11								

Nepal

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	4,674,607		1,195,563		5,870,170
Private	3,081		Correspond to FRA 2005 data.	ata.	3,081
Community/Group owned			Forests (about 3.6 mill ha) + OWL	+ OWL	
Owned by indigenous or tribal people	57				57
Other types of ownership	804				804
Total	4,678,549		1,195,563		5,874,112
(*) Forest Area: ha					

(**) Ownership of the land = ownership of the forest

	Owner is the exclusive manager	exclusive ger	Forest operation contracted/ Partnerships	contracted/	Partnerships	De	Devolved management rights	lagement I	rights	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: Strictly limited: No extraction rights for to hunt, gather others and NWFP	User rights/ Customary ights/Permits o hunt, gather dead wood and NWFP	Joint forest management with communities. Community timber concessions /licenses		Private company volume permits/logging concession /schemes	Commu leases manaç conce	Community forest leases/forest management concessions	Private leas, man cono	Private company leases/forest management concessions		
			Area:	Area:		Area:	1,195,347	Area:	216		5,870,021
Ctate		1 674 150	Duration:	Duration:		Duration:	5-40	Duration:	15-49		
State		4,0/4,430	Number:	Number:		Number	16,682	Number:	10	• • •	
	including		Access:	Access:		Access:	/ou	Access:	on	Industries	S
	protected areas	S	Area:	Area:		Area:		Area:			99
Local governments:		ŭ	Duration:	Duration:		Duration:		Duration:			
regions, provinces and		00	Number:	1.184.821	-1.184.821 ha = Community	Inity		Number:			
districts			Access:	-)	Forestry, 5 year agreements	ents		Access:			
			Area:	o ((mono).	renewshler 14201 near around			Area:			83
Local governments:		00				edno iĥ		Duration:			
villages, municipalities		03	Number:	CH PCP OF	- I occord	Lo unctro		Number:			
			Access:		-10, 320 IId = Leaselloid Forests;	ruresus;		Access:			
			Area:	+u year agi	40 year ayreemenus; 2,441 leases	HT lease	0	Area:			
			Duration:					Duration:			
Other public podies			Number:					Number:			
			Access:	Access:		Access:		Access:			
(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N	ars; Number:numbe	er; Access: Y/N									

	Owner is th man	Owner is the exclusive manager	Forest operation contracted/ Partnerships	ntracted/ P	artnerships	Devo	olved man	Devolved management rights	Others	Total
Matrix 3 User rights/ Customary Detailed data private ownership No extraction rights for others User rights/ customary	Strictly limited: No extraction rights for others and NWFP	ictly limited: Dustomary Customary Customary Customary rights/ rights/ rights/ rights/ rights/ rights/ rights/ customary advection rights/ customary rights/ customary advection rights/	Joint forest management with communities. Community timber concessions /licenses		Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	ty forest forest ament sions	Private company leases/forest management concessions		
		2100 individual		Area:		Area:		Area:		2,333
			Inuals	Duration:		Duration:		Duration:	1	
Individual	2,333		Number:	Number:		Number:		Number:		
			Access:	Access:		Access:		Access:	I	
			Area:			Area:				
الممانية من المسالم المالية المسالم المالية المالية المالية المالية المالية المالية المالية المالية المالية الم المالية المالية ا			Duration:	-		Duration:		V IA		
saliisuu			Number:	-		Number:				
		3 educati	3 educational institutes	_		Access:				
044020	077					Area:		Area:		748
Outers	/ 40		Access:	Access:		Access:		Access:		
(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N	ars; Number:num	ber; Access: Y/N								

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Area:
Forest

	Owner is the excl manager	is the exclusive manager	Forest operation contracted/ Partnerships	tracted/ Pa	artnerships	Devo	lved man	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership	St N	Strictly limited: No extraction rights/or to hunt, gather others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private vo permiti concessic	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	y forest orest ment iions	Private company leases/forest management concessions		
				Area:				Area:		
Community/Group			N N	Duration:				Duration:		
owned/User groups			N.A.	Number:		N.A.		Number:		
		onopipui C V		Access:				Access:		
			5	Area:				Area:		57
Owned by indigenous or	2	groups	Ţ	Duration:		4		Duration:		
tribal people	10		.Y.N	Number:		Ϋ́.Υ		Number:		
		A Daliaioue		Access:				Access:		
				Area:		Area:		Area:		804
Other trace of summer		Sduure		Duration:		Duration:		Duration:		
	004			Number:		Number:		Number.		
			ACCESS.	Access:		Access:		Access:		
(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N	ars; Number:num	ber; Access: Y/N								

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Pakistan

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	2,408,000				2,408,000
Private				437,000	437,000 437,000
Community/Group owned				803,000	803,000
Owned by indigenous or tribal people			slightly lower then FRA 2005 data.	data.	
Other types of ownership			Forests + UWL		
Total	2,408,000			1,240,000	1,240,000 3,648,000
(*) Forest Area: ha	able of the format				

(**) Owership of the land = ownership of the forest

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	Owner is th man	Owner is the exclusive manager	Forest operation contracted/ Partnerships	tion contr	acted/ Pa	rtnerships	ă	evolved man	Devolved management rights	Others	Total
Matrix 2 Detailed data public ownership		Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses		Private c volu permits concessior	Private company volume permits/logging concession /schemes	Commu lease mans conc	Community forest leases/forest management concessions	Private company leases/forest management concessions		
			Area:	A	Area:	×	Area:		Area:		2,200,000
C toto	171000	000 902	Duration:		Duration:		Duration:		Duration:		
oldle	1,474,000	1 20,000	Number:	z	Number:		Number		Number:		
			Access:	A	Access:	×	Access:		Access:		
			Area:	A	Area:	×	Area:		Area:		
Local governments:			Duration:		Duration:		Duration:		Duration:		
regions, provinces and			Number:	z	Number:		Number:		Number:		
districts			Access:	Ā	Access:	×	Access:		Access:		
			Area:	A	Area:	Y	Area:		Area:		208,000
Local governments:			Duration:	D	Duration:		Duration:		Duration:		
villages, municipalities	ZUQ,UUU		Number:	z	Number:		Number:		Number:		
			Access:	Ā	Access:	×	Access:		Access:		
			Area:	A	Area:	×	Area:		Area:		
Other withlie healing			Duration:		Duration:		Duration:		Duration:		
			Number:	z	Number:		Number:		Number:		
			Access:	A	Access:	*	Access:		Access:		

	Owner is th man	Owner is the exclusive manager	Forest operation contracted/ Partnerships	ontracted/	Partnerships		Devolved management rights	agement	rights	Others	Total
Matrix 3 User rights/ Strictly limited: Detailed data private ownership No extraction No extraction rights for others User rights/ adead wood and NWFP	Strictly limited: No extraction rights for others	User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	Joint forest management with communities. Community timber concessions /licenses		Private company volume permits/logging concession /schemes	Comr lea mai	Community forest leases/forest management concessions	Privat leas mar con	Private company leases/forest management concessions		
			Area:	Area:		Area:		Area:			437,000
		•	Duration:	Duration:		Duration:		Duration:		000 201	
Individual			Number:	Number:		Number:		Number:		437,000	
			Access:	Access:		Access:		Access:			
			Area:			Area:					
			Duration:		V 14	Duration:		_			
linaustries			Number:		.Y.Z	Number:		_	N.A.		
			Access:			Access:		_			
			Area:	Area:		Area:		Area:			
Others.			Duration:	Duration:		Duration:		Duration:			
Others			Number:	Number:		Number:		Number:			
			Access:	Access:		Access:		Access:			

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	Owner is th man	Owner is the exclusive manager	Forest operation contracted/ Partnerships	tracted/ Partner	ships	Devolved man	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership	z S	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes	any ing nemes	Community forest leases/forest management concessions	Private company leases/forest management concessions		
				Area:			Area:		803,000
Community/Group			V IV	Duration:		4	Duration:		
owned/User groups			N.N.	Number:		۲.N	Number.	000,000	
				Access:			Access:		
				Area:			Area:		
Owned by indigenous or			V IV	Duration:		4	Duration:		
tribal people			.Y.N	Number:		.Y.Y.	Number:		
				Access:			Access:	_	
			Area:	Area:	Area:		Area:		
Other truce of summer bin			Duration:	Duration:	Dura	Duration:	Duration:		
Other types of ownership			Number:	Number:	Nun	Number:	Number:		
			Access:	Access:	Access	ess:	Access:		
(*) Formet Armer her Directions second Number Armer Armer Armer V/N	and a second	Loui Access V/N							

Philippines

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	4,253,127	1,432,640	4,904,116	3,265,039	13,854,922
Private	32,793		Unallocated	ated	32,793
Community/Group owned			forest lands	ands	
Owned by indigenous or tribal people	358,459		Classified forest land. According to FRA 2005, Forests + OWI = 10 773	-0 -0	358,459
Other types of ownership					
Total	4,644,379	1,432,640	4,904,116	3,265,039	3,265,039 14,246,174
(*) Forest Area: ha					

(**) Ownership of the land = ownership of the forest

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	Owner is the exclusive manager	e exclusive ager	Forest o	Forest operation contracted/ Partnerships	tracted/ F	artnerships	1	Devolved management rights	agement	: rights	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: Strictly limited: No extraction rights for to hunt, gather others and NWFP	User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	Joi manag com Comm concessi	Joint forest management with communities. Community timber concessions /licenses	Private ve permi concessi	Private company volume permits/logging concession /schemes	Comm leas mar con	Community forest leases/forest management concessions	Priva lea ma co	Private company leases/forest management concessions		
			Area:		Area:	1,432,640	Area:	4,272,926	Area:			13,223,732
Ctata	1 762 107		Duration:		Duration:	25	Duration:	25	Duration:		2 765 020	
State	4,200,121		Number:		Number:	2,430	Number	2,079	Number:		o,200,009	
			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			
Local governments:			Duration:		Duration:		Duration:		Duration:			
regions, provinces and			Number:		Number:		Number:		Number:			
districts			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:	631,190	Area:			631,190
Local governments:			Duration:		Duration:		Duration:	25	Duration:			
villages, municipalities			Number:		Number:		Number:	3,073	Number:			
			Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:			
Other within healing			Duration:		Duration:		Duration:		Duration:			
			Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			
/*) Ecreet Area: ba: Duration: wears: Mumber: Merces: V/M	re. Numberanmi	NOCCOSCI VIN										

	Owner is th man	Owner is the exclusive manager	Forest operation contracted/ Partnerships	itracted/ Partnership		Devolved management rights	Others	Total
Matrix 3 Detailed data private ownership	Zt St	Strictly limited: No extraction rights/for to hunt, gather dead wood and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	Private company leases/forest management concessions		
			Area:	Area:	Area:	Area:		
			Duration:	Duration:	Duration:	Duration:		
Individual		91 industries	ies	Number:	Number:	Number:		
				Access:	Access:	Access:		
			Area:		Area:			32,793
ويعاددوني والمترادين	002 UC		Duration:	4	Duration:	4		
Industries	32,133		Number:	N.A.	Number:	N.A.		
			Access:		Access:			
			Area:	Area:	Area:	Area:		
Others			Duration:	Duration:	Duration:	Duration:		
Outers			Number:	Number:	Number:	Number.		
			Access:	Access:	Access:	Access:		
(*) Forest Area: ha: Duration: vears: Number:nur	n vears. Num	ber:number: Ad	mber: Access: Y/N					

(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N Mr. Mayumi Quintos-Natividad, Forest Management Bureau

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	Owner is the excl manager	e exclusive ager	Forest operation contracted/ Partnerships	tracted/ Partne	ships	Devolved ma	Devolved management rights	Oth	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership	0)	No extraction rights/ rights for to hunt, gather others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes	any ling nemes	Community forest leases/forest management concessions	Private company leases/forest management concessions	and t t t		
				Area:			Area:			
Community/Group			V IV	Duration:		< 14 14	Duration:			
owned/User groups			.4.2	Number:		.Y.Y	Number:			
				Access:			Access:			
				Area:			Area:			358,459
Owned by indigenous or	358 450		M A	Duration:		N A	Duration:			
tribal people	00t.000			Number:			Number:			
				Access:			Access:			
			Area:	Area:	Area:	a:	Area:			
Other truce of cumerchin		•	Duration:	Duration:	Dur	Duration:	Duration:			
			Number:	Number:	Nun	Number:	Number.			
			Access:	Access:	Acc	Access:	Access:			

(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N

Sabah - Malaysia

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	575,030	129,238	2,082,371	63,718	2,850,357
Private	91,920				91,920
Community/Group owned					
Owned by indigenous or tribal people					
Other types of ownership	60,000				60,000
Total	726,950	129,238	2,082,371	63,718	63,718 3,002,277
(*) Forest Area: ha					

(**) Ownership of the land = ownership of the forest

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	Owner is the exc manager	Owner is the exclusive manager	Forest op	Forest operation contracted/ Partnerships	tracted/ Pa	artnerships	Devol	ved mana	Devolved management rights	ghts	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: No extraction rights for others	Strictly limited: No extraction rights for others and NWFP	Joint manager commu Commun concessior	Joint forest management with communities. Community timber concessions /licenses	Private volume pe concessic	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	forest irest nent ons	Private leases manaç conce	Private company leases/forest management concessions		
		4	Area:		Area:	129,238	Area:		Area:	2,082,371 🗡	63,718	2,850,357
C toto	910 010	- - -	Duration:		Duration:	38,473	Duration:		Duration:	100 /		
oldle	243,210	410,100	Number:		Number:	108	Number		Number:	14		
		4	Access:		Access:	Yes	Access:		Access:	Yeks		
		4	Area:		Area:		Area:		Area:			
Local governments:			Duration:	Special licenses	censes		Duration:		Du SFMLA		SAFODA	
regions, provinces and		2	Number:		1		Number:		Nu		rehabilitation	ion
districts		4	Access:		Access:		Access:		Access:		areas	
		4	Area:		Area:		Area:		Area:			
Local governments:			Duration:		Duration:		Duration:		Duration:			
villages, municipalities		2	Number:		Number:		Number:		Number:			
		P	Access:		Access:		Access:		Access:			
		4	Area:		Area:		Area:		Area:			
Other sublic hediec			Duration:		Duration:		Duration:		Duration:			
		2	Number:		Number:		Number:		Number:			
		4	Access:		Access:		Access:		Access:			

	Owner is the exclusive manager	is the exclusive manager	Forest op	Forest operation contracted/ Partnerships	tracted/ Par	tnerships	Dev	volved man	Devolved management rights	Others	Total
Matrix 3 Detailed data private ownership	Strictly limited: No extraction rights for others and NWFP	User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	Joint manager comm Commun concession	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes	Private company volume permits/logging concession /schemes	Commun leases manag conce	Community forest leases/forest management concessions	Private company leases/forest management concessions		
			Area:		Area:	1	Area:		Area:		3,190
احدثه فالمعال	001 0		Duration:		Duration:		Duration:		Duration:		
Individual	3,130		Number:		Number:	2	Number:		Number:		
			Access:		Access:	1	Access:		Access:		
			Area:			4	Area:				88,730
laditric	00 7 20	/	Duration:			•	Duration:				
seinen	00'100	of which	of which 60,618		/N		Number:		Y.Y.		
		owned b	owned by the SSSB	8		4	Access:				
					Area:	4	Area:		Area:		
Othors					Duration:		Duration:		Duration:		
Others			Number:		Number:	2	Number:		Number:		
			Access:		Access:	1	Access:		Access:		

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	Owner is the exclusive manager	e exclusive ager	Forest operation contracted/ Partnerships	tracted/ Partnership		olved man	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigenou s/Other ownership	Strictly limited: No extraction rights for others	Strictly limited: No extraction rights/Permits rights for to hunt, gather others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes	ŏ	mmunity forest leases/forest management concessions	Private company leases/forest management concessions		
				Area:			Area:		
Community/Group			N N	Duration:	4		Duration:		
owned/User groups			N.Y.	Number:		ć	Number:		
				Access:			Access:		
				Area:			Area:		
Owned by indigenous or			N N	Duration:	Ā	~	Duration:		
tribal people			۲.۲.	Number:		ć	Number:		
		CHENER	Bonst ista	Access:			Access:		
			niertozan	Area:	Area:		Area:		60,000
Other types of eurorship	60,000	Sudu		Duration:	Duration:		Duration:		
One in the of owners in the				Number:	Number:		Number:		
			100000.	Access:	Access:		Access:		

Thailand

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	rights	Other	Total
Public	15,711,479		248,020			15,959,499
Private	1,050,753					1,050,753
Community/Group owned					ſ	
Owned by indigenous or tribal people			<u><u> </u></u>	Higher then surface reported in FRA 2005	face 2005	
Other types of ownership						
Total	16,762,232		248,020			17,010,252
(*) Forest Area: ha						

(**) Ownership of the land = ownership of the forest

	Owner is th man	Owner is the exclusive manager	Forest o	Forest operation contracted/ Partnerships	tracted/ P	artnerships	ŏ	evolved man	Devolved management rights	Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: No extraction rights for others	User rights/ Strictly limited: Customary No extraction rights/Permits rights for to hunt, gather others and NWFP		Joint forest management with communities. Community timber concessions /licenses	Private vc permii concessi	Private company volume permits/logging concession /schemes	Commu lease mana conc	Community forest leases/forest management concessions	Private company leases/forest management concessions		
			Area:		Area:		Area:	248,020	Area:		15,959,499
Ctate	0 201 570	6 120 000	Duration:		Duration:		Duration:	10	Duration:	1	
State	9,281,370	0,429,909	Number:		Number:	_	Number	10,554	Number:	1	
			Access:		Access:		Access:		Access:		
			Area:		Area:		Area:				
Local governments:			Duration:		Duration:	_	Duration:				
regions, provinces and			Number:		Number:		Number:		Number:		
districts			Access:		Access:		Access:		Access:		
			Area:		Area:		Area:		Area:		
Local governments:			Duration:		Duration:	_	Duration:		Duration:		
villages, municipalities			Number:		Number:	_	Number:		Number.		
			Access:		Access:		Access:		Access:		
			Area:		Area:	~	Area:		Area:		
Other authlic hedioc			Duration:		Duration:		Duration:		Duration:		
			Number:		Number:	_	Number:		Number.		
			Access:		Access:		Access:		Access:		
(*) Forest Area: ha; Duration: years; Number:number; Access: Y/N	ars; Number:num	ber; Access: Y/N									

	Owner is the exclusive manager	is the exclusive manager	Forest operation contracted/ Partnerships	ntracted/ F	artnerships	Devo	lved man	Devolved management rights	s	Others	Total
Matrix 3 Detailed data private ownership	Strictly limited: No extraction rights for to hunt, gather others and NWFP	User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	Joint forest management with communities. Community timber concessions /licenses		Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	y forest orest ment sions	Private company leases/forest management concessions	npany est nent ons		
			Area:	Area:		Area:		Area:			485,925
Individual	485,925		Duration:	Duration:		Duration:		Duration:			
			Number:	Number:		Number:		Number.		•	
		-	Access:	Access:		Access:		Access:			
			Area:			Area:					564,828
la di cotatione	261 070		Duration:		< 14	Duration:					
	004,020		Number:		.K.M	Number:		Υ.N			
		-	Access:			Access:					
			Area:	Area:		Area:		Area:			
Others			Duration:	Duration:		Duration:		Duration:			
Ouriers			Number:	Number:		Number:		Number:			
			Access:	Access:		Access:		Access:			

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	Owner is the exclusive manager	is the exclusive manager	Forest operation contracted/ Partnerships	ntracted/ F	artnerships	Devolved	managen	Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigeno us/Other ownership		Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Privato vv permi concessi	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions		Private company leases/forest management concessions		
				Area:			Area:			
Community/Group			4	Duration:		A IA	Duration:	on:		
owned/User groups			N.A.	Number:		N.A.	Number	er:		
				Access:			Access:	s:		
				Area:			Area:			
Owned by indigenous or			V IV	Duration:		V N	Duration:	on:		
tribal people				Number:		Y.Y.	Number	er:		
				Access:			Access:	S:		
			Area:	Area:	4	Area:	Area:			
Other trace of some bin			Duration:	Duration:		Duration:	Duration:	on:		
Uther types of ownership			Number:	Number:	2	Number:	Number	er:		
			Access:	Access:	4	Access:	Access	s:		
	All the base of the second second	Law Assess VIAI								

Vietnam

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	6,066,421		3,368,273		9,434,694
Private	2,871,165				2,871,165
Community/Group owned			Correspond to FRA	to FRA	
Owned by indigenous or tribal people			2005 data		
Other types of ownership					
Total	8,937,586		3,368,273		12,305,859
(*) Forest Area: ha					

(*) Forest Area: ha (**) Ownership of the land = ownership of the fo

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	Owner is the exclusive manager	e exclusive ager	Forest operation con	Forest operation contracted/ Partnerships	Devolved n	Devolved management rights	Others	Total
Matrix 2 Detailed data public ownership	User rights/ Strictly limited: No extraction rights for others and NWFP	User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	t Private company leases/forest management concessions		
			Mrea:	Area:	Area: 284,632	Area: 3,083,641		6,430,366
Ctoto		, 060 000	Duration:	Duration:	Duration:	Duration: 50		
oldle		2,002,033	Number:	Number: Co	Collectives	Number		
		4	Management	Access:	Access:	Access:		
			hoarde	Area:		Area:		
Local governments:		_	Ch IBOO	Duration:	Duration: State	State enterprises		
regions, provinces and		6		Number:	Number: and	and Joint ventures		
districts	reopies	/	Access:	Access:	Access:			
	committees/2		Area:	Area:	Area:			2,707,140
Local governments:			Duration:	Duration:	Duration:	Duration:		
villages, municipalities		2,707,140	Number:	Number:	Number:	Number		
			Access:	Access:	Access:	Access:		
			Area:	Area:	Area:	Area:		297,188
	100	Army's units	ts	Duration:	Duration:	Duration:		
Other public boales	291,100			Number:	Number:	Number:		
			Access:	Access:	Access:	Access:		
/*/ Fornet Arrest Portion: Vientions (Viention Viention Viention)	re: Number: aumh	or: Access: V/N						

	Owner is th man	Owner is the exclusive manager	Forest o	Forest operation contracted/ Partnerships	tracted/ P	artnerships		Devolved management rights	agement ı	ights	Others	Total
Matrix 3 Detailed data private ownership	Strictly limited: No extraction rights for others and NWFP	User rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	Join manage comr Commu concessid	Joint forest management with communities. Community timber concessions /licenses	Private volume pe concessi	Private company volume permits/logging concession /schemes	Comr leas mar con	Community forest leases/forest management concessions	Private leas man cono	Private company leases/forest management concessions		
			Area:		Area:		Area:		Area:			2,871,165
	0.074.405		Duration:		Duration:		Duration:		Duration:			
Inalviauai	2,071,100	Individual			Number:		Number:		Number:			
		households	s		Access:		Access:		Access:			
		(50 years					Area:					
		allocation)/2	1/2			<	Duration:		-			
saliausuilles					-		Number:		-	N.A.		
			Access:				Access:					
			Area:		Area:		Area:		Area:			
Other and			Duration:		Duration:		Duration:		Duration:			
Others			Number:		Number:		Number:		Number:			
			Access:		Access:		Access:		Access:			

	Owner is the exc manager	is the exclusive manager	Forest operation con	Forest operation contracted/ Partnerships		Devolved management rights	Others	Total
Matrix 4 Detailed data Community/Indigenou s/Other ownership	0,	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses	Private company volume permits/logging concession /schemes	Community forest leases/forest management concessions	Private company leases/forest management concessions		
				Area:		Area:		
Community/Group			V IV	Duration:	× Z	Duration:		
owned/User groups			N.Y.	Number:	Ч.Ч.	Number:	•	
				Access:		Access:	•	
				Area:		Area:		
Owned by indigenous or			V N	Duration:	< N	Duration:		
tribal people				Number:		Number:		
				Access:		Access:		
			Area:	Area:	Area:	Area:		
Other tringe of summer his			Duration:	Duration:	Duration:	Duration:		
Uther types of ownership			Number:	Number:	Number:	Number:		
			Access:	Access:	Access:	Access:		
(*) Forest Area: ha; Duration: years; Number: number; Access: Y/N	rs; Number: numb	oer; Access: Y/N						

Yunnan - China

Matrix 1 Cumulative Data	Owner is the exclusive manager	Forest operation contracted/ Partnerships	Devolved management rights	Other	Total
Public	4,638,750		18,555,000	2	23,193,750
Private					
Community/Group owned				Includes State and	
Owned by indigenous or tribal people			Collect	Collective forests	
Other types of ownership			<u></u>		1
Total	4,638,750		18,555,000	2	23,193,750
(*) Forest Area: ha (**) Ownership of the land = ownership of the forest	rship of the forest				

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	Owner is the exclusive manager	e exclusive ager	Forest ope	Forest operation contracted/ Partnerships	tracted/ Pa	artnerships		De	volved m	Devolved management rights	hts		Others	Total
Matrix 2 Detailed data public ownership	Strictly limited: Customary No extraction rights/Permit rights for to hunt, gathe others and NWFP	User rights/ No extraction rights/Permits rights for to hunt, gather others and NWFP	Joint forest management with communities. Community timber concessions /licenses	forest nent with unities. ity timber s /licenses	Private vol permiti concessio	Private company volume permits/logging concession /schemes	Ind	Individuals / households leases	Com Lea	Community forest leases/forest management concessions	Private company leases/forest management concessions	any st s		
			Area:		Area:		Area:		Area:		Area:			4,638,750
Ctoto	1 620 750		Duration:		Duration:		Duration:		Duration:		Duration:		1	
State	4,030,730		Number:	-	Number:		Number		Number		Number:		1	
			Access:		Access:		Access:		Access:		Access:			
			Area:		Area:		Area:		Area:		Area:	Contracting	bu	
Local governments:			Duration:	Shared responsibility	sponsibi		Duration:		Duration:		Duration: OI	operations and	s and	
regions, provinces and			Number:	hills			Number:	/	Number:		Number: M	management	ient	
districts			Access:	6,332,000 ha;	0 ha;		Access:		Access:		Access:	-		
			Area:	1			Area:	11,173,000	Area:	6,604,500	¥rea: 777,500	200		18,555,000
Local governments:			Duration:	Free holding hills	ing hills		Duration:		Duration:		Duration:		1	
villages, municipalities			Number:	4,841,000;	, ä		Number:		Number:		Number:		1	
			Access:		-		Access:		Access:		Acress			Collective
		-	Area:	3.5 million	ç		Area:		Area:	CONECTIVE	A CONTRACTOR			morchin
Other wihlie hedies			Duration:	households	- sp		Duration:		Duration:	respon	responsibility nills		8	
			Number:		-		Number:		Number:		Number:		J	
			Access:		Access:		Access:		Access:		Access:		1	

	Owner is the exclusive manager	is the exclusive manager	Forest operation contracted/ Partnerships	ontracted/	Partnerships		Dev	Devolved management rights	tement rig	hts	Others	Total
Matrix 3 Detailed data private ownership	IJ, Ż	Strictly limited: No extraction rights for others and NWFP	Joint forest management with communities. Community timber concessions /licenses		Private company volume permits/logging concession /schemes	lindi	lindividuals / households leases	Community forest leases/forest management concessions	y forest orest ment ions	Private company leases/forest management concessions		
			Area:	Area:		Area:		Area:		Area:		
			Duration:	Duration:		Duration:		Duration:		Duration:		
Individual			Number:	Number:		Number:		Number:		Number:		
			Access:	Access:		Access:		Access:		Access:		
			Area:			Area:		Area:				
Inditional and			Duration:			Duration:		Duration:		V N		
			Number:		K	Number:		Number:		Y.Y.		
			Access:			Access:		Access:				
			Area:	Area:		Area:		Area:		Area:		
Othoma		_	Duration:	Duration:		Duration:		Duration:		Duration:		
Others		-	Number:	Number:		Number:		Number:		Number:		
		_	Access:	Access:		Access:		Access:		Access:		
(*) Forest Area: ha; Duration: years; Number: number; Access: Y/N	irs; Number: numb	ier; Access: Y/N										

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	Owner is the exclusive manager	is the exclusive manager	Forest operation con	Forest operation contracted/ Partnerships		Dev	Devolved management rights	ghts	Others	Total
Matrix 4 Detailed data Community/Indigenou s/Other ownership	Strictly limited: User rights/ No extraction rights/Permit rights for to hunt, gathe dead wood and NWFP	Strictly limited: No extraction rights/Permits rights for to hunt, gather others and NWFP	Joint forest management with community timber concessions /licenses	Private company volume permits/logging concession /schemes		lindividuals / households leases	Community forest leases/forest management concessions	Private company leases/forest management concessions		
				Area:	Area:			Area:		
Community/Group			4	Duration:	Duration:		V IV	Duration:		
owned/User groups			N.Y.	Number:	Number:		N.A.	Number:	1	
				Access:	Access:			Access:	1	
				Area:	Area:			Area:		
Owned by indigenous or			V N	Duration:	Duration:		V N	Duration:		
tribal people			۲.N	Number:	Number:		Y.Y.	Number:		
				Access:	Access:			Access:		
			Area:	Area:	Area:		Area:	Area:		
Other types of cumerchin			Duration:	Duration:	Duration:		Duration:	Duration:		
Ourier types of ownership			Number:	Number:	Number:		Number:	Number:		
			Access:	Access:	Access:		Access:	Access:		

FORESTRY POLICY AND INSTITUTIONS WORKING PAPERS

No.	Title	
1	Understanding the interface between natural woodlands and HIV/AIDS-affected communities in Southern Africa. FAO Seminar proceedings, Harare, Zimbabwe. Rome. 2004.	
2	<i>Miombo woodlands and HIV/AIDS interactions: Mozambique country report,</i> by Almega A. Sitoe. Rome. 2004.	
3	Forestry Education in Sub-Saharan Africa and Southern East Asia: Trends, myths and realities, by A.B. Temu, P.G. Rudebjer, J. Kiyiapi and P. van Lierop. FAO, Anafe, SEANAFE. 2004.	
4	Simpler Forest Management Plans for Participatory Forestry. 2004.	
5	The management of villagers owned stone pine plantations in Kozak Region, Turkey: a case study, by M. Sulusoglu. 2004.	
6	<i>Miombo woodlands and HIV/AIDs interactions: Malawi country report</i> , by D. Kayambazinthu, M.Barany, R. Mumba and C. Holding Anyonge. 2005.	
7	Exploring options for joint forest management in India, by K.D. Singh, B. Sinha, & S.D. Mukherji. World Bank/ WWF Alliance Project. 2004.	
8	Empowering communities through Forestry. The Market Analysis and Development (MA&D) experience in the Gambia. By Almamy Dampha and Kanimang Camara. 2005.	
9	Tree seed education at agricultural and forestry colleges in eastern and southern Africa. An interactive needs assessment and proposed curriculum . By Christine Holding Anyonge and August Temu, in association with T.V. Balole and E. Sabas. 2005.	
10	Desarrollo empresarial comunitario de Biocomercio Sostenible en Colombia. Aplicación de la A Metodología Análisis y Desarrollo de Mercado. Para Becerra Maria Teresa, Cendales Maria Helena, Lozada Paola Andrea, Gómez José Antonio, Grouwels Sophie. 2006.	
11	Community based enterprise development for the conservation of biodiversity in Bwindi World Heritage Site, Uganda. 2006.	
12	Community-based tourism: income generation and conservation of biodiversity in Bwindi World Heritage Site, Uganda. The Buhoma Village Walk Case Study. 2006.	
13	État et besoins d'enseignement en politique forestière dans les pays en développement et en transition. Résultats et recommandations d'une enquête. 2006.	
14	Understanding Forest Tenure in South and Southeast Asia. 2006.	

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