

ASIA-PACIFIC FORESTRY SECTOR OUTLOOK STUDY II

WORKING PAPER SERIES

Working Paper No. APFSOS II/WP/2009/24

**IS THERE A FUTURE ROLE FOR FORESTS AND
FORESTRY IN REDUCING POVERTY?**

by

**The Regional Community Forestry Training Center
Bangkok**



**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
REGIONAL OFFICE FOR ASIA AND THE PACIFIC**

Bangkok, 2009

Acknowledgements

The following paper was commissioned and funded by the United Nation's Food and Agriculture Organization (FAO) regional office for Asia and the Pacific. The Regional Community Forestry Training Center (RECOFTC) provided matching in-kind funds.

Thanks are due particularly to the three main authors of the paper, Thomas Enters, Mark Sandiford and Yurdi Yasmi. The authors wish to acknowledge the considerable technical input provided in the development of this paper from various FAO staff notably C.T.S. Nair, Patrick Durst and Jeremy Broadhead. Additional contributions from Sango Mahanty and Mary Hobley have been greatly appreciated.

This paper and the errors and opinions therein are entirely those of the authors and in no way reflect the opinions or position of either FAO or RECOFTC.

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INFORMATION NOTE ON THE ASIA-PACIFIC FORESTRY SECTOR OUTLOOK STUDY

The Asia-Pacific Forestry Sector Outlook Study (APFSOS) is a wide-ranging initiative to gather information on, and examine, the evolution of key forestry issues as well as to review important trends in forests and forestry. The main purpose of the study is to provide a better understanding of the changing relationships between society and forests and thus to facilitate timely policy reviews and reforms in national forest sectors. The specific objectives are to:

1. Identify emerging socio-economic changes impacting on forest and forestry
2. Analyze probable scenarios for forestry developments to 2020
3. Identify priorities and strategies to address emerging opportunities and challenges

The first APFSOS was completed in 1998, with an outlook horizon to 2010. During its twenty-first session, held in Dehradun, India, in April 2006, the Asia-Pacific Forestry Commission (APFC) resolved to update the outlook extending the horizon to 2020. The study commenced in October 2006 and is expected to be completed by September 2009.

The study has been coordinated by the Food and Agriculture Organization of the United Nations (FAO), through its regional office in Bangkok and its headquarters in Rome, and implemented in close partnership with APFC member countries with support from a number of international and regional agencies. The Asian Development Bank (ADB), the International Tropical Timber Organization (ITTO), and the United Kingdom's Department for International Development (DFID) provided substantial financial support to implement the study. Partnerships with the Asia-Pacific Association of Forest Research Institutes (APAFRI) and the Secretariat of the Pacific Community (SPC) supported the organizing and implementing of national focal points' workshops and other activities, which have been crucial to the success of this initiative. The contributions of many other individuals and institutions are gratefully acknowledged in the main APFSOS report.

Working papers have been contributed or commissioned on a wide range of topics. These fall under the following categories: country profiles, sub-regional studies and thematic studies. Working papers have been prepared by individual authors or groups of authors and represent their personal views and perspectives; therefore, opinions expressed do not necessarily reflect the views of their employers, the governments of the APFC member countries or of FAO. Material from these working papers has been extracted and combined with information from a wide range of additional sources to produce the main regional outlook report.

Working papers are moderately edited for style and clarity and are formatted to provide a measure of uniformity, but otherwise remain the work of the authors. Copies of these working papers, as well as more information on the Asia-Pacific Forestry Sector Study, can be obtained from:

Mr. Patrick Durst
Senior Forestry Officer
FAO Regional Office for Asia and the Pacific
39 Phra Atit Road
Bangkok 10200
THAILAND
Ph. (66-2) 697 4000
Fax: (66-2) 697 4445
Email: patrick.durst@fao.org

PROLOGUE

Two research teams have recently made astonishing discoveries regarding the future role of forests and forestry in poverty reduction. Based on a sophisticated modeling exercise they reached the same conclusion — forests and forestry have little or no future role in poverty elimination. Hard to believe! Can it be true?

The first team concluded that by 2020 most forests in the Asia-Pacific region will have been replaced by other land uses. The model is based on the assumption that due to population growth, economic growth and escalating energy prices vast areas of what currently constitutes the region's forest estate will have been converted to agricultural areas and bioenergy plantations. Smaller but still significant areas will make way for infrastructure, industrial estates and residential areas. Of the once abundant resource, what remains will be strictly protected making the resettlement of many people necessary. The result of the predicted land-use change is that the role of forests and forestry in poverty reduction does not have to be contemplated anymore. Forests will be either out of reach or will have simply disappeared. Forestry, as we know it today, will not exist anymore and will at best have been completely replaced by protected area management.

The second team of researchers concluded that by 2020 the number of poor people with a daily income of less than US\$1 will have approached zero. The Millenium Development Goal I (MDG I) of halving the number of poor people by 2015 will have been surpassed beyond all expectations. This will have arisen principally due to rapid economic growth in the region and increasing options for employment and greater income in the secondary and tertiary sectors. Those previously dependent on forests will have left and incomes of less than US\$1 a day will belong to the past. The role of forests as safety nets will have disappeared and incomes will be generated away from the forest, most into urban areas. People will not only be too busy to farm they will have even less time or need to visit forests to hunt and gather the forest products they have relied on for centuries. As a result the role of forests and forestry in poverty reduction does not have to be contemplated anymore.

These teams do not exist. The research results are conjecture and were never scientifically published. However, looking forward to 2020, what situation somewhere between the two extremes proposed will have evolved? To what extent will MDG I have been achieved by 2020? Will forests continue to be a major component of the landscape in many countries in the Asia-Pacific region? Will we finally be able to make realistic and measured judgements in light of the essential complexity inherent in the problem — the role of forests and forestry in poverty reduction and the livelihoods of millions of people in the region?

Our main aim in this paper is to discuss the current development and trends in the region and to assess to what extent forests and forestry contribute to poverty elimination. We also attempt to provide a number of possible directions that forestry will likely take in the next decade in light of rapid changes in other sectors in order to discuss whether forests and forestry will have any significant role in poverty reduction. We have to warn the reader at the outset that this report is not meant to provide a final answer to all questions posted above but rather to trigger more insightful research and discussion on the role of forests and forestry for poverty reduction in the Asia-Pacific region.

1. INTRODUCTION

Asia's human populations are, like their forests, multifarious and the application of generalizations is loaded with caveats. We acknowledge at the outset the great diversity among countries or different parts of a country in virtually any characteristics, be they environmental situations, cultures, political systems, population densities or growth and economies. While the region as a whole may be moving in a particular direction, such as achieving the MDGs, there will always be marked exceptions to the rule in any given year and/or over a longer period.

We argue that the role of forests and forestry in poverty reduction can only be properly understood if the situation of the forest dweller or “forest-dependent people” is put into the proper context regarding general developments and especially the growing array of alternative livelihood choices outside and away from forests. In addition we posit that, given the choice, poor forest-dependent people are for the most part willing to leave forests if they perceive greater opportunities away from forests to improve their livelihoods. Regardless of the current role of forests and forestry in poverty reduction, we need to review the contribution of non-forestry sectors to poverty reduction and pose key questions. To what extent have non-forestry sectors allowed the poor to move out of forests and agricultural dependence and how is forestry's contribution to economic development changing? Straightforward answers to these questions are hard to come by.

Central to this paper is poverty and most crucially poverty reduction. Whilst the objective of poverty reduction currently has overwhelming support, particularly among the donor community, there is considerable debate about what this objective means.¹ The current approaches to the identification of poverty and policy interventions that will reduce poverty are diverse and often confused: On the one hand, there is an acknowledgement of the multidimensionality of poverty, combined with little consistency across studies that attempt to shed light on the issue. Whilst we recognize the wealth of literature devoted to the definitions of poverty and its reduction, in this paper we focus on the traditional concept, i.e. income poverty. We fully recognize that the level of income is only one dimension of poverty but in the long run income generation remains an important driver of change. Also, while US\$1 per day is criticized for being a reductionist one-dimensional indicator, it can be easily measured and allows for monitoring changes over time and comparisons between different geographical locations. Finally, while other dimensions of poverty are very important, poor people will remain poor if they are unable to generate a certain income. Increasing incomes alone is not sufficient to reduce poverty, but in most cases it is absolutely necessary.

Many accounts suffer from a lack of distinction between “income generation” and “poverty reduction”. The two terms — although often used interchangeably in literature and policy debates — are not synonymous. While income can be generated it is often the case that it is either not received by the poor or received at such low levels that it provides little or no opportunity for the poor to become “non-poor”. As is so often the case, in the absence of equitable benefit-sharing mechanisms and strong institutions at all levels, benefits (financial or non-financial) are often captured by the better-off segments of the population. They may not enhance the livelihoods of the most needy, the very poor, i.e. the declining poor and very poor who have limited capacity to pursue forest claims and gain access to and make effective use of forest resources (Hobley 2007).²

¹ See research on “Alternative realities? An empirical investigation into alternative concepts of poverty” funded by DfID. See also policy briefs from the Chronic Poverty Research Centre at www.chronicpoverty.org

² Instructive publications include, amongst many others, Angelsen and Wunder (2003), Mayers (2006b), Hobley (2007) and Springate-Baginski et al. (2007).

As poverty is still prevalent in most parts of the world, including Asia and the Pacific, it is high on current political and social agendas. Since the adoption of the MDGs, notably MDG I, which aims at halving the number of absolute poor by 2015, poverty reduction has become one of the most important objectives of governments, development organizations and the donor community. As a result almost every sector has been — one way or another — compelled to mainstream poverty alleviation into policies, programmes and plans. How realistic has this been for the forestry sector given the varying and usually greater importance of other sectors (e.g. agriculture, services, fisheries etc.) in potentially contributing to poverty reduction? There is a strong sense that the forestry sector has an important role to play in poverty reduction but this is often based on the simplistic premise that because large numbers of the poor people live in and around the forests we will somehow reduce poverty by focusing on the resource; this is normally touted as enhancing income generated from forest resources or ensuring greater access to the resource by the poor. The problem is of course considerably more complex than this and we need to make the poor rather than the resource central to the discourse. It has not, for example, been helpful to categorize all people who live in and near forests as forest dependent. In fact, there are many other people who live far away from forests but benefit from their existence (Dembner 1996). The spectrum of forest dependence is complex ranging from hunter-gatherers to employees, perhaps temporary foreign workers escaping poverty in their own country, in forest industries at great distance from any forest. Who should be counted in and who is out?

The Asia-Pacific region has made commendable progress towards poverty reduction. Generally, the region is on track and is set, in addition to poverty reduction, to achieving a number of MDG targets — mostly due to the spectacular growth of some emerging economies notably China, India and Viet Nam. As always, aggregated data mask the fact that several of the region's countries are lagging behind. The absolute number of poor people in Asia and the Pacific remains larger than in other regions (UNESCAP, UNDP and ADB 2006). Of the region's poor, a substantial number is living in and around forests, although their exact number is contested, as is their level of dependence on forest resources. While these communities undoubtedly make use of forest products and services and/or can generate income as employees in the forestry sector, the question remains — to what significant extent forests and forestry can lift them out of poverty? There is also a continued need to change the perspective of those of us engaged in the forestry sector if we are to meaningfully demonstrate forests and forestry as an appropriate option for contributing to poverty reduction, i.e. consideration of the policy, institutional and technical options that make poverty reduction central rather than the perspective of forestry incidentally contributing to poverty reduction. Indices of success need to be re-oriented to focus on the poor, e.g. the “number of poor people uplifted” versus “seedlings provided” or “area planted”. In addition, there is a great need to understand the dynamics of poverty and that measuring poverty is not the same as understanding why it occurs, i.e. interventions need to tackle causes not symptoms. As argued by Arnold (2002), the key issue for forestry therefore is to establish whether the poverty goal is being defined broadly to include security and livelihood support or is more focused on income enhancement (i.e. the amount of US\$ per day). While discussion on the former has accumulated in the past three decades few studies have investigated to what extent forests and forestry can significantly lift poor people out of poverty by giving them a secure and sustainable income from forest activities.

Whilst we argue the case that poverty is central to this paper, it is also important to draw the distinction between “forests” and “forestry” especially as this further highlights the inherent complexity of the subject. What do we mean by “forests”? Are forests a land area of more than 0.5 hectare, with a tree canopy cover of more than 10 percent, which is not primarily under agricultural or other specific non-forest land use (see definition of Convention of Biological Diversity)? If so, than many homegardens and agroforestry systems are not forests. Trees outside forests (TOF) also would not find a place in the discussion on the role of forests in poverty reduction. In many cases non-wood forest products (NWFPs) originate from

agricultural land or land previously deforested to encompass commercial-scale production, e.g. coffee, tea and bamboo. Lastly should forestry encompass subsectors that rely only to some extent on forest products such as pulp and paper?

2. STRUCTURE OF THE OVERVIEW

This overview is divided into four main sections. The first section sets the scene and aims to address what constitutes poverty, what is meant by poverty reduction and the indicators for its measurement. This is a key issue for this study as we seek to distinguish whether forests and forestry can contribute to either poverty elimination by providing a permanent exit from poverty, or poverty mitigation, in which forests and forestry provide income but do not assist in any significant way in long-term socio-economic advancement. We proceed in this section to attempt to quantify the number of poor people — often referred to as forest-dependent people — who live in and around forests.

The second section analyses broad developments in the Asia-Pacific region, principally demonstrating the significant impact of rapid economic growth on both urban and rural people. We describe the significant decline of the importance of the agriculture sector in national economies, which has resulted in dwindling numbers of economically active people in agriculture in many countries. This is followed by the contributions that the formal and informal forestry sectors make to national economies and concludes with a brief discussion on the progress that countries have made in eradicating poverty in the Asia-Pacific region.

The third section provides a picture of the current situation and analyses to what extent forests and forestry are contributing to poverty reduction. Exploring the contributions of NWFPs, collaborative or participatory forest management and forestry outgrower schemes, the section tries to answer the question of who benefits most from forest-based income. More specifically, the section shows whether extremely poor people's poverty is eliminated or mitigated. For the analysis we use the indicator of US\$1/day, adjusted for purchasing power parity (PPP), although we again acknowledge this indicator's limitations. This section also provides reflections on the constraints that hinder forests and forestry from being more effective contributors to poverty reduction.

The final section discusses a number of important implications in order for forests and forestry to contribute effectively to poverty reduction and based on the discussion several recommendations for pro-poor forest policies are outlined. We then shift our attention to the likelihood that interventions and changes will become reality and construct three scenarios. The optimistic scenario considers that necessary reforms to facilitate poverty reduction will be made. The more pessimistic scenario will assume "business as usual", meaning that the powerful forestry stakeholders will continue to set elusive goals, but pay lip service to reaching them and fight hard to maintain the current impediments that make it unrealistic for forestry to make any difference to poor people. The second scenario assumes reforms that remove current impediments. The third scenario assumes that structural changes in national economies, outside of the forestry sector, will significantly reduce the number of people dependent on forests such that the roles of forests and forestry become increasingly less relevant to poverty reduction.

3. SETTING THE SCENE

How to define poverty?

As mentioned in the introduction, defining the outwardly simple concept of poverty has occupied development researchers, politicians, economists and academics for centuries. The debate will continue but will probably remain polarized between those who favour definitions of poverty that focus on a lack of material goods (<http://www.m-w.com/dictionary/poverty>) to those who see poverty more broadly defined as both material and a state of human well-being (Arnold 2002; Angelsen and Wunder 2003). The plethora of definitions, measures and indicators combined with the lack of available comparable data make measuring progress difficult. Maxwell (1999) notes:

Defining and measuring poverty barely kicks off the game. Only by understanding causes can the main business begin of designing, implementing and evaluating interventions. In designing poverty programmes, it is wise to respect the vision of poverty articulated by poor people themselves. In some cases, this may mean implementing measures to increase income. But in others, the priority may be to reduce variability of income, or strengthen women's autonomy by improving the legal system, or improve the service the poor receive at health centres. Variety of this kind does little to help generate measures of international progress. Does that matter?

The following definitions provide an overview of how poverty is conceptualized by some leading scholars and organizations.

The World Bank (2000, cited in Angelsen and Wunder 2003) advocates a three-dimensional concept of poverty, whereby the dimensions are made up of “opportunity, security and empowerment”. The World Bank concept is particularly relevant to forest dwellers; for example, Peluso et al. (1994, p. 34) have emphasized that “Poverty in natural resource-dependent areas arises from a combination of powerlessness and vulnerability to exploitation, manipulation, and further impoverishment, stifling local political action and economic development efforts”. Many people living in a forest landscapes lack opportunities, are insecure and vulnerable and have limited access and control over local resources, especially when such resources are viewed as valuable by powerful outsiders (Dove 1993).

Hobley (2007, p. 11) introduces “three levels of understanding of poverty that are beginning to appear in forest policy debates either implicitly or explicitly” as follows:

1. *Spatial vulnerability (forest dependence argument)*
 - *Remote rural areas and chronic poverty*
2. *Temporal vulnerability (safety net argument)*
 - *Seasonal and within the life-cycle*
3. *Structural vulnerability (transformation argument)*
 - *Social, economic and political exclusion*
 - *Little or no voice*

Angelsen and Wunder (2003) introduce the concept of “degree of poverty”. Simply put there are extremely poor people and then there are the moderately poor. This concept is similar to that of Hobley (2007, p. 13) who discusses different degrees of poverty and makes a distinction between “declining (or extreme), coping and improving poor”, emphasizing the extent of capacities “to pursue forest claims and gain access to and make effective use of forest resources”. While the declining poor lack power, security and opportunities, the coping poor and improving poor (the moderately poor) are in a much better position regarding these dimensions of poverty.

The role of elites in capturing forest benefits has received considerable attention in recent years and Hobley (2007) explains that the improving poor have the most positive constructive relationships with elites, which help them in obtaining greater benefit shares in comparison to the other two groups of poor people. We will return to the issue of elite capture later in the analysis, but at this point it should suffice to emphasize that pro-poor policies, strategies and projects need to take the heterogeneity and diversity in rural communities into consideration and the often flawed assumption that all members of rural communities are poor (see Li 1996).

An important contribution concerning the definition of poverty alleviation is provided by Sunderlin (2004). He distinguishes between poverty elimination, avoidance and mitigation (Figure 1). Sunderlin et al. (2007, p. 22) note that poverty avoidance or mitigation “involves the use of forest resources to meet household subsistence needs, to fulfill a safety net function in times of emergency, or to serve as a ‘gap filler’ in seasonal periods of low income, in order to lessen the degree of poverty experienced or to avoid falling into poverty. The term ‘poverty elimination’ refers to the use of forest resources to help lift the household out of poverty by functioning as a source of savings, investment, accumulation, asset building, and lasting increases in income and wellbeing”.

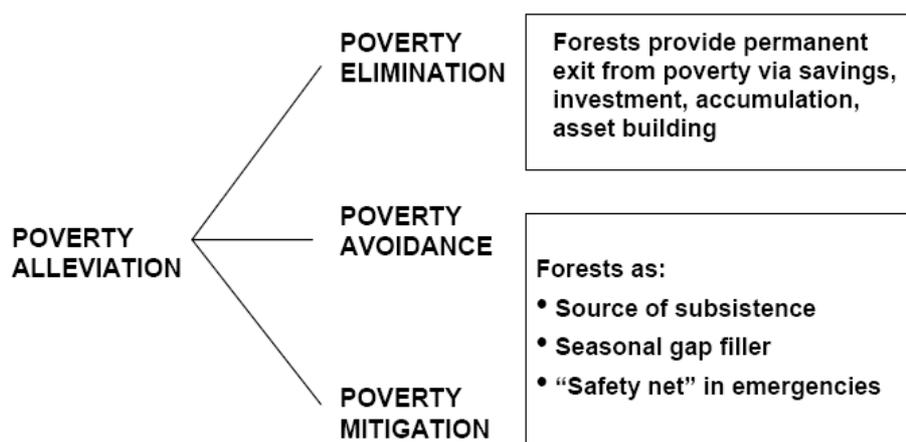


Figure 1. Definitions of “poverty alleviation” and examples related to forests and forestry

Source: Sunderlin (2004).

Operationalizing the various concepts of poverty and generating data for comparisons between different time periods and among geographical locations are difficult. There are no agreed-upon indices for opportunity, security and empowerment. Although it is recognized that relying on monetary measures obscures the other dimensions of poverty (Hudson 2005) income remains the most practical indicator. Angelsen and Wunder (2003, p. 11) explain “It is an indicator that has been thoroughly tested (for the monetary part within the market place), that has well known pros and cons and more appeal to policy makers than the ranking of an abstract index”. Keeping the limitation of daily income levels as an index for poverty in mind we will make use of it later in this overview to review to what extent countries are reaching the MDG of eradication of extreme poverty and to what extent forest-based income has contributed to lift individuals above the US\$1 PPP threshold; i.e. to what extent has the income earned from forests and forestry eliminated poverty and to what extent does it only mitigate or avoid the effects of poverty?

How many poor people live in and around forests?

Whichever way we choose to define poverty, there remain unacceptably high numbers of the poor and dispossessed. According to UNESCAP's *State of the environment in Asia and the Pacific 2005* there are still more than 670 million people living on less than US\$1 per day in the region (UNESCAP 2006). Three billion people live in rural areas of the developing world, and 1.5 billion live on less than US\$2 per day. More than two-thirds of the world's poor are in Asia. Whilst most countries in the Asia-Pacific region have made great strides in reducing poverty and increasing food security during the last 25 years, not everyone has benefited and many pockets of poverty — some considerably large — remain, especially in South Asia.

With the exception of Mongolia, poverty is disproportionately concentrated in the rural areas of the region (Ahuja et al. 1997, quoted by IFAD 2002). Most forests are also located in rural and remote areas. It has hence become commonplace, and we would argue simplistic, to directly link poverty alleviation with forests and debate to what extent forestry and forests have contributed and will contribute in the future to poverty reduction.

Much has been published in recent years about forest dependency and the significance of forest goods and services to the rural poor, especially forest dwellers. Accounts and a plethora of case studies, usually of a positive nature, have often been accompanied by large numbers especially of poor, forest-dependent forest dwellers who have been positively impacted through forest goods and services. Whilst this is not surprising there is a real need to bring some realism and relevant data into the debate especially if we are to keep forests and forestry on the agenda and make significant inroads into reducing poverty.

This section reviews the available data and presents a guesstimate of the number of poor people for further discussions.

Lynch and Talbot (1995) were probably the first to enumerate the number of people living in or near forest reserves in Asia. Their estimate was between 420 and 447 million people for India, Indonesia, Nepal, the Philippines, Sri Lanka and Thailand alone. Ma (1999) expanded the list covering most of Asia and the Pacific and projected the number of forest-dependent people to be between 481 and 579 million. The two numbers should probably not be compared as “proximity to forest” is not always synonymous with “forest dependence” (Byron and Arnold 1999).

Byron and Arnold (1999) also emphasized the great uncertainty regarding numbers of forest-dependent people, where they can be found and the characteristics of their dependence on the forest. Depending on definitions, estimates referred to by the two authors range from 1 million to 1 billion people worldwide, which is clearly unsatisfactory for any decision-maker. To shed more light on the issue, the Forestry Research Programme of the UK Department for International Development (DfID) commissioned a study looking for numbers of forest-dependent people (FDP). The authors of the report gave up quite quickly and concluded that (Calibre Consultants and SSC 2000, p. 6):

As a result of the interviews carried out for the study and on the basis of the material collected, we have concluded that there are currently no reliable regional or global sources of data on FDP.

An authoritative source appears in the latest World Bank strategy document concerning forests. The figures of 1.6 billion and 1.2 billion, contained in the quote below have been adopted by the Food and Agriculture Organization of the United Nations (FAO 2006a) and the Regional Community Forestry Training Center (RECOFTC 2004), although no sources of information are provided by the World Bank itself:

More than 1.6 billion people depend to varying degrees on forests for their livelihoods. About 60 million indigenous people are almost wholly dependent on forests. Some 350 million people who live within or adjacent to dense forests depend on them to a high degree for subsistence and income. In developing countries, about 1.2 billion people rely on agroforestry farming systems that help to sustain agricultural productivity and generate income. Worldwide, forest industries provide employment for 60 million people. Some 1 billion people worldwide depend on drugs derived from forest plants for their medicinal needs (World Bank 2004, p. 16).

Chomitz et al. (2007) found globally that about 73 percent of forest dwellers are Asian. Only 35.6 million people living at forest edges and cores live more than eight hours away from major cities. This indicates that the area that could be described as truly remote has decreased rapidly in Asia and the Pacific. Outside Indonesia and Papua New Guinea (PNG) there are few populated forest areas that could be classified as remote. In Asia, about 350 million people live at the forest edges and in the forest cores (Table 1), with another 90 million in the mosaic forests. Population densities in less remote Asian forests, at about 85/km², suggest long-settled areas dependent on agroforestry or planted forests.

Table 1. Forest populations and areas in Asia in million people and thousands of square kilometres (source Chomitz et al. 2007)

Domains	Forest edges		Forest cores		Total
	Hours to major city		Hours to major city		
	<8	>8	<8	>8	
Population (millions)	256.5	29.5	60.9	6.1	350
Area (thousands of km ²)	2 045	1 527	594	563	4 729

The figures above do not take into account the Pacific Island countries, whose rural population stands at around 6.75 million people, of whom perhaps 6 million people could be considered forest dwellers. As a result, the number of forest-dwelling people in Asia and the Pacific is estimated to be around 446 million people or 12.65 percent of the region's total population of about 3.52 billion (FAO 2007). They live in an area covering about 6 million km². Only about 10 percent of the total forest-dwelling population lives at a distance to a major city greater than eight hours of travel. This means that:

- For 90 percent of the people cash cropping is a viable option, which increases pressure on the remaining forest
- Most people who are called forest dwellers have choices, as we describe below, and many have made use of them
- Forest products are collected for subsistence purposes and for sale in the market, mainly without further processing *in situ*
- The commercialization of forest products can lead and has led to further forest degradation and/or the extinction or near extinction of some products, especially wildlife species

We will explore the issues above in more detail later. Before we do so, let us look at the changes in the proportion of population below the extreme poverty line of US\$1 (PPP) per day.³

Trends in poverty reduction: less or more poor people in Asia and the Pacific?

Worldwide, the number of people in developing countries living on less than US\$1 per day fell from 1.25 billion in 1990 to 980 million in 2004. The proportion of people living in extreme poverty fell from nearly one-third to 19 percent during the same period. The decline in global poverty is mostly due to rapid economic growth in Asia. East and Southeast Asia, in particular, experienced impressive reductions in poverty (Annex 1), and accelerating growth in India has also put South Asia on track to achieve MDG I (UN 2007). Whilst economic growth has been critical for poverty reduction in Asia, the extreme poor have benefited less than the moderately poor and there is growing concern over widening inequalities in the region despite economic growth (ADB 2007).

The incidence of extreme poverty is severe in South Asia. Here, the poor constitute between one-quarter and one-third of the populations of the larger economies. Extreme poverty is also significant in Cambodia, Lao PDR, Mongolia and in some of the Pacific Island countries, affecting more than one-fifth of these countries' populations. In relative terms, extreme poverty tends to be less problematic elsewhere in Asia; absolute numbers are still large. China alone counts more than 200 million extremely poor people. Absolute numbers for Indonesia, Viet Nam and the Philippines are around 16 million, 10 million and 12 million, respectively. As most poor people live in rural areas, agricultural growth is important for them. A large body of evidence shows that higher agricultural productivity in Asia consistently raised farmers' incomes despite declining market prices. Small- and medium-sized farmers have not

³ The following section relies heavily on ADB (2004).

been excluded from these benefits (Lele and Agarwal 1989; Lipton and Longhurst 1989, all cited in DfID 2005).

Unfortunately, agricultural production, especially since the yield-enhancing effects of the Green Revolution is not as pronounced as it was several years ago, has not been particularly robust or stable in many parts of Asia due to unfavourable weather conditions, especially in South Asia, as well as policy and institutional neglect. In particular, a lack of public investment in rural infrastructure (irrigation, roads, electrification, and communications), social infrastructure (basic education and health care) and agricultural research and extension services has variously led to the underperformance of the agriculture sector. In tandem, along with neglect in the agriculture sector, rural industrialization has also not received sufficient attention. Major investors tend to favour capital-intensive investments, which do not generate enough off-farm jobs in rural areas.

While agriculture has contributed to poverty reduction — although with diminishing significance over the last ten to 15 years — there are few recent aggregate figures available (see further below) demonstrating how the forestry sector or forests may have contributed to poverty reduction. Mayers (2007, p. 1) asks, “Where are the forests in the MDGs?” While people in the forestry community seem to be acutely aware that many poor people live in remote areas, where we find forests, their plea for recognizing the link between poverty reduction, forests and forestry has not translated into reliable, relevant and up-to-date information.

To say that nothing is known would be incorrect. In the search for concrete evidence, and the reader is forewarned that we have not always succeeded, we will turn to three different avenues in which forests and forestry can provide income — not necessarily in the form of cash — in Section 5. We will look at the contributions that NWFPs, devolved forest management⁴ and forestry outgrower arrangements⁵ have made. These three options have been selected as they have received considerable financial and intellectual investment over the last two decades and have been widely perceived as more viable avenues to poverty reduction over more “traditional” forest use.

For the purpose of the discussion these three options are separated, although it is acknowledged that there will be substantial areas of overlap. For example, community forests and smallholder (i.e. outgrower) plantations can be managed to produce timber and NWFPs simultaneously. In fact, many devolution schemes have been designed to increase access of local people to NWFPs but not necessarily to timber. Small plantations under outgrower arrangements can also be managed by communities and are not necessarily an indication of a single household's, landowner's or entrepreneur's investment in time and money.

⁴ Under devolution we subsume any policy, scheme, programme or initiative designed to pass authority and/or responsibility for forest management to local people such as community forestry, participatory forest management, community-based forest management and joint forest management.

⁵ Desmond and Race (2003, p. 78) define outgrower arrangements as “a contractual partnership between growers/landholders and a processing company for the production of commercial products”. We should note that not all contracts are necessarily of a formal nature.

4. RAPID DEVELOPMENTS, TRANSFORMING ECONOMIES AND GENERATING CHOICES

The Asia-Pacific region is widely hailed as a developmental success story and a major driver powering global growth over the last two decades, with the two mightiest components being China and India. The vast and heterogeneous region contains some of the largest and richest economies, as well as some of the smallest and poorest. It is home to three-fifths of the world's population, half of its urban population and 11 of the 20 largest cities in the world. The region's urban population has increased fivefold since 1950, although levels of urbanization remain low in all but a few countries (UNFPA 2007). In relative terms, rural populations decreased in most countries in the region between 1997 and 2007. In absolute terms, the most dramatic change has occurred in China, where the rural population decreased from 848.2 billion in 1997 to 772.2 billion in 2007 (Annex 2). It is officially estimated that some 18 million people migrate from rural areas to cities every year (UNFPA 2007). Whilst the absolute increase in urban population has challenged the ability of urban authorities to meet increased demands for infrastructure, the population growth in rural areas continues to put pressure on natural resources and is a major concern. For those countries, for which data are available (Annex 2⁶), rural populations increased slightly from 2.11 billion to 2.15 billion.

The speed of economic growth in the region's developing countries has surpassed global growth rates for several years. Rapid growth is even taking place in some of the most challenging economic environments (UNESCAP 2006). Notwithstanding the impressive economic performance and industrialization in most countries, it is the common view that Asia and the Pacific remains a region of farmers. While available statistics lend credence to the belief that the region is dominated by farmers, a considerable transformation has occurred during the last 15 years. The percentage of people actively employed in agriculture is still high in such countries as PNG (72 percent), Nepal (76 percent) and Lao PDR (81 percent), but is declining in most countries. Although agriculture remains a key sector with respect to employment and income generation in the region overall, its importance has clearly declined. A significant shift from the agriculture to the services sector is noticeable in all of the subregions with the exception of the Pacific Island countries (Annex 3).

The rapid transition from predominantly rural and agricultural employment to urban-based manufacturing and service-oriented activities in developing Asian countries is predicted to continue, and the trend is expected to even accelerate in some countries. Between 2006 and 2015, total employment in agriculture is projected to contract by nearly 160 million, with employment in industry and services expanding by 172 million and 198 million, respectively. The services sector will be the main source of job creation. By 2015, it will have become the largest sector, representing about 40.7 percent of the region's total employment. The share of industrial employment is expected to increase from 23.1 percent in 2006 to 29.4 percent in 2015, while the share of agricultural employment is projected to decline from 42.6 percent to 29.9 percent between 2006 and 2015. Yet, given its size and importance for poverty alleviation, agriculture will remain an important sector, even though the main engines of the region's growth will be elsewhere (ILO 2007).

This shift out of agriculture, although not necessarily out of rural areas, is further confirmed by looking at the distributional share of value added by several subsectors of national economies (Annex 4). Again, apart from a few exceptions (Indonesia, PNG, Thailand), agriculture added less value in relative terms in 1996 than it did in 2006. In absolute terms, the agriculture sector (including hunting, forestry and fisheries) continues to grow, but it is

⁶ The figures provided in Annex 1 have to be viewed with caution. For example, the relatively low level of urbanites in India is partly attributable to a stringent definition of "urban", e.g. it excludes peri-urban areas (UNFPA 2007).

clearly declining in relative importance in Asia, both in terms of its share of the labour force and its contribution to GDP. It is evident that farm households are diversifying their sources of income towards the industrial and especially the services sectors, or are leaving the agriculture sector altogether (FAO 2006a). As described by Preston (1989), a significant percentage of the rural population has become “too busy to farm”.

There has been a tendency among some of the development community to assume that the rural poor, be they forest dependent or agriculturists, will remain *in situ*. This appears to be less and less the case. Kato (1994) notes that younger people can afford to be disinterested in agriculture and provides evidence of this through the emergence of abandoned paddy fields in Negeri Sembilan, Malaysia. Outmigration is prevalent not only in the more accessible lowland rural areas but also affects remote areas such as the highlands of Sarawak (Lee and Shamsul Bahrin 1992). Socio-economic studies carried out among Punan hunter-gatherers in East Kalimantan, Indonesia, indicate a consensus among all Punan, those who migrated and those who stayed behind in remote upstream villages: Downstream people are generally better off due to better access to more cash-earning opportunities, access to education and lower infant mortality (Levang et al. 2005). In rural Java, households rely increasingly on remittances from urban informal sector earnings (Firman 1994; Hetler 1989).

There are over 50 million migrants from Asia and the Pacific worldwide. India is the region's main exporter of migrants. Asia received almost US\$114 billion in remittances in 2006 — the highest regional total in the world. India and China are the top recipient countries, receiving US\$24.5 billion and US\$21 billion respectively. Transfers make up 23 percent of regional per capita income. Remittances to smaller economies (e.g. the Philippines, Indonesia, Nepal and Tajikistan) constitute between 20 percent and 70 percent of per capita income. On average, remittances in Asia are 2 percent of GDP and 15 percent of exports. The flow of remittances into rural areas in Asia is among the highest. This is partly because half of Asian countries are 65 percent rural. The ratio of remittances per capita to per capita GDP is 23 percent and the highest in the world (IFAD 2007). Little is known about the effects of migration and remittances on forests and forest management.⁷

It is clear then that those people in the rural areas, who have choices (more often than not this is not the extreme poor), will abandon least lucrative economic activities and supplement farm income with other income sources, as illustrated in Table 2 for China. Governments are acutely aware of these developments (Box 1). How widespread this transformation is described by Hegde and Enters for tribal people in Tamil Nadu, India (2000, p. 258):

While NWFPs still played a major role in the livelihood of the indigenous communities in the study area, their importance was declining, not because of scarcity or increased competition between collectors, but because of reduced dependence of those who had choices. In other areas too, dependence of traditional people on forests is declining, particularly with regard to activities surrounding NWFPs.

⁷ Hecht and Saatchi (2007) found that remittances contributed significantly to forest recovery in El Salvador between 1992 and 2001. Meyfroidt and Lambin (2007) noted similar developments and attributed the causes of reforestation in Viet Nam to increased incomes, although the causal relationship was not uniform across the landscape.

Table 2. Declining significance of farm income in China in US\$

Period	Total farm household income (A=B+C+D)	Farm income (B)	Non-farm income (C)	Donation and transfer (D)	Ratio of farm income (B/A) %
1994	523.98	335.11	156.16	32.70	63.96
1995	697.47	440.50	213.51	43.45	63.16
1996	841.02	520.74	271.03	49.25	61.92
1997	906.77	549.95	312.18	44.64	60.65
1998	917.09	524.89	340.28	51.92	57.23
1999	919.97	491.14	374.01	54.82	53.39
2000	906.80	455.00	401.70	50.10	50.18
2001	931.03	458.39	419.56	53.07	49.24
2002	952.50	449.30	445.91	57.29	47.17
2003	982.00	447.75	473.36	60.89	45.60
2004	1 075.53	512.07	493.08	70.38	47.61

Source: National Bureau of Statistics of China, *China statistical yearbook 2005*, September 2005, China Statistics Press. p. 359 (see <http://www.agnet.org/situationer/stats/24.html>).

Box 1. Lampung Is Losing Farmers

BANDARLAMPUNG, Lampung: The government must accelerate the pace of industrialization in order to stem the flow of farmers leaving the province, an official says. Head of the provincial office of the Ministry of Agriculture, Thamrin Bastari, said that hundreds of young local farmers deserted their rice fields every year to try their luck in Javanese cities as industrial workers.

He told the Antara news agency yesterday that the farmers, most of whom have at least secondary education, could contribute more to the community if they stayed at home. Thamrin said the farmers were not entirely to blame, however, because there was less and less land available for cultivation.

Source: Jakarta Post, 3 May 1995, p. 2

As pointed out earlier, the relative importance of the agriculture sector in national economies has significantly declined, which has resulted in dwindling numbers of economically active people in agriculture. People across the region are actively searching not only for alternative income-generating opportunities, but also for better provision of social services, such as health and education.⁸ However, choices and opportunities are unevenly distributed across the region and it is unclear whether there is equal opportunity for the extreme poor, poor and non-poor in accessing these opportunities. Yet, as the examples from Malaysia, Indonesia and India show, the effects of this outmigration extend even to remote rural areas.

Whilst the above section is not linked directly to this paper's objective of exploring the future of forests and forestry in poverty reduction it is important that we look beyond the forestry sector. As indicated in this section there are powerful drivers in the region, which are and will have major impacts on the region's rural environment including forests and forestry. Whilst many of these drivers are outside of the influence of the forestry sector it is important that forestry practitioners and policy-makers are aware of and consider the likely impacts of these outside forces. Equally, whilst many of the drivers are at first glance outwardly positive,

⁸ Gönner et al. (2007) also show that the main constraints for household well-being in Kutai Barat, Indonesia, were education and health, for women, ordinary men and elite men alike.

simplistic assumptions that these new opportunities for income generation, greater livelihood opportunities and better well-being will be available to all, and specifically to the extreme poor, need to be made with caution.

How important is the contribution of the formal forestry sector?

So far, the data and discussion have not provided any insights on the contribution that forests and forestry make to national economies. The Asia-Pacific Forestry Sector Outlook study for 2010 concluded that the “overall importance of forestry in national economies is limited, although it is of major importance in some countries” (FAO 1998, p. 4). Closer examination of the data presents more questions than answers. Most available quantitative information is outdated. Some data include the wood-processing sector, others do not. The definition of *forestry* used for statistical purposes differs widely among countries and analysts. There are examples of in-country statistical parameters being changed over time to yet further confound data analysis (ILO 2001). Given the regular reference to the importance of forests and forestry it is surprising that the forestry sector does not exercise greater precision in its data collection. Lebedys (2004) concluded that, at the global level in 2000, the formal forestry sector employed 12.9 million people, generated US\$354 billion in value-added and exported products with a total value of US\$144 billion. At the global level over the last decade, employment increased by about 4 percent, value-added increased in real terms by 1 percent and the real value of forest products exports increased by 50 percent (Table 3). According to ILO (2001), formal forestry sector employment at the global level was 17 million.

Table 3. Summary of the trends and current status of the total forestry sector employment, value-added and exports by region (source Lebedys 2004)

Region	Regional distribution of global forestry sector employment, value-added and exports in 2000						Change in absolute values from 1990 to 2000		
	Employment		Value-added		Exports		Employment	Value-added	Exports
	millions	%	US\$ bn.	%	US\$ bn.	%	%	%	%
Africa	0.5	4	8	2	3	2	+6	+5	+60
West and Central Asia	0.4	3	3	1	<1	<1	+28	-14	+169
Developed Asia-Pacific	0.6	5	49	14	4	3	-20	-20	+31
Developing Asia-Pacific	4.9	38	39	11	16	11	+16	+34	+57
Western Europe	1.7	13	81	23	61	42	-8	-13	+50
Eastern Europe	1.9	15	9	2	10	7	-15	-27	+137
North America	1.5	12	136	38	44	31	-1	+10	+33
Latin America & the Caribbean	1.2	10	30	9	6	4	+39	+46	+90
All tropical countries	3.0	24	48	14	16	11	+23	+34	+47
All temperate countries	9.9	76	306	86	128	89	-1	-2	+50
World total	12.9	100	354	100	144	100	+4	+1	+50

Note: The changes in value-added and exports are changes in the real value of these items (i.e. adjusted for inflation).

In the Asia-Pacific region, the forestry sector expanded on all fronts between 1990 and 2000. Lebedys (2004) attributed this expansion to an abundance of cheap skilled labour, which encouraged a number of large companies to shift operations from the more expensive North to

the less expensive South, relatively abundant forest resources, a high rate of economic growth, specific policies to encourage development and investment in the sector and more general improvements in the investment climate.

The outwardly positive picture depicted in the data should however be considered in the light of the overall economic sector. At the global level in 2000, the forestry sector employed about 0.4 percent of the labour force, contributed about 1.2 percent to GDP and accounted for about 2.3 percent of global merchandise trade. These measures have all declined, especially in developing Asia-Pacific, due to more rapid growth in other parts of the economy (Lebedys 2004) (Table 4). Developments in the forestry sector appear to parallel developments in the broader agriculture sector, although the decline is not as dramatic.

Table 4. Trends and current status of the contribution of the forestry sector to employment, GDP and total merchandise exports by region (source Lebedys 2004)

Region	Contribution of the forestry sector (in percent)								
	Share of labour force			Share of GDP			Share of merchandise exports		
	1990	2000	Change	1990	2000	Change	1990	2000	Change
Africa	0.2	0.2	0.0	1.7	1.5	-0.3	2.0	1.9	0.0
West and Central Asia	0.3	0.3	0.0	0.5	0.3	-0.2	0.1	0.1	0.0
Developed Asia-Pacific	1.0	0.8	-0.3	1.4	0.9	-0.4	0.8	0.8	-0.1
Developing Asia-Pacific	0.3	0.3	0.0	2.1	1.5	-0.6	2.5	1.4	-1.1
Western Europe	1.1	0.9	-0.1	1.5	1.1	-0.4	2.9	2.5	-0.4
Eastern Europe	1.3	1.1	-0.2	1.5	1.4	-0.1	2.9	3.6	+0.6
North America	1.1	0.9	-0.1	1.7	1.4	-0.3	6.0	4.2	-1.8
Latin America & the Caribbean	0.5	0.6	+0.1	1.5	1.7	+0.1	1.9	1.7	-0.2
All tropical countries	0.7	0.6	-0.1	1.5	1.2	-0.4	2.9	2.4	-0.5
All temperate countries	0.2	0.2	0.0	1.9	1.7	-0.1	3.3	1.9	-1.4
World total	0.5	0.4	-0.1	1.6	1.2	-0.3	2.9	2.3	-0.6

For our purpose, the question of how many people are employed in the forestry sector is of particular relevance. In 2000, the sector provided employment for 4.9 million in developing Asia-Pacific (Box 2). A closer look at available country data shows gains and losses between 1990 and 2000 (Table 5). Overall, there has been a substantial decline due to shrinking employment in India and China. According to the China Green Times (8 December 2000) 0.9 million forestry employees lost their jobs due to the forest-harvesting restrictions that were imposed in 1998. Similar job losses, although of a smaller magnitude, can be assumed in other Asian countries (e.g. Thailand and Philippines) when logging bans were put into effect.

Two additional examples indicate the key importance of forestry in forest-rich locations. In the Solomon Islands, the natural forestry sector employs one in six people, generates 50 to 70 percent of foreign revenue and contributes around 15 percent to the government's non-aid income. These contributions are expected to decline dramatically because of excessive production rates that are more than four times above the sustainable rate (Enters 2007). In the state of Sarawak (Malaysia), the timber industry is a major employer. As of 31 March 2007, it provided jobs to 92 360 people or about 40 percent out of a total 229 572 people employed in the state (Anon 2007).

There is no information available on the extent that formal sector forestry jobs contribute to poverty reduction. According to industry sources, in Sarawak, female unskilled workers from Indonesia have a starting salary of about US\$2.6 to US\$3.15 per day. Adjusted for PPP, the daily wage is about US\$3.9 to US\$4.7, which excludes benefits such as accommodation, meals and insurance. Adjusted for PPP, a tree feller's daily income is between US\$21.5 and US\$28.6, although it is unclear what work-related expenses have to be covered by the worker. It is safe to say, that at least in Sarawak, people employed in the industry cannot be

considered poor, although it is unclear how many family members foreign workers have to support in their home country.

Table 5. Employment in forestry in 1 000 person years (FAO 2006b)

Country	1990	2000	Change in %
East Asia			
China	2 515	2 017	-19.8
DPR Korea	4	22	450
Mongolia	-	-	-
Southeast Asia			
Brunei	1	1	0
Cambodia	19	17	-10.5
Indonesia	-	162	-
Lao PDR	3	4	33
Malaysia	78	67	-14.1
Myanmar	111	101	9
Thailand	16	16	0
Viet Nam	16	210	1 112.5
South Asia			
Bangladesh	98	98	0
Bhutan	2	4	100
India	5 465	4 855	-11.2
Nepal	145	110	-24.1
Pakistan	33	30	-9.1
Sri Lanka	4	6	50
Pacific			
PNG	13	11	15.4

We have mentioned the surprising lack of sound or comparative empirical data for the formal forestry sector both globally and in the region. Many forest departments emphasize the importance of the sector, not necessarily for poverty reduction, but in terms of employment and income generation. To be fair, few forestry departments are equipped or tasked with evaluating the impact of their sector on poverty. As a result, we know little about the contribution of the formal forestry sector to national economies and even less about its contribution to poverty reduction.

Angelsen and Wunder (2003, p. vii) argue, “economic growth more often than not does trickle down to the poor – and poverty reduction without growth is in practice extremely difficult”. We will not take this debate regarding linkages between growth, inequality and poverty further as this has already been researched extensively by groups such as the Asia Development Bank’s (ADB) Economic and Research Department (ERB). The consistent finding does however seem to be that whilst sustained high economic growth can impact positively on poverty, not all Asian countries have enjoyed such growth levels. Even in many high-growth countries, growth has been associated with rising inequality so that the poverty impact of growth has been slower than it could have been. Lastly it is important to stress, as in previous sections, that we have no realistic measure of the level of access the extreme poor may have in either directly or indirectly earning income or taking up employment in the formal forestry sector.

Box 2. Contributions of Forestry in Selected Countries

Cambodia: The recorded contribution of forestry to GDP fell from 5.4 percent in 1998 to 2.1 percent in 2001; after the logging ban in 2002 it fell effectively to zero.

Fiji: Timber is Fiji's third-largest export commodity, accounting for 2.5 percent GDP (ADB 2003) and providing employment for about 3,000 people.

India: Forestry's contribution to GDP fell from about 29 percent in 1981 to 1.7 percent in 1991 and around 1 percent in 2001 (FSI 2003). This figure excludes the contributions of forest-based industries. It is estimated that about 7.5 million people, mostly in rural and tribal settings, are in forest-related employment (FSI 2003).

Indonesia: In 2000, forestry contributed 1.17 percent of GDP, although this figure may not include the downstream-processing sector. About 0.61 percent of the labour force (nearly 500,000 people) is directly employed in the forestry sector.

Malaysia: The forests and forest industries contributed 5.3 percent to GDP in 1996 and 4.4 percent in 2000. About 330,000 people (3.3 percent of the labour force) were directly employed in the forest-based sector, up from 177,000 in 1990.

Myanmar: Overall, some 500,000 people are thought to be dependent on the forestry sector for employment; the contribution of forestry to GDP was estimated at 1 percent in 1997/98.

PNG: Forestry contributed about 7.6 percent of total GDP in 2001.⁹

Philippines: The contribution of the forest sector to GDP was 1.6 percent in 1975, 0.14 percent in 1999 and 0.05 percent in 2002.

Thailand: The contribution of forestry to GDP is about 0.1 percent.

Vanuatu: According to a recent national census, 80 percent of the Vanuatu population is engaged in some form of small-scale commercial or subsistence forestry operations.

Source: ITTO (2006).

What is the contribution of the informal forestry sector?

Over 1 billion people, or 61.9 percent of Asia's workforce, work in the informal economy with little or no social protection and often in low-productivity jobs. While this share has dropped from 67.2 percent a decade earlier, a major reduction in the relative size of the informal economy by 2015 is not foreseen (ILO 2007). It should also be noted in reference to the previous section that many formal employment sectors, including the forestry sector, are resorting to informal arrangements for employment with the objective of cutting costs. In many countries in the region whilst GDP growth has been satisfactory, growth in employment in the formal sector has been slow.¹⁰

As we have detailed, data for formal employment and what relevance they have to the poor in the forestry sector are wide open to question. Even less is known about the informal sector and small- and medium-sized forestry enterprises (SMFEs). The ILO (2001) reports that at the global level, the informal and subsistence forestry sector provided jobs for 30 million people. Emphasizing the importance of the SMFEs, Mayers (2006a, p. 10) provides some "rough extrapolations from existing information":

- *in many countries, 80-90 percent of forestry enterprises are SMFEs;*
- *in many countries, over 50 percent of all forest-sector employment is in SMFEs;*
- *over 20 million people are employed in SMFEs worldwide; and*
- *over US\$130 billion/year of gross value-added is produced by SMFEs worldwide. By comparison, the total global value of imports of wood-based products is about US\$141 billion/year – most of which is produced by large enterprises; there may*

⁹ PriceWaterhouseCoopers (2006) estimated forestry's contribution to real GDP in 2005 to be about 9.2 percent.

¹⁰ See http://nceus.gov.in/Condition_of_workers_sep_2007.pdf for India.

be an additional 140 million people working in informal forestry microenterprises, mainly in developing countries.

Data for SMFEs and the informal forestry sector in Asia and the Pacific are scarce. In India, SMFEs comprise 95 percent of all forestry enterprise activity: 98 percent of sawmills, 87 percent of plywood factories and 94 percent of paper mills (Saigal and Bose 2003, cited in ITTO 2006).

Summary

There are four caveats to the discussion on the contribution of formal and informal forestry sectors to poverty reduction. First, wages are comparatively low compared to other sectors and have been falling. Although working conditions vary among countries and depend often on the size of the operation, in many developing countries, the sector grapples with poor working conditions and unacceptably high accident rates (ILO 2001).

Second, many Asian countries have imposed logging bans (Durst et al. 2001). This development has significantly affected formally recorded forestry outputs. Whilst it may seem counterintuitive logging bans have not had the same relative impact on timber processing, as in many cases, imports have substituted for domestic production. In a strict sense then domestic forests are contributing far less to national economies than they used to, before the imposition of the bans.

Third, most of the employment is in the processing sector, and it is not always clear from where the raw material has been sourced. Malaysia's furniture industry relies predominantly on rubber (*Hevea brasiliensis*). Although rubber plantations are considered by some people to be forests, it is clear that they are almost always established through deforestation. A similar case can be made for bamboo, which, widely hailed as an NWFP, has in parts of China completely replaced natural vegetation (Fu and Yang 2004, cited in Belcher and Schreckenberg 2007). Townson (1995, cited in Arnold and Townson 1998) also observed that some of the most important "forest" products were hardly drawn from forests at all.¹¹

Fourth, in some countries significant quantities of timber, as well as other "forest" products are derived from TOF, homegardens and agroforestry systems. All of these systems and their products contribute to national economies, and employment and income generation. Yet, one is tempted to ask, and this is a controversial question, whether they should be considered "forests" or whether a description as "agricultural system" would be more fitting.

The question remains as to whether the opportunities provided by the formal and informal forestry sectors have lifted any of the poor out of poverty, have only prevented a slide into ever deeper poverty or have in fact created further exclusion and poverty.

¹¹ The title of Arnold and Townson's publication is interesting: "Assessing the potential of forest product activities to contribute to rural incomes in Africa". The concern in the late 1990s was still with "income generation"; "poverty reduction" had not entered the forest policy debate.

5. CONTRIBUTION OF FORESTS AND FORESTRY TO POVERTY REDUCTION — INVESTIGATING ALTERNATIVES TO THE FORMAL AND INFORMAL FORESTRY SECTORS

Devolving forest management: Who benefits?

Over the last 20 years, many countries in the Asia-Pacific region have been actively engaged in reforms to transfer responsibilities and power from the centre (i.e. central government) to the periphery (e.g. state, province, district or local level). Almost all sectors are affected by this incremental move and forestry is no exception. The re-orientation of forest management through devolution, and other forms of decentralization, has an even longer history. Locally managed forests have existed for centuries, for example, where traditional practices became the dominant form of forest management (Edmunds and Wollenberg 2004).

As a result of a global movement toward participatory management, political and administrative decentralization and social justice, devolution is increasingly viewed as a form of governance structure in forest management. It is assumed — as well as advocated — that people who live close to forests and may depend on them for a variety of products and services have a greater interest in their proper management than distant authorities located hundreds of kilometres away. A widely accepted view on devolution is that (Ribot 2004, p. 1), “IF institutional arrangements include local authorities who represent and are accountable to the local population and who hold discretionary powers over public resources THEN the decisions they make will lead to more efficient and equitable outcomes than if central authorities made those decisions”. In line with this, high expectations related to the purported equitability and efficiency outcomes of decentralization have been raised (Edmunds and Wollenberg 2001) (Box 3). At the same time, it is also hoped that empowering people at the periphery to decide and implement “their” form of forest management can contribute to the MDGs of eradicating extreme poverty and hunger and ensuring environmental sustainability. The main question that remains to be explored is, to what extent have the expectations and hopes been fulfilled?

Box 3. Wishful Thinking about Decentralizing Forest Management

Transferring forest management authority from poorly funded, top heavy bureaucracies to forest users with interests in maintaining a healthy and productive forest will save the state money, improve forest quality, provide greater benefits to those who need and deserve them, and make decision making more democratic. Or so the thinking goes.

Source: Edmunds and Wollenberg (2001), p. 190.

A review of the recent history of devolution in forestry indicates undeniably that the area of land — although not necessarily forests — managed under devolved and community-based forest management (CBFM) systems has dramatically increased in many countries (White and Martin 2002). The number of communities and individuals involved in forestry appears to have expanded significantly and ever more pioneering forms of bringing local people — although not necessarily democratically elected bodies or institutions — into forestry are being devised. For example, by December 2005, around 25 percent (or 1.19 million hectares) of Nepal’s forest area had been handed over to more than 14 227 community forest user groups (FUGs) that represent more than 1.6 million households (Chhetri 2006) and in general forest conditions have improved (Malla et al. 2003; Springate-Baginski et al. 2007). In India, 84 000 Joint Forest Management (JFM) committees are managing 17 million hectares of forests in 27 states (Bahuguna 2004). By 2004, the CBFM Program covered more than 5.7 million hectares of forest land benefiting more than half a million households (Acosta et al. 2004) in the Philippines. In Cambodia, 62 402 households were involved in community forestry and had access to or were managing 180 000 hectares of natural forests (Heng and

Sokhun 2005). In Thailand, the community forestry programme covers approximately 200 000 hectares, which are managed by 5 331 villages (Wichawutipong 2005). It is estimated that 22 percent of developing countries' forests are under community management or ownership (White and Martin 2002). At the same time policy frameworks to support community participation in forest management have received greater political backing and have become increasingly sophisticated over time. Recently, the long awaited "Forestry Bill" in Thailand was approved. In other countries like Indonesia regulations that stimulate community forestry are also in place.

The objective of communicating such numbers of land area under various forms of devolved management is to impress. In all likelihood, this objective has been achieved, although the numbers in themselves contain very little — perhaps even misleading — information. Little do they tell us about who benefits from devolution and to what extent being a member of a FUG, a JFM committee or a people's organization (PO) helps poor people to lift themselves above the poverty line. The data also tell us little about the quality of the forests. In Viet Nam for example, of the nearly 1.2 million hectares of forest land that were allocated by local authorities to communities for long-term management and utilization, about 44 percent is considered barren land (Ngai et al. 2005). The numbers also contain no information on how well household community heterogeneity is reflected in the composition of the management bodies e.g. proportion of women, extreme poor, wealthy that are members of a FUG, JFM Committee or PO.

According to Appanah (2004, p.7), "The potential for community forestry to bring additional income to the forest-dependent communes exists. Proof that it can alleviate poverty of rural populations can be adduced quite easily". There is no shortage of information on the positive, as well as negative, livelihood impacts of community forestry. Yet proof that it can eliminate poverty is very hard to come by. In fact, the proof that does exist often shows rather that, what is believed to be pro-poor, is at best not pro-poor and at worst actually contributes to aggravating the causes of poverty. Let us look at some evidence from Nepal and India.¹²

What does our empirically-based knowledge tell us?

Our first example takes us to the middle hills of Nepal, where the history of what is today called "community forestry" goes back to the mid-1970s (Gilmour and Fisher 1991). Villagers in Nepal benefit directly from community forestry, if they are a member of a FUG, and indirectly through the development and/or improvement of local infrastructure. However, it appears that the wealthier members can take more advantage of the infrastructure projects (Table 6). This is particularly apparent for the provision of electricity and the construction or improvements of irrigation canals. Many poor households do not own electrical gadgets and little or no land that benefits from irrigation.

As a result of unequal distribution of benefits in community forestry, the issue of "elite capture" has received increased attention in the literature (Hobley 2007). Dev and Adhikari (2007) show impressively that not one infrastructure project was implemented with the objective of benefiting particularly poor people. Wealthy households on the other hand managed to gain disproportionately more from what at a cursory look appears to be beneficial for the whole community. This should not be a surprise, as elites are dominating FUG committees in Nepal (Malla et al. 2003). Similarly, Mahanty et al. (2006, p. 81) conclude that user group committees mirror the social structures in which they develop. Therefore, community forests are "just as prone to capture by local elites as any other valuable local resource". The authors continue that it is ironic that whilst open access scenarios may allow the poor easier access, it is often to degraded and less productive resources. These issues have

¹² We focus initially on these two countries given the availability of empirical data, though disaggregated data distinguishing between different wealth classes remain very scarce.

increasingly been identified and have been addressed by ensuring that the focus of initiatives is on the chronically poor and that FUGs are better sensitized to ensure activities are pro-poor (Pokharel and Carter 2007).

Table 6. Improvement of community infrastructure funded partially by FUGs in Nepal (1993/1996 to 2004)

Infrastructure	Number of study FUGs	Quantity	Contribution of FUGs		Main beneficiaries
			Nepalese rupees	% of total cost	
Village trail	8	45 km	226 000	50	All
Temple	1	One	65 000	85	All
School support	9	9 schools	527 001	25	Wealthy and some poor
Electricity	1	One village	300 000	30	Wealthy
Water supply	5	Five projects	214 000	35	All
Health facility	1	One building	310 000	20	All
Improvement of irrigation canal	5	20 km	200 000	35	Wealthy

Source: Adapted from Dev and Adhikari (2007).

The second example covers the aspect of fuelwood sources in Haraiya village in the Nepalese *Terai*. Although fuelwood is not the only forest product that villagers use, it is a very important resource. Until about 30 years ago, few people bought fuelwood. Most of it was collected in government forests. This has changed dramatically. Today less than two-thirds of the people obtain fuelwood from the traditional source and more than 20 percent have resorted to buying fuelwood (Table 7). This development again affects poorer people more, as most neither own private forests nor do they have the money to buy fuelwood. It is perhaps most interesting that communal plantations and community forests appear to have been completely closed to users. The story for timber is identical (Bhatta et al. 2007). Access to material benefits has not increased but decreased with poor households suffering the most from this outcome.

Table 7. Fuelwood sources in Haraiya village (Nepal)

Sources	30 years ago	20 years ago	10 years ago	2005
Private forest	1.15	2.31	2.69	12.31
Collaborative forest management	0	0	0	0.77
Government forest	95.7	92.69	84.23	64.62
Communal plantation	0	0	0	0
Community forest	0	0	0	0
Purchase	3.08	5	13.08	22.31

Source: Bhatta et al. (2007).

In the third example we look at the contribution of income derived from forests and non-forest sources to total household income for different wealth groups in Forest Protection Committee (FPC) villages in West Bengal. Richer households rely almost exclusively on income unrelated to forest use. The proportion changes as people become poorer, with the landless poor, in relative terms, relying on forest products the most. In absolute terms however, medium-rich and poor households derive more forest-based income (Table 8).

Table 8. Average annual household income derived from forest and non-forest sources in West Bengal (n = 167)

Income sources (in INR)	Rich	Medium-rich	Poor	Poor/landless
Forest	1 169	6 116	5 727	5 441
Non-forest	131 258	34 912	15 622	11 507
Total	132 427	41 028	21 349	16 948
% of income derived from the forest	0.9	17.5	36.7	47.3

Note: Total non-forest income includes agricultural employment, services and monetary value of products collected from the forest and used at home.

Source: Adapted from Banerjee (2007).

We now turn to the crucial question of whether the income from the forests has eliminated extreme poverty in the FPC villages in West Bengal. Without the forest-based income, rich households have a daily income, adjusted for PPP, of US\$4.51 per household member (Table 9). They are therefore far above the threshold for extreme poverty of US\$1 (PPP). Medium-rich households find it more difficult to stay above the poverty line yet they manage even without the additional income from the forest. The poor and landless poor fall below the poverty line.¹³ Their poverty is somewhat reduced by whatever they can obtain from the forest. This is considered merely poverty avoidance/mitigation (Sunderlin et al. 2007) but not poverty elimination. In other words whilst they are benefiting from being able to use forests it is not on a scale sufficient to lift them out of poverty.

Table 9. Average daily income per person in FPC villages in West Bengal

Income sources (in US\$ adjusted for PPP)	Rich	Medium-rich	Poor	Poor/landless
Forest	0.04	0.21	0.20	0.19
Non-forest	4.51	1.20	0.54	0.39
Total	4.55	1.41	0.73	0.58

Note: Household size was assumed to be six people, which is likely to be an underestimate.

Source: Based on figures provided in Table 8.

These findings are similar to those of Vedeld et al. (2004) who estimated “forest environmental income” based on an analysis of 54 case studies in India. They found that the mean annual forest environmental income was US\$678 (adjusted for PPP), which translates into 22 percent of total household income. Off-farm activities contributed 38 percent and agriculture 37 percent to total income. Assuming a household size of six persons, the total average daily income per person is US\$1.41 and about US\$1.1 when forest-based income is deducted. Vedeld et al. (2004) experienced large variations, with one household obtaining US\$2 589.4 (adjusted for PPP) of forest-based income. They therefore calculated the median, which provides a more realistic reflection of the situation. Median total income was US\$1 821 (adjusted for PPP) and forest-based income was US\$346 (adjusted for PPP). This translates into US\$0.67 (adjusted for PPP) per person per day for non-forest income. Including forest income, this value moves up to US\$0.83, which is still below the poverty line.

In contrast to the studies cited above, Reddy and Chakravarty (1999, p. 1146) found that “Forestry makes a significant contribution to the alleviation of poverty”, although as we will see below, it is difficult to see how they could base this conclusion on the data that they present (Table 10).

¹³ We are assuming that they did not significantly under-report income.

Table 10. Total and forest-based income of forest-dependent people in India

Category	Family size	Total income per person (in INR)	Total income/person/day (in US\$ PPP adjusted)	Forest-based income per person (in INR)	Forest-based income/person/day (in US\$ PPP adjusted)
Poor	8.17	2 200.5	0.44	501.3	0.10
Non-poor below median income	8.01	4 405.7	0.77	505.3	0.10
Non-poor above median income	7.01	10 600.3	2.11	452.1	0.09
Average	7.78	5 081.5	1.01	489.1	0.10

US\$1.00 = INR39.925 (26 March 2008)

Source: Adapted from Reddy and Chakavarty (1999).

Average income enables forest-dependent people to barely escape extreme poverty. While poor and middle-income households rely more on forest resources, forest-based income does not enable them to change their poverty status. Poor and middle-income households manage to generate only US\$0.44 (adjusted for PPP) and US\$0.77 (adjusted for PPP) per person per day, respectively. They may also be in a more precarious situation as their families are larger than the families of better-off households. Income has been generated by the poorer sections of the community and they are not slipping further into deeper poverty. Nevertheless, in the poverty statistics they remain “extremely poor”, and continue to find it very difficult to make ends meet.

The findings discussed above are also supported by Kumar (2002, p. 776) who concluded that “... the gains to various sections of the participating communities cannot be assumed to be uniform, and that in the sal forest regions of South Asia the non-poor are likely to gain at the expense of the poor under present JFM arrangements”. Adhikari and Lovett (2006) find that while the better-off households participating in community forestry in Nepal may have absolute higher transaction costs,¹⁴ in relative terms these costs are only about 14.44 percent of the resource appropriation costs. For poorer households this share is above 26.5 percent. In addition, poorer households are facing more restricted access to community forests than the less-poor or better-off households (Adhikari et al. 2004). Baumann and Farrington (2003) also observe that decentralized natural resource management in India has not significantly increased access by the rural poor to natural resources.

Corruption in the forestry sector of the region is prevalent and in many cases persistent. Corrupt officials often see each step of the timber verification process as an opportunity to extract bribes. There is a difference in community forests in that there are fewer abuses; but abuses do occur where local elites have hijacked community decision-making processes and enter into illegal dealings with local forest officials and smugglers. Bribe money paid can be as high as two to three times the amount of royalties paid to government and user group funds (Paudel et al. 2006).

¹⁴ Adhikari and Lovett (2006, p. 5) define transactions costs as “costs incurred in the form of negotiation, monitoring or activities related to institutional design, maintenance of the organization and enforcement of property rights to land and its products”.

Why has devolving forest management served the poor so poorly?

Our analysis has focused on India and Nepal. In the Asia-Pacific region, these two countries have experimented with state-introduced participatory forest management longer than other countries, with the exception of the Philippines. Although quantified information on the impacts of participatory management remains scanty, some very good data have recently been made available, which enabled us to look at the role of participatory forest management in poverty reduction in more detail in India and Nepal. However, the findings appear to be similar in other countries in the region. For example, Liu and Edmunds (2004, p. 54) conclude their assessment of devolution of forest management in China as follows:

Farmers have not always been able to benefit from their newly won tenure rights because of tax and regulatory policies. A lack of capital and technical and marketing expertise has also hampered farmers. Social inequalities and a lack of government accountability have also turned devolution policies against their intended beneficiaries, helping local bureaucrats and wealthy plantation developers to get ahead while the poor lose access to important forest resources.

Our analysis thus far indicates that empirical evidence that devolved forest management, in whatever way, has contributed to reaching the MDG of eradicating poverty, is lacking. Why this is the case, has been receiving considerable attention in the literature for more than a decade. The list of explanations continues to expand. Hobley (2007, p. 25) recently and succinctly summarized the work of Edmunds and Wollenberg (2004). According to this summary the effects of decentralization in forestry are as follows:

- **Limited transfer of authority with limited pro-poor effects:** *Devolution appears to be transferring little or no authority to local forest users and is having, at best, no significant positive impact on the livelihoods of the poor.*
- **Lack of local accountability:** *Local institutions set up under devolution have often been accountable to forest departments and other government offices, rather than to local people with the possibilities of genuine co-management being quite limited.*
- **Disadvantaging the marginalized:** *Not proportionately benefiting women, ethnic minorities or the very poor (i.e. those groups who are generally politically disadvantaged who were often unaware of the implications of policy reform or unable to affect policy implementation to protect their interests).*
- **Small income improvements:** *Gains in income have been relatively small for most people and often overshadowed by negative trade-offs in resource access and control.*
- **Undermining local institutions:** *Pre-existing local institutions have been undermined by their lack of legal standing and clear property rights relative to institutions that are newly created or sponsored by government.*
- **Trade taken over by elites:** *Under policies that expanded opportunities for locals to sell forest products directly, poor and minority men and women often lost their place in the trade to elites within and outside the local community.*
- **Regulatory frameworks:** *Serving as major barriers, states impose excessively burdensome regulatory frameworks making it difficult (time and financial costs) for the poor to enter markets.*
- **Increased state penetration — territorially and in terms of decision-making:** *The state retained control over management decision-making (India); through JFM arrangements it extended its control into local areas, building alliances with local elites to control decision-making.*

While the aforementioned list is comprehensive, several additional reasons emerge from the analysis of the literature.

Rehabilitating degraded land cheaply and asserting state control

We need to remind ourselves of the origins of many decentralized forest management initiatives and schemes. In Nepal, a 1975 conference concluded that the Forest Department had been ignoring the middle-hill forests, which had led to the deterioration of watersheds (NAFP 1979, cited in Gilmour and Fisher 1991). The Forest Department began to look for ways to address the issue without overextending its already meager budget. The selected solution was “community forestry”, which was strongly supported by the donor community. As a result, degraded forest lands were handed over to local communities. In other words, the Forest Department looked for a solution for forest and watershed rehabilitation and not for ways to support livelihood strategies and eradicate poverty. This became only an add-on, as the international forestry policy and donor language changed.

In India too, local people have been and are being mobilized by the forestry administration to protect state forests and plantations (Springate-Baginski et al. 2007) and to regenerate degraded forest lands (Carter and Gronow 2005). As a result, only degraded land has been made available for joint forest management (Box 4). As Lele (2000) explained, the motivation behind the state’s acceptance of joint management is usually that it helps to avoid a fiscal crisis by passing costs to resource users.

Box 4. Forest Departments Offer Resources of Little Value to the Poor

The forest sector is seen as too valuable for powerful people to relinquish. There is a marked tendency for central governments to decentralize management responsibility for the most degraded and least valuable forests while keeping the most valuable revenue-generating forests under central control. Thus, it is not just a coincidence that most community forestry, co-management and other forms of participatory forestry first gained a foothold on degraded forests and areas considered unproductive wasteland by the forest bureaucracy.

Source: Capistrano and Colfer (2005), p. 297-298

The story in the Philippines is similar. Although CBFM was promoted to improve the well-being of upland forest dwellers, the entry point for CBFM was forest cover and watershed management improvement (Contreras 2004). It remains an important aspect of CBFM although under CBFM agreements fairly large areas (sometimes more than 50 000 hectares) of logged-over forests have also been made available to POs (Pulhin 2005; Pulhin et al. 2007).

In general, forest departments are not inclined to hand over forests that still contain trees of commercial value, such as in Lao PDR (Hodgdon 2007). In Cambodia, no undisturbed forests have been handed over to local communities and most so-called slightly degraded forests are in fact considerably degraded (Fichtenau 2002, cited in Sunderlin 2004).

Magno (2001, cited in Contreras 2004) points out that in the Philippines CBFM began as an instrument to legitimize the state’s relationship with rural people at a time when populations and insurgencies were rising in upland areas. A common goal of decentralization is addressing central government problems of legitimacy or economic and political crises (Bazzara 2003; de Grassi 2003; Kassibo 2003; Oyono 2004; Resosudarmo 2004, all cited in Larson 2005). Li (2002, p. 274) follows this train of thought when she writes:

The increasing appeal of CBNRM [Community-Based Natural Resource Management] to government authorities over the past decade can be interpreted in terms of a shift in territorializing strategies and state priorities regarding the uplands. The logging boom over, direct state control over natural resources is less important. What has become urgent in both countries [the other country being Indonesia], but specially the Philippines with its ongoing insurgency (McDermott 2001, p. 35), is the

establishment of control over upland populations by pinning them in place, regularizing their resource use according to state-defined rules and procedures and, through the extension of institutions and bureaucratic processes, enmeshing them more firmly as state clients.

The described processes are no different from the resettlement policies of the Royal Thai Government, which had the objective of controlling the “communist” insurgency during the 1960s and 1970s (Anon 1991c, cited in Enters 1992).

Whatever the reason, decentralization of forest management has often been from the perspective of forest departments and central governments a means to rehabilitate degraded forests or wasteland, or for governments to get a foothold in areas with populations that are difficult to control and “in need of mainstreaming”.

Devolution as a project

A further obstacle to making devolved forest management a long-term contributor to poverty reduction is the “project” or “programme” mentality of most actors involved in the process, including but not limited to local people, NGOs, government departments and donors. In India, this is threatening the concept of JFM. The recently published report of the National Forest Commission (GoI 2006, p. 182-184) emphasized this problem:

JFM has been perceived mostly as a forest department program in which people participate. In fact, it should be a people’s program that the department should facilitate. JFM is not only what the department gives to the people but also what the community has given to the cause of forests.

Large quantum of funds is flowing to JFM, after being diverted from amounts that erstwhile used to go for forest protection. As long as funds were flowing, the samiti members of JFM societies were attracted to the programme. Once the flow of funds was reduced or stopped, the situation changes and JFM activities often wither away.

This would indicate a failure of the concept of JFM taking root in such areas. People should be motivated not by external money supply but by the funds generated from the JFM effort from the benefits of the protection itself.

All efforts should be made to convert the people from mere wage earner to stakeholders and even shareholders in the entire endeavor.

Springate-Baginski et al. (2007, p. 341) come to the same conclusion:

However, the main emphasize on time-bound wage labor incentives [in India] has often led to the disinclination of local people to continue formal forest management activities when the funding phase has ended. This may be contrasted with the situation of self-initiated groups and user groups in Nepal, where (without interference) most of the groups tend to continue in perpetuity.

How common this problem is, is emphasized by Pulhin (2005, p. 19) for CBFM in the Philippines:

There is widespread view that CBFM is a DENR “project” and not a national strategy for forest management. While EO 263¹⁵ and its implementing rules and regulations clearly stipulate that CBFM is the national strategy for sustainable forestry, different groups view it instead as a DENR project. This is evident during the discussions of the various sectors that participated in the two national workshops that repeatedly referred to the six case study sites as “DENR projects” despite the fact that the “actual project” in terms of project staff, resources, and other external inputs have not been existing for years. The same view is held even by the case study writers from the NGO and academic/research institutions that often referred to the study areas as project sites in their draft reports. One final report has even retained “CBFM Project” in its title despite the fact that said project have in reality expired more than five years ago. The project-orientation of CBFM is likewise strongly perceived within DENR itself. The Philippine Forestry Statistics, the official DENR annual publication on forestry statistical data, referred to the different CBFM sites in all the regions of the country as “Community Based Forest Management Projects”.

To some extent, the “project” or “programme” mentality has historical origins. Many participatory forest management initiatives either started out as projects, many of them donor-funded and donor-driven. Nascent initiatives also received additional financial support to speed up — to reach predetermined targets — the rehabilitation of degraded areas by handing over forest land, not necessarily stocked with trees, to local communities. Key players in the initiatives get hooked on additional funds and incentives on offer and find it difficult, or have no intention, to operate when financial support or other incentives are withdrawn. This is a common problem of many development interventions that try to show early results by buying participation, which has been heavily criticized in agriculture by Chambers (1994, p. 22):

Bad programs in agriculture are buffered by subsidies, which extension staff dispense to one or two farmers who then present evidence of adoption to visitors. ...Presents, promotion, prizes can be orchestrated to create apparent success.

Arbitrary changes making lives of poor people more difficult

Historical origins aside, it is obvious that the level of trust between local people and forest departments, and the “projects” and “programmes” they are implementing, is often extremely low. There is ample evidence that promises are not kept and that arbitrary changes in legislation, rules and regulations have led to hardship and loss of income. Hence, the lack of interest in the form of participatory management that is on offer is a rational reaction, if no short-term benefits through various forms of incentives are provided.

The arbitrary changes can have serious consequences for local people. In the Philippines, POs have to obtain resource use permits (RUPs) before harvesting can commence. Nationwide suspensions of already issued RUPs in 1999 and 2003 (Pulhin 2005) and the cancellation of CBFM agreements in 2005 and 2006 (Pulhin et al. 2007) led to huge financial losses for a number of POs that had not broken any rules but were affected by the blanket ruling nevertheless (Box 5).

¹⁵ Executive Order (EO) 263 covers “Adopting Community-Based Forest Management as the National Strategy to Ensure the Sustainable Development of the Country’s Forestlands Resources and Providing Mechanisms for its Implementation”. It came into effect on 29 July 1995 (FMB undated).

Box 5. Arbitrary Changes Undermine the Positive Effects of CBFM in the Philippines

The greatest blow to CBFM [Community-Based Forest Management], however, happened less than a year ago when the former DENR [Department of Environment and Natural Resources] Secretary cancelled about 1,200 of the more than 1,500 CBFMAs nationwide without due process. This was a major violation of the CBFMP provisions. Fortunately, implementation of the cancellation order was stopped by the new Secretary due to pressure from civil society and from legislators during the DENR budget hearing. However, the propensity to order wholesale cancellations remains a big threat to the sustainability of CBFM and its potential to help reduce poverty in the Philippine uplands.

Source: Dugan and Pulhin (2007), p. 44

Until recently, individuals could obtain a permit from the local forest office in Nepal to collect and transport lichen. This has been changed in a circular and the permit now has to be obtained from the Forest Department in Kathmandu, a procedure far too cumbersome and expensive for many collectors. As a result, many districts now have stockpiles of lichen that they are not able to sell (Hobley et al. 2007) and expected income flows have been halted. Many people are aware that such sudden changes in rules and regulations can affect their economic activities any time. Hence, they are understandably more interested in project-based incentives and short-term benefits that appear to be more certain.

Perceptions of forest dwellers are static and not constructive

Finally, many rural people, most of them still relying largely, although not exclusively, on agriculture as a major income earner, are affected by what Walker (2004) has termed *arborealisation* of agriculture. To suit the participatory forest management agenda, livelihood strategies are redefined. People who used to be called “forest marauders”, who destroy forests through their shifting cultivation practices, are now finding themselves characterized as “forest dwellers”, “forest-dependent people” or “biodiversity custodians” who have intimate relationships with forest ecosystems. *Farmers in the forest* apparently lead “forest lives” and are involved in “forest struggles”, when in fact they are farmers or herders and base their livelihood strategies mainly on forest soils and agricultural production.

As Walker (2004, p. 321) observes for Thailand, “The community forest legislation appears somewhat disconnected from the upland realities of widespread commodity production and predominantly individual management of agricultural land”. This redefinition can have serious consequences when, as has happened in Andhra Pradesh, India, traditional shifting cultivators are turned into forest managers by “surrendering” their traditional practices (Springate-Baginski et al. 2007). Tacconi et al. (2006) also find that rural livelihoods in Indonesia do not necessarily benefit from forests more than from alternative land uses. As a result, democratic local governments with control over their forest resources could choose to authorize forest conversion to stimulate economic development and reduce poverty.

It is ironic that at a time when agrarian societies are rapidly transforming (see the earlier section “Rapid developments, transforming economies and generating choices”) and the share of non-agricultural income, excluding forest-based income, is decreasing, many representatives of government departments, NGOs, the donor and scientific community, attempt to maintain the image of traditional and static forest livelihood strategies. This may be inconsequential where benefit-sharing arrangements include valuable products (e.g. timber). For poor people, who can only hope to obtain a small share of resources of little value, this is detrimental. In this sense, what is advocated as pro-poor forestry is in fact anti-poor.

Are minor forest products making a major contribution?¹⁶

There has been much debate with respect to the NWFP contribution to poverty reduction, both real and potential. Policy-makers and foresters alike have tended to overestimate the employment benefits associated with commercial timber harvesting. On the other hand, the significance of employment and income generation in the NWFP sector remains to a large extent obscure. To many foresters NWFPs are still what they were called historically, i.e. minor forest products. The example of India indicates that this view is somewhat distorted. NWFPs contribute over 75 percent of total forest export revenue and add significantly to the income of about 30 percent of rural people, i.e. about 250 million people (ITTO 2006). However, the level of benefits that NWFPs can provide is location-specific and boom-and-bust cycles for specific products impact income generation significantly.

The village of Besiq is located in East Kalimantan, Indonesia, in the Kedang Pahu Hilir River catchment area. Although much of the district where Besiq is located is undergoing rapid changes through logging, the expansion of estate crops such as oil-palm, mining and transmigration projects, the village has been barely affected by such developments. In fact, during the 1990s the village rejected a proposal for the establishment of an oil-palm plantation on its land. Access to the village is not easy and the landscape continues to be dominated by forests and agroforests. Due to distance to markets, economic diversification is taking place only very slowly. The people can be described as truly forest dependent. Close to 90 percent of their income is derived from forests and agroforests (Figure 2).

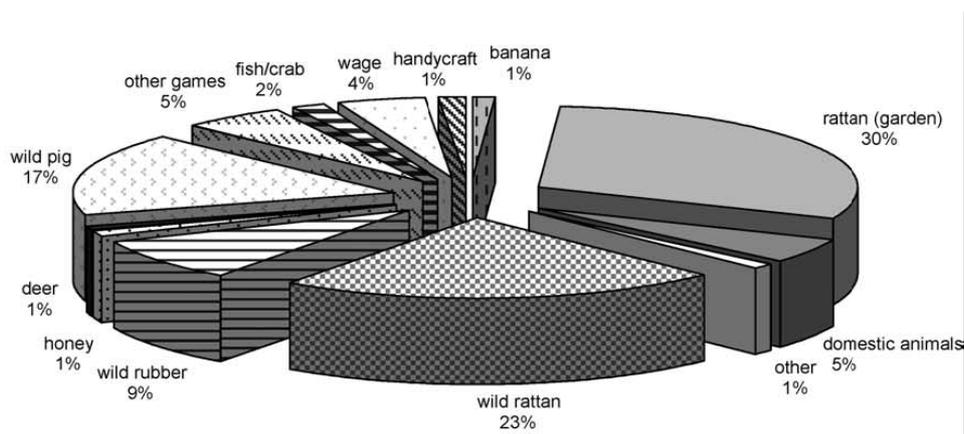


Figure 2. Mean household portfolio in Besiq, East Kalimantan, Indonesia

Source: Dewi et al. (2005).

According to the classification of forest types applied by Chomitz et al. (2007), Besiq is a typical example of a village located in “Areas beyond the agricultural frontier or forest core; remote (or relatively remote), well endowed with forests and limited economic alternatives”. There are probably thousands of analogous villages, with people leading similar lives and following comparable economic strategies throughout the Asia-Pacific region, although as Chomitz et al. (2007) show the number of people living in such forest landscapes may not be much higher than 6 million.¹⁷ The endowment of forests allows people in Besiq “to live well at or near the subsistence level” (Dewi et al. 2005). For people in thousands of other villages throughout the region, forests continue to fill a central livelihood role. Unlike Besiq, many of these people can probably be better described as *farmers in the forest*, a term used by

¹⁶ We aware that the term “minor forest product” has fallen out of fashion and has been replaced by “non-wood forest product”. We use it to indicate that to the vast majority of foresters and revenue-seeking finance departments, NWFPs remain a minor consideration.

¹⁷ This excludes PNG which has possibly another 3 to 4 million people living in forests.

Kunstadter et al. (1978) for farming communities living in the uplands and highlands of Northern Thailand.

In Lao PDR, NWFPs worth an estimated US\$216 million are produced annually, of which local use accounts for about 85 percent or US\$184 million (FAO 2006c). The direct use of biological resources in Lao PDR by poor rural households is worth some US\$475 million a year, or an average of US\$100 per person (Emerton 2005). These figures should be noted as assuming that price is relative to location and the unlikely assumption that there is no movement of capital or people between systems.

In a simplified model, Foppes and Ketphanh (2000) show the annual income of a five-person rural household to be US\$700 or US\$2 170, if adjusted for PPP (Table 11). The average household derived around US\$868 PPP per year as forest income, which turns out to be 40 percent of the total income. Without the forest-based income, this translates into US\$0.71 per person per day. Adding the forest-based income lifts each individual to US\$1.19 and helps to escape the extreme poverty baseline.

This however, is only the case for the average household and means that while for some households forests potentially provide a permanent exit from extreme poverty, others remain left behind. For them, to use Sunderlin's (2004) definitions, forests have only a poverty mitigating effect. They continue to be a "source of subsistence, a seasonal gap filler and a safety net in emergencies".

Table 11. Composition of annual income of an average Laotian rural household of five persons (in US\$)

Source	Income (according to official exchange rate)	Income adjusted for PPP	Percent of total income
Forest foods	200	620	28
Fuelwood	40	124	6
Other NWFPs	40	124	6
Total NWFPs	280	868	40
Rice	350	1 085	50
Total non-cash	630	1 953	90
Cash income	70	217	10
Total income	700	2 170	100

Source: Foppes and Ketphanh (2000).

Lao PDR is making a rapid transition from a subsistence to a cash and market economy, although many outsiders have hardly noticed this. Rural communities throughout the country are being drawn into the embrace of the market economy and of the central state. The construction of roads, schools and health centres, the provision of credit and new crops and technologies and the arrival of traders and modern consumption attitudes are all remoulding the rural economy and society. The agrarian transformation process also affects the role and place of forests and, in particular, NWFPs, in rural people's lives and livelihoods. Market integration leads to forest degradation on the one hand and creates opportunities for livelihood diversification on the other. But these opportunities are unequally available and likely to promote social differentiation. Some households are able to embrace new opportunities while others are forced to continue to rely on a declining and increasingly degraded forest resource (Rigg 2006a). In all likelihood, it is the less vulnerable and non-poor villagers who are able to turn NWFPs more easily into cash.

Foppes and Ketphanh (2000, p. 15) predicted that Lao PDR has a remarkable opportunity to build a strong NWFP subsector as a basis for sustainable economic development in the Southeast Asian region. Continuous deforestation and forest degradation however throw doubts on this optimistic scenario. The more likely scenario is that only a small group of

people, including traders from neighbouring countries such as China, Thailand and Viet Nam, will benefit. The vast majority of the poor are unlikely or unable to use forest-based income to escape extreme poverty, a view that is also supported by others familiar with the situation (Box 6). It appears that this view is also shared by the increasing number of young Laotian women and men who move away from the rural areas in search of a better and different life, a development that according to Rigg (2006b, p. 174) “is not symptomatic and emblematic of rural development failure, but indicative, in many cases, of rural development success”.

The situation described above is from an NWFP advocate’s perspective of a pessimistic nature. Recent community-based enterprise development projects provide a more optimistic picture. FAO (2006c) reports that enterprise group members could increase their income by between US\$5 and US\$70 over a period of six months. The upper limit would clearly make a difference to poor households, although it is unclear from the report, which wealth categories the participating households belonged to. In another project in Lao PDR, the formation of marketing groups helped to raise the local price for cardamom from the usual 500 kip¹⁸/kg to 35 000 kip/kg in 1998, although prices retreated to between 10 000 kip/kg and 15 000 kip/kg three years later. Returns to labour remain modest and are only around 55 percent of the returns that can be made as a hired labourer in road construction or agriculture (Morris 2002).

Box 6. Where There Is More to Share, There Is Less for Those Most in Need

General findings within Lao PDR suggest that the higher the revenue and the more public the resource, the less distribution there is of benefits to communities. This is most acutely demonstrated in the case of high value timber when a village receives a very small percentage of the profit for investment into the village development fund. However, to use this money, the village must first formulate a plan and obtain permission from the district or province. The money is usually used for public infrastructure and is not readily available to all members of the community. Individual villagers do benefit from helping to monitor and select trees; however, they are not necessarily the people from the village who are most in need.

Source: Gerrard (2007), p. 47

Three caveats apply to the two enterprise development projects described above. First, if we are interested in reducing poverty then providing information on income generated by “the average household” is insufficient. There is no guarantee that the additional income will benefit the poor segments of the community. Instead, the state, local elites and powerful outsiders are in a better position to take advantage of what a project and the market offer, especially if valuable products are involved. This is supported by Sarin’s (1998, cited in Fisher 2000) observation in India about the use of commercially valuable NWFPs (e.g. cashew nuts, bamboo and fibrous grasses) that are subject to royalties and restrictions, while less valuable products do not fall under such restrictions. In India, tribal people are obliged to sell NWFPs harvested from the forest to the Large-Scale Adivasi Multi-Purpose Society (LAMPS). LAMPS was created as a vehicle for tribal development, particularly to ensure full return on the collection of NWFPs, to which the tribals were given sole rights. According to Sarin (1998, cited in Fisher 2000), LAMPS appears to gain more benefits than its tribal constituents. In response, some tribal people have resorted to selling their products directly to traders and tourists (Hegde and Enters 2000).

Second, income generation and poverty reduction are not the same. An additional income of US\$70 over a six-month period may mean that a household can escape extreme poverty, or it may mean that it remains poor, although slightly less poor.

¹⁸ US\$1.00 = 8 743 kip (24 March 2008).

Third, there is no shortage of project documents claiming success — that is mainly success in the short term (Box 7). We know little about the sustainability of project outcomes. Even less is known about project costs. If the costs for formulating and implementing a development project are included in any financial analysis, then cost/benefit ratios are likely to fall below 1. So far, it appears that minor forest products have not been able to make a major contribution to poverty reduction. Returning to Sunderlin's (2004) definition of poverty reduction, we can conclude that NWFPs are supportive of subsistence livelihoods, as they "act as seasonal gap fillers and provide a safety net during emergencies". They are of significant importance to the extreme and coping poor (see Hobley 2007 for definitions) but have not sufficiently contributed to the sustainable socio-economic advancement of the poor out of poverty (Neumann and Hirsch 2000). There is a strong correlation between NWFP dependence and poverty and "the poor often use forest products due to the (permanent and temporary) lack of better alternatives" (Angelsen and Wunder 2003, p. 21). In fact, Angelsen and Wunder (2003, p. 22) take this finding one step further when they proclaim, "forest activities only attract poor people".

Box 7. Claiming "Success" in Africa

I have claimed that their [Community-based natural resource management projects and programs] "success" is reproduced within a network of multi-lateral and bi-lateral agencies, international NGOs, in-country NGOs and a limited number of senior government officials in recipient countries. The discursive power of the theoretical benefits to environment and community of CBNRM, the need to proclaim success to other international audiences, and the diffuseness and range of the social and environmental objectives, all lie behind representations of this "success." Success, in turn, is defined in ways that will allow it to be found. Success stories prevail against criticism that comes from other quarters (particularly local people who have experienced CBNRM, and independent commentary from scholars).

Source: Blaikie (2006)

Angelsen and Wunder (2003) also provide an answer to the question of why NWFPs have not contributed effectively to poverty reduction. They list three main reasons:

1. Low returns from most NWFP activities, as natural forests are frequently economically inferior production environments.
2. Remoteness and poorly developed physical infrastructure complicate market access, and usually only a limited number of high-value products can pay their way out of the forests (compare with the aforementioned Indonesian case).
3. Some forest product trade is characterized by monopsonies¹⁹ and exploitative market chains, which can lead to lack of transparency (many poor people have no market information whatsoever) and manipulation.

To this "trinity of imminent misery" (Angelsen and Wunder 2003) we can add restrictive legislation and bureaucratic procedures and permit systems, which, as we have noted earlier, reduce returns even further by opening windows of opportunities for corruption, i.e. the payment of "facilitation" money, a cost to traders, which ultimately pushes down prices paid to the producers (Belcher and Schreckenberg 2007).

The findings of Neumann and Hirsch (2000, p. 42) therefore should not come as a surprise:

¹⁹ A monopsony is a market form with only one buyer, called a "monopsonist", facing many sellers. It is an instance of imperfect competition and the reverse of a monopoly, in which there is only one *seller* facing many buyers.

Poor households commonly opt out of commercial NTFP²⁰ harvesting when given alternative means of livelihood, such as agriculture.

There is one more issue that we need to cover. That is the commercialization of NWFPs. This issue has been recently analysed in detail by Belcher and Schreckenberg (2007). NWFP commercialization, defined as increasing the value of an NWFP in trade, is expected to increase income and employment opportunities for the poor and otherwise disadvantaged people, an expectation that is well-documented throughout the literature.

There are a number of risks involved in increasing demand for individual or a range of products. Common risks include overharvesting, which can lead to forest degradation. More intensive management can have the perverse effect of natural forest being replaced by plantations of so-called NWFPs. For example, the Knuckles Range in Sri Lanka is threatened by a “cardamom invasion”, which has changed the unique forest biodiversity of the area (Bandaratillake 2005). The commercialization of bamboo has in parts of China completely replaced natural vegetation (Fu and Yang 2004, cited in Belcher and Schreckenberg 2007). Boom-and-bust cycles can also mean that instead of making money, money is lost, when prices collapse. Again, if a resource gains in value it will become increasingly attractive to powerful investors with the means and capital to dominate the market. One only has to look at the rapid spread of oil-palm in Malaysia and Indonesia to conclude that potentially there is money to be made by local people, if they have secure land tenure, which is often not the case. In reality, poor people can only hope for some employment in the industry as labourers. The last aspect should not be belittled. In Malaysia alone, the oil-palm industry provides jobs for 0.5 million people, many of whom are poor.

Do these risks make it worthwhile for the poor to take risks with the commercialization of NWFPs? Or more generally, should commercialization be promoted? Belcher and Schreckenberg (2007, p. 372) conclude their review as follows:

Our intention in this article has not been to condemn all attempts at promoting NTFP commercialization, but rather to caution against optimism still prevailing in some quarters that it can be an easy answer to achieving simultaneous conservation and development.... In general, NTFP commercialization is less likely to be successful as a means to achieving conservation. However, it remains a useful means of contributing to improved livelihoods, particularly of the marginalized forest-dependent poor.

The authors’ optimism regarding impacts on the livelihoods of the forest-dependent poor is not borne out of the review. We agree with Angelsen and Wunder (2003) who believe that it is unfair to use the “poverty trap” label in a general manner. We do not contest that NWFPs, commercialized or not, play a part in the livelihoods of poor rural people. We will quote Angelsen and Wunder (2003, p. 24) again in our closing arguments:

The trap label would be justified in those cases where alternative development options actually exist but where policies, donor projects or other external interventions seek to maintain people in their low yield forest extraction activities, based on romanticised visions about the alleged ecological sustainability and large income generation potential on NTFPs.

More than a decade ago the fragility of extractive economies in general, and the unsustainable use of NWFPs in particular, were pointed out by Homma (1992), Hall and Bawa (1993), Gupta (1994), Ros-Tonen et al. (1995), Antolin (1995) and Parnwell and Taylor (1996). Their warnings have apparently gone unnoticed. The romantic vision persists (remember the

²⁰ “Non-timber forest product”, synonymous with NWFP.

arborialization of agriculture discussed further above), and high expectations and optimism remain with many, although not all, people. In particular, and this is frequently overlooked in the quest for finding forest-based solutions, local people, with younger people at the forefront, are actively looking for and finding alternatives. Many turn their backs on forest-dependent lifestyles, encouraged by the process of de-agrarianization (Hobley 2007) or agrarian transformation (Rigg 2006c).

Increased mobilization, outmigration and remittances have profound effects on rural areas and potentially on forests.²¹ Each person who leaves means one less forest-dependent person. In addition, remittances mean that forest dependence of those who stay behind is also reduced. Many rural dwellers, forest users or not, have made a choice and opted to retain the NWFPs in the forest. Hence, high expectations of the NWFP role in eliminating extreme poverty are not only squashed because of inherent problems, but also because agrarian societies are becoming increasingly less agrarian and forest dependent. It looks like the rural poor are far more rational in their decision making than they are given credit for.

²¹ As noted earlier, Hecht et al. (2006) and Hecht and Saatchi (2007) found that remittances contributed significantly to forest recovery in El Salvador between 1992 and 2001.

How pro-poor can outgrower schemes in forestry be?

Outgrower schemes have made a striking comeback in the forest and forestry debate in recent years. There is hope that they are able to provide a platform for collaboration between timber companies or wood processors and local communities. In fact, outgrower schemes are not a new development. Arnold (1997/1998) describes an outgrower scheme in the Philippines that started in 1968. In this case, the Paper Industries Corporation of the Philippines (PICOP) encouraged farmers to devote part of their land to growing *Albizia falcataria* on eight-year pulpwood rotations. Mayers (2000) presents the case of the Western India Match Company (WIMCO), which established a partnership with farmers, to grow *Populus deltoides* in India in the late 1980s, and the scheme initiated by Advance Agro PLC in Thailand in 1992.

There is no single definition of outgrower schemes. Some interpret the scheme broadly and others focus quite narrowly on certain aspects. For example, Desmond and Race (2003, p. 78) define outgrower arrangements as “a contractual partnership between growers/landholders and a processing company for the production of commercial products”, although not all contracts are necessarily of a formal nature. While the majority of plantations remain under corporate ownership, various forms of outgrower schemes are assuming greater importance in plantation expansion in the Asia-Pacific region and beyond (Mayers 2006b).

Partnerships between companies and tree growers can take many forms. They may be informal or formal (e.g. through formal contracts), occur between companies and growers, who may be individuals, groups or communities. Partnerships may be short or long term, and offer only financial returns in the form of cash payments, or multiple benefits. Besides company representatives and tree growers, NGOs, forestry departments and market agents (or intermediaries) may be involved in arrangements. Although small-scale growers are known to have developed small-scale plantations or commercial forestry ventures independently of industry and government assistance, most choose to establish links with the industry before planting trees (Box 8) or before harvesting commences (Desmond and Race 2003). Midgley et al. (2007) report a case in Luang Prabang Province, Lao PDR, where local villagers have established about 13 000 hectares of teak (*Tectona grandis*) plantations without establishing a link to industry first. A Vietnamese investor recently invested in a wood-processing mill and intends to establish a partnership with the local teak growers.

Box 8. Farmers Growing Trees for a Veneer Mill in Sulawesi, Indonesia

In the Bulukumba district, in South Sulawesi Province, Indonesia, a private company (PT. PAL) initiated local farmers to grow timber trees for veneering – after building a veneer mill in the district in 2001. With good growing conditions (the first harvest is expected within 5-8 years) and some farmers already receiving pleasing financial returns, farm forestry, in the form of an outgrower scheme with a supply-purchase agreement, has been established across nearly 12,000 hectares, or 11 percent of the district’s total land area. The partnership between the company and the tree growers is supported and facilitated by the Head of Bulukumba District Forest Office. Although there is no written contract, PT. PAL distributes free tree seedlings to farmers and in return there is an expectation by both partners that farmers will sell their timber to the company. It is anticipated that farmers will continue with the local approach for selling timber, by selling their standing trees to firms (or middle-men) that harvest and transport the logs to PT. PAL. It is estimated that there are 12 ‘middle-men’ firms in the Bulukumba district that fulfill this role of harvesting and transporting logs.

Source: Race (2006)

Despite the long history of outgrower schemes, they have received scant attention in the literature. To what extent such schemes can contribute to poverty reduction has hardly been analysed. Experiences from South Africa indicate that outgrower schemes have involved even the poorest and underemployed smallholders, because of credit extended by companies, while

employment opportunities have benefited the landless in some areas (Mayers 2006b). Literature covering outgrower and corporate and small stakeholder partnerships in the Asia-Pacific region includes work by Lang (2002) and by FAO and CIFOR (FAO 2003).

In general, incentives for the corporate sector to develop outgrower schemes include increased supply of raw materials, access to additional and productive land, increased resource security without the need to purchase or rent land and supply diversification. In addition, the outsourcing of wood production is seen to both save costs and spread risk for larger companies. In Indonesia, companies also opt for partnerships with local villagers to improve their reputation (Nawir and Gumartini 2003). Tree-growers' interest is in alternative and additional sources of income, guaranteed markets for products, reduced marketing risks and, in some cases, financial and/or technical support (Desmond and Race 2003). Local teak planters in Lao PDR stated as the main reasons for planting teak income generation and strengthening of land rights (Midgley et al. 2007). Where labour shortages occur, landowners are also interested in using idle land (Nawir and Gumartini 2003). This is also confirmed by van Noordwijk et al. (2007) who observed that smallholder tree planting is on the increase as it matches livelihood strategies that focus on temporary urban (or overseas) jobs as an escape from poverty, while retaining a link with the rural home base.

The last observation is especially interesting for two reasons. First, it indicates that rural people seek off-farm employment as a venue for poverty eradication, which is characteristic of the rural transformation that we have described above. When given a choice, farmers, and especially their children, tend to leave the land. Second, labour shortages in agriculture provide an opportunity to create assets for landowners. This means that more land might become available for growing trees. However, this depends on relative prices. With the current boom in bioenergy and the escalating prices for products such as palm oil, we may also witness more farmers moving out of growing trees and towards bioenergy crops instead. As a result, we may find fewer than more trees dotting the landscape. This is already happening across the Asia-Pacific region as far away as West New Brittany, PNG, where the financial returns for growing oil-palm are far more attractive than for *Acacia mangium* or teak (personal observation, 2006).

Acknowledging the diversity of partnerships and arrangements, Månsson (2003, p. 30) concludes that the following ingredients determine success:

- *arrangements are appropriate (e.g. partners should have a reasonable likelihood of deriving benefits and contributing to the strengthening of the sociocultural and economic context of local communities);*
- *contributions (e.g. land tenure, business viability) and partnerships are secure;*
- *production and market risk are accurately calculated and shared;*
- *partners have the social and technical expertise to genuinely negotiate arrangements;*
- *partners are informed of realistic prospects and opportunities (e.g. flexibility of options);*
- *arrangements and forestry practices are consistent with sustainable forest management principles at the local and regional levels; and*
- *arrangements contribute to wider community well-being.*

Not all outgrower schemes are successful and the major constraint is poor links between tree growers and the industry. Frequently and for a variety of reasons, smallholders suffer from price disadvantages, especially in monopsony markets. This is not only a constraint in developing countries but also in Australia, where many farmers perceive lease payments for their land to be too low compared to alternative options (Race 2006).

One of the remaining issues that needs further elaboration is how outgrower schemes might contribute more to poverty reduction. As explained above, the literature has not tackled the issue. Even in South Africa it appears that none of the schemes has taken households out of poverty (Mayers 2006b). In India, they appear to favour medium- or large-scale farmers in commercial agricultural areas, i.e. not the extreme poor. In fact, as Mayers (2000, p. 40) continues:

... there is evidence of absentee landlords favouring these farm forestry contracts and thereby pushing tenants off the land.

This means that landless people may not only be unable to participate in a company-smallholder forestry scheme, but they may also lose their jobs, which previously had at least a poverty-mitigating effect. Also, we need to keep in mind that tree growing is a long-term, high-risk investment, while the poor require income in the short term and strive to minimize risk. Outgrower schemes allow better-off farmers with idle lands opportunities to create assets to continue to stay above the poverty line or even to move further away from it. At the moment, there is very little evidence illustrating that such schemes have a truly pro-poor effect, i.e. lifting extremely poor people sustainably above the poverty line.

Today's forests' and forestry's poverty reduction effects remain elusive

Two main conclusions emerge from the aforesaid discussion. First, there is a clear distinction between "income generation" and "poverty reduction". There is no doubt that forests and forestry can significantly contribute to income generation. However, devolved forest management, NWFPs and outgrower schemes have to date not provided meaningful and sustained revenues to overcome poverty.

Second, in discussing poverty alleviation, there is a need to clearly distinguish between "poverty elimination" and "poverty mitigation or avoidance". Forests and forestry unarguably play a role in the latter, as millions of poor people use forest products to support their subsistence livelihoods and cultural practices, and to supplement their meager incomes. However, it also becomes very obvious that the benefits that they are able to derive are very often insufficient to eliminate their poverty and to provide for long-term socio-economic advancement. In this sense, we can conclude that forests and forestry are a "safety net" at best and a "poverty trap" at worst.

The main reason why the extreme poor in particular have been unable to benefit to a larger extent is that there are too many powerful players involved that prevent this from happening. Better-off people, the "elite", traders and forestry departments are in a better position to make use of the benefits that forests and forestry offer. In the first instance, the question therefore is not whether new and pro-poor forest policies are needed but rather in what way they will be implemented on the ground to reduce the poverty of the approximate 450 million people who live in and around forests in the Asia-Pacific region.

Any poverty reduction strategy in the forested landscape also needs to consider the dynamics of rural transformation and agrarian change, including agricultural intensification. While these developments provide opportunities (e.g. more land may become available for forest recovery and tree planting)²² they also indicate that some of the solutions currently under discussion may not be what people have decided on by themselves, i.e. that they are better off leaving the forest frontier in search of new livelihoods and alternative income-generating opportunities.

²² See for example the recent work by Meyfroidt and Lambin (2007) on the causes of reforestation in Viet Nam.

6. FUTURE FORESTS: “LITTLE” OR “BIG TREES” FOR “LITTLE PEOPLE”?

Banerjee (1996, p. 31) noted the following:

The deficiencies in the present community forestry concepts are: transfer of degraded and other non-productive forest lands rather than productive high forests to the people, less emphasis on creation of an enabling environment for sustaining community forestry, lack of attention to promoting equity among the participants in village groups and need of large investment.

This statement presented in 1995, five years before the adoption of the MDGs at the UN's Millennium Summit, and notably the endorsement of MDG I, reads as if it was presented 13 weeks and not 13 years ago. Similar issues were raised at RECOFTC's conference in 1995 “Income Generation through Community Forestry”.²³

The constraints he brought to the forefront are still with us. Warner (2007, p. 11) recently provided a succinct summary of Banerjee's 1996 paper:

By this, he [Banerjee] meant that social forestry was about providing the poor and the marginalized (the “little people”) access to degraded forests (the “little trees”) that, if well managed, could provide fodder, fuel, medicinal plants, and a small amount of income.

The potential of forests and forestry to contribute to poverty reduction has been largely unrealized despite many changes to forest policy and an increasing shift to various forms of decentralized forest management. We will reach 2020 in 12 years. The question that remains to be answered is, whether the trend of providing little trees and NWFPs of little value for little people will continue? Will the future be like the past, or will we experience a change, which will have to be considerable to make forests and forestry real contributors to poverty reduction, in the sense of poverty elimination and not merely poverty avoidance or mitigation? By “considerable” we mean a paradigm shift away from what Blaikie and Springate-Baginski (2007) call the “frozen style of management of forests” (p. 382) and a retreat from the “hegemonic role” that many, although not all, forestry administrators currently play. Will we see profound reform and re-orientation, terms often heard within government administrations? Or will the political-economic environment, authoritarianism and the internal culture of many forest administrations avoid what is needed to make forests and forestry tangible contributors to poverty reduction?

Whilst a genuine paradigm shift, structural reforms within forestry administrations and urgent attitude changes of many foresters are crucial, broader change is required. Too many other stakeholders with an interest in valuable forest resources work against a wider and more equitable distribution of benefits. Can we expect the local elite to retreat quietly and leave benefits to the underprivileged? Will politicians in the future be more concerned about reaching the goal of poverty eradication or will they continue to respond to pressure groups that advocate blanket logging bans and the resettlement of people from protected areas?

There are basically two, very unsatisfying, key answers to all the questions above. They are “yes” and “no”. They are followed by “maybe” and “it depends”, although on what is usually not specified or left intentionally vague.

Next, we will start to untangle the issues that fall under the rubric “it depends”. By this we mean, in the first instance, global and regional trends, and, in the second instance, a set of

²³ Organized in collaboration with AusAID, DANCED, UNEP and the BCN.. Many of the points raised, issues discussed and recommendations made during the seminar still have relevance 13 years later.

scenarios that indicate what forests and rural livelihoods may look like and what forestry may be all about in 2020. We will then try to illustrate to what extent a “yes” or a “no” will make a difference to forests and forestry’s abilities to contribute to the socio-economic advancement of poor people in the Asia-Pacific region.

Asia and the Pacific in 2020: more of the same?

In an attempt to begin to portray 2020 forests and forestry it is useful to look backwards first. In Byron’s summation of FAO’s “Future of Forests in Asia and Pacific: Outlook for 2020” conference (16-18 October 2007) he noted the presence of major recurring themes compared to the first Asia-Pacific Forestry Sector Outlook Study (APFSOS), completed in 1998. He noted that in 2007 we continue to debate: demand and trade in timber; NWFPs; environmental services; pressures on natural forests and opportunities for plantations; the need to improve management of forests, whether for timber, NWFPs, biodiversity conservation or watershed management; and the need to craft new and better institutions to make this possible. He closed by noting that the last APFSOS study concluded:

Natural forests are likely to continue to be converted to other land uses, although perhaps at a slower rate.... Promising opportunities are emerging for developing countries to capture investment funds for forestry for carbon sequestration...achieving sustainable financing to manage forests for non-marketed services is a major challenge.

So what has changed and is it a case that the more that change occurs, the more the situation remains the same? Byron in his summation of the 2007 conference went on to note that the forests in 2020 will be quite different to the forests of 1990 in terms of location, quality, composition and extent. He added that the institutions and organizations for the management and stewardship of forests are likely to be very different too. This he noted will all arise from drivers mostly outside of the broader forestry sector and highlighted the following:

- Economic forces: Greater economic integration through trade liberalization (services as well as goods), greater mobility of capital and labour, information and communications technology in a borderless world
- Demographics: Population growth, internal migration, urbanization, fewer older farmers, ageing of the population in some countries or a major increase in young urban unemployed in others
- Social forces: Nuclear rather than extended families, rising incomes, changed tastes and preferences
- Environmental changes: Especially anthropogenic global warming
- Legal and regulatory changes: Including the Multilateral Environmental Agreements and the World Trade Organization
- Technological changes: Not only within forestry and forest products, but also in agriculture and all the sectors they compete with for inputs (with agriculture for land) or in products (steel, concrete) or in how forest products are used

Byron concluded by noting, “We were just starting to come to grips with this level of multidimensional complex interconnectedness” and that “the future of the forests and the people in and around them, and of the broader forestry sector, will be greatly affected by what happens outside forests and the forestry sector. Foresters and forestry agencies, and NGOs focused on the social or environmental values of forests, cannot control these external forces, but may be able to influence them”.

We have noted in this paper the difficulties in establishing the exact monetary value of forests in the formal and informal sectors in addition to outlining the “fuzziness” of poverty, the demography of poverty and the limited contribution forests and forestry can make in lifting

the poor out of poverty. We have alluded to the fact that there are larger economic, social and political forces at work, external to the forestry sector, which are likely to ensure forests and forestry's continued relegation in national government league tables of importance²⁴ — in fact the mainstreaming of poverty-environment linkages in general (never mind forests and forestry) into national and sectoral development processes (PRSPS, NSDS etc.) has only been attempted in a few countries to date and with limited success. We have a long way to go before we, as a development community, can provide sufficient evidence of the links between environment, poverty reduction and pro-poor growth to sufficiently convince politicians, economists and planners that investments in environmental sustainability, including forests, are worthwhile.

We have emphasized that forests and forestry can generate income and in some cases, particularly in forest-rich countries, this would be of sufficient quality and quantity to potentially lift some of the poor into low-income status. The limited access by the poor and extreme poor to income-generating opportunities provided by forests and forestry has been flagged and reflects an overall trend of patterns of strong divergence — whilst patterns of income distribution are varied across countries a notable feature, common to both developed and developing countries, is that the inequality is on the rise. Perhaps then what we see in the forestry sector in terms of its real capacity to reduce poverty is a wider reflection of the “poverty agenda” in general and that the time has come to move on to a “prosperity and equity” agenda.

We have touched briefly on where pro-poor forestry initiatives have shown promise and the barriers that have been identified by various authors to that promise being fully realized. We suggest however that even under perfect conditions the role of forests and forestry with respect to poverty reduction will largely remain a mitigation function rather than a significant driver of long-term socio-economic advancement as compared to other sectors. This is not to say that forests and forestry should be abandoned from the agenda, and therefore in effect the large numbers of poor who are dependent on forests, but that there should be more realism amongst practitioners in the development sector and a clear change of focus in terms of more “people centred” approaches to development and wider awareness of opportunities and challenges beyond forests and forestry.

So what will it be? At this point, a disclaimer is required before we lay out the three potential if simplistic scenarios in more detail. Making our points and drawing a coherent and forward-looking picture of the Asia-Pacific region requires generalizing, with all its shortcomings. There will be many exceptions, some perceived, some real. Overall the real exceptions and deviations from the mean will not have a significant influence on developments at the regional level. They do at national levels, and this we acknowledge.

In Scenario One, “little people” will continue to have access to “little trees” only and forest conversion and degradation will continue across the Asia-Pacific region with few exceptions. In Scenario Two, genuine reforms will provide an enabling environment for more diverse rural livelihood options and greater access for “little people” to more “little trees” and even some of the more valuable resources. The outcome for forests remains unclear, but it is expected that overall negative impacts on natural forests will be mitigated and planted forest areas will increase in size and will be better managed. In Scenario Three, poverty reduction is becoming delinked from forests and forestry through processes of globalization, agrarian transformation, increased environmental awareness by growing urban populations and increased opportunities for managing forests for the environmental services they can provide.

²⁴ Arguably this relegation is changing as climate change takes priority on national and regional agendas, but will this necessarily have an impact on reducing poverty?

SCENARIO ONE or business as usual: In this we see the exploitation of forest as continuing unabated if not accelerating given the massive current and future demand for primary resources in the region, the poor legal and regulatory architecture in many forest-rich countries and the replacement of forests by more attractive, in financial terms, land uses. The replacement of forest lands for agriculture and in particular the likely drive of national and foreign direct investments into biofuels and plantations (e.g. oil-palm, rubber) is well-known. This may all be exacerbated by increasing energy prices further focusing internal regional demand on regionally sourced goods.

As a result, forests and forestry, except in exceptional cases, will become increasingly diminished and marginalized to such an extent that they will become a non-issue in terms of a significant role in poverty mitigation or poverty elimination. Some lip service will be paid to those who cannot leave the now degraded forest lands in terms of further project-based community forestry initiatives but any poverty reduction role this may play will continue to be ill-served by the remnants of traditional forest departments and local elites. Both key players will defend the status quo, i.e. even though more responsibilities and rights over forest resources might be transferred through various forms of decentralization processes to rural people and organizations, the income that might be generated will not significantly affect the conditions of the neediest. Furthermore, bureaucratizing CBFM and the use of NWFPs in combination with poor responsiveness by forestry agencies will increase forest management complexity to the detriment of forest-based income generation.

On the other hand, partnerships between forest industries might thrive and provide more opportunities for generating income in wood-deficit locations. However, as we discussed above, little in terms of poverty elimination can be expected from such forest outgrower arrangements.

SCENARIO TWO or reforms are realized: National governments realize the limited relative potential, but absolute importance for the forest-dependent poor and enact, implement and enforce pro-poor policies in order to enhance options for the poor to move away from forest-dependent livelihoods and/or genuinely and meaningfully involve them in forest management through cutting “red tape”, implementing participatory decision-making and institutionalizing fair benefit-sharing arrangements. In other words, the “frozen style of management of forests” will slowly thaw and the “hegemonic role” that many forestry administrators have continued to play until today will transform to a “facilitating role”, where forestry agencies are less of a “technical nature” and take on more of a service provider role, especially servicing the needs of the poor in attempts to achieve sustainable forest management. The forest industry also recognizes the importance of social responsibility for reducing conflicts and securing continuous access to raw material, with most of its demand being satisfied from plantation-grown wood. In fact, this latter trend is already playing out in numerous countries as the run for continuous raw material supplies is intensifying.

National governments also begin to realize the potential environmental services of forests and their potential for generating real income through payment for environmental services and as a sustainable source of fiscal revenue. In a parallel development, improved governance and political processes provide more room for the voice of the poor, and opportunities for the elite to capture most benefits from forests and forestry are somewhat, although not completely, curbed. CBFM in particular will no longer be viewed as a sole vehicle for watershed management and forest rehabilitation. Its importance in rural development and poverty reduction will be taken seriously, and access to more valuable forest resources will be secured for poor rural communities.

As a consequence poor people find it easier to generate forest-based income although not necessarily enough to eliminate poverty. There is an accelerated trend in the uptake of non-forest livelihood options as those located in and around forests continue to move to intensify

agricultural production and urban-based livelihoods. Experiences indicate that these are not exclusive but complementary processes.

National governments begin to invest in and mainstream environmental issues, including forests and forestry, into national and sectoral development processes. As a consequence there are fewer people based in and around forests and whilst the outcome for the forest estate remains questionable the stage has been set for conservation and sustainable use of what remains of the original estate.

SCENARIO THREE or other sectors win the day and poor people turn their backs on forests: Largely as a result of non-forestry sector developments there will be a continued and sustained drive towards middle-income status for most countries in the region, increasingly less divergence in this economic growth across the region and previous inequality in income distribution begins to plateau.

We have stressed earlier the importance of agrarian change in the Asia-Pacific region and the increased diversity in options and aspirations that people in general and young people in particular have, in comparison to one generation ago. Outmigration by the rural poor to urban areas and poorer countries to better-off countries in and beyond the region with labour shortages will continue. Labour shortages in the rural areas have also led to the establishment of more smallholder plantations in countries as diverse as Thailand, Lao PDR, Indonesia and Malaysia. Similar processes can be observed in the Solomon Islands and Vanuatu, although the driving force in these two countries is not labour shortages but secure landownership coupled with asset creation.

Growing wealth and awareness of the environmental service functions of forests is also increasingly taking precedence for growing urban populations. National governments respond with enabling policies and targeted policy instruments to ensure forests are at the centre of protection, restoration, rehabilitation, reforestation and protected areas initiatives. Eventually, economic and social development will have taken such a turn that forest-dependent poor are consigned to a footnote in the history books, the “little people” turn their backs on forests, and forests and forestry become a non-issue with respect to poverty reduction and more linked to a “prosperity and equity” agenda. The decline of the forest estate is arrested, although natural forest areas are likely to decrease further, and in some cases reverse due to the expansion of planted forests.

Backing the right horse in the run up to 2020

We recognize that the three scenarios outlined are simplistic and that the likely overall outcome by 2020 will be some mosaic of outcomes across this diverse and multifarious region. We have also not taken into account potential shocks to the system. Will for example the growing effects of climate change be of such a scale as to reverse the positive changes seen in the region in terms of economic growth and therefore to further push the environment from national political agendas? Will initiatives related to mitigation of climate change through for example Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD) prove clumsy tools that further exasperate inequity and increase poverty and forest degradation? Will energy prices continue their upward trend and trigger an avalanche of investments into biofuels? Will the new “economic order” that we see developing globally continue on an historic and ultimately unsustainable trajectory? Will we be able to fully encompass the development of developing countries with the continued and sustained development, albeit of a different quality, in developed countries?

We have painted a necessarily gloomy picture of the future role of forests and forestry in poverty reduction in the hope that we might provoke realism amongst those practitioners in the forestry sector. There is a need for the forestry community to ensure it participates in a

drive that ensures environmental conservation and in turn forests and forestry become value-based narratives once more rather than occupying the shadows of outwardly more powerful and immediate narratives. We need then to seek a better and more compelling understanding — through whatever mechanisms and pathways — of how forests and forestry can best influence socio-economic development and how their success depends on decisions taken relative to forests and forestry.

Do the three scenarios have equal likelihood of being realized? We have debated this at great length during the preparation of the overview. All three are realistic. If not, we would have rejected one or the other. Business as usual is just as likely as improvements in forest governance and the “re-invention” of forest agencies. The most difficult to envision is a retreat of elites and the creation of wider spaces for the truly needy people, which would bring about greater access and more benefits in and beyond the forestry sector. The last scenario is an overlay of the first two scenarios. The processes of agrarian transformation and globalization are by no means new, although they have entered the forestry literature only with a considerable delay. The speed of the two processes will determine by 2020 to what extent any changes in the forestry sector and to how and by whom forests are managed will make any significant difference at all to poor people. In this sense, the traditional forestry sector might miss the boat altogether and there might be little reason anymore to contemplate strengthening the currently weak link between forests and forestry and poverty reduction.

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8. ANNEXES

Annex 1. Eradicating extreme poverty in Asia and the Pacific (source: ADB <http://www.adb.org/poverty/mdgs/goal-1.asp>)

DMC	Target 1 Halve, between 1990 and 2015, the proportion of people whose income is less than US\$1/day				
	Proportion of population below the poverty line				
	US\$1 (PPP) per day		National indicators		
	1990	Latest year	1990	Latest year	
China	33	13 (2003)	9.4	3.1 (2003)	
Mongolia	28	19 (2003)	36.3	35.6 (1998)	
Cambodia	46	34 (2003)	39.0	34.7 (2004)	
Indonesia	21	7 (2003)	15.1	18.2 (2002)	
Lao PDR	53	29 (2003)	45.0	33.5 (2002)	
Malaysia	1	0 (2003)	16.5	7.5 (1999)	
Myanmar	...	...	...	26.6 (2001)	
Philippines	20	14 (2003)	33.0	30.0 (2003)	
Thailand	10	1 (2003)	18.0	9.8 (2002)	
Viet Nam	51	10 (2003)	50.9	19.5 (2004)	
Bangladesh	34	30 (2003)	51.6	49.8 (2000)	
Bhutan	...	...	...	25.3 (2000)	
India	42	31 (2003)	36.0	26.1 (1999)	
Maldives	...	1 (2004)	...	21.0 (2004)	
Nepal	44	25 (2004)	42.0	30.9 (2004)	
Pakistan	48	20 (2003)	28.6	32.6 (1999)	
Sri Lanka	4	1 (2003)	26.1	22.7 (2002)	
Cook Islands	...	...	...	12.0 (1998)	
Fiji Islands	...	26 (1996)	...	25.5 (1990)	
Kiribati	...	38 (1996)	...	50.0 (1996)	
Marshall Islands	...	20 (1999)	...	...
Micronesia, Fed. States of	...	5 (1998)	...	27.9 (1998)	
Palau	...	...	...	59.2 (2004)	
Papua New Guinea	...	25 (1996)	...	37.5 (1996)	
Samoa	...	6 (2002)	...	20.3 (2002)	
Timor-Leste	...	...	...	41.0 (2001)	
Tonga	...	4 (2001)	...	22.3 (2002)	
Tuvalu	...	17 (1994)	...	29.3 (1994)	
Vanuatu	...	26 (1998)	...	40.0 (1998)	

Annex 2. Changes in total and rural population (sources: UNFPA 2007 and FAO 1990)

Country	Pop 1997	Pop 2007	% rural 1997	% rural 2007	Rural pop 1997	Rural pop
East Asia						
China	1 243.7	1 331.4	68.2	58	848.2	772.2
Korea, Rep. of	22.8	22.7	38.2	38	8.7	8.6
Mongolia	2.6	2.7	38.1	43	1.0	1.2
Southeast Asia						
Brunei Darussalam	0.3	0.4	29.6	25.6	0.1	0.1
Cambodia	10.5	14.6	78.4	78.9	8.2	11.5
Indonesia	203.5	228.1	62.7	50	127.6	114.1
Lao PDR	5.2	6.2	78.2	79	4.1	4.9
Malaysia	21	26.2	45	31	9.5	8.1
Myanmar	46.8	51.1	73.4	68	34.4	34.7
Philippines	70.7	85.9	44.2	36	31.2	30.9
Singapore	3.4	4.4	0	0	0.0	0.0
Thailand	59.1	65.3	79.4	67	46.9	43.8
Viet Nam	76.5	86.4	80.4	73	61.5	63.1
South Asia						
Bangladesh	122	147.1	80.6	74	98.3	108.9
Bhutan	1.9	2.3	93.5	88	1.8	2.0
India	960	1 135.6	72.6	71	697.0	806.3
Maldives	0.3	0.4	72.5	69.5	0.2	0.3
Nepal	22.6	28.2	89.1	83	20.1	23.4
Pakistan	143.8	164.6	64.6	64	92.9	105.3
Sri Lanka	18.2	21.1	77.3	15	14.1	3.2
Pacific ⁹						
Cook Islands						
Fiji Islands	0.8	0.9	58.7	48.2	0.5	0.4
Kiribati						
Marshall Islands						
Micronesia, Fed. States of						
Palau						
Papua New Guinea	4.5	6.1	83.4	86	3.8	5.2
Solomon Islands	0.4	0.5	81.9	82.4	0.3	0.4
Tonga						
Vanuatu	0.2	0.2	80.9	75.7	0.2	0.2

Annex 3. Employment changes by sector (in percent, source: ADB 2007)

Country	1990			Latest year			
	Agriculture	Industry	Services	Agriculture	Industry	Services	Year
East Asia							
China	60	13	27	49	12	39	(2003)
Korea, Rep. of	18	28	55	8	18	74	(2006)
Mongolia	33	17	50	39	12	49	(2006)
Southeast Asia							
Brunei Darussalam	2	9	89	1	11	87	(2001)
Cambodia	81	2	17	60	10	30	(2006)
Indonesia	56	11	33	44	13	42	(2006)
Lao PDR	...	...	...	82	9	9	(2003)
Malaysia	26	20	54	15	21	65	(2006)
Myanmar	66	8	27	63	10	28	(1997)
Philippines	45	11	44	36	10	54	(2006)
Singapore ^f	0	26	74	0	17	83	(2006)
Thailand	63	10	27	41	15	45	(2006)
Viet Nam	72	9	19	52	13	35	(2006)
South Asia							
Bangladesh	64	15	21	52	10	38	(2003)
Bhutan	...	...	...	...	...	...
India	62	15	22	56	19	25	(2005)
Maldives	5	16	79	4	17	79	(2006)
Nepal	...	...	...	76	6	18	(1999)
Pakistan	51	13	36	43	14	47	(2005)
Sri Lanka	47	15	38	32	19	49	(2006)
Pacific							
Cook Islands	6	8	88	7	6	87	(2001)
Fiji Islands	3	33	64	1	34	65	(1999)
Kiribati	1	...	19	1	...	22	(2000)
Marshall Islands	22	9	69	20	8	72	(2000)
Micronesia, Fed. States of	48	6	46	52	...	...	(2000)
Palau	8	2	90	8	3	90	(2005)
Papua New Guinea	...	...	...	72	4	23	(2000)
Solomon Islands	29	9	62	26	12	62	(1996)
Tonga	38	15	47	34	23	43	(1996)
Vanuatu	75	1	24	...	...	...

Annex 4. Estimates of percentage distribution of value added and selected components (Source: United Nations Statistics Division <http://unstats.un.org/unsd/snaama/SelectionBasicFast.asp>)

Country or area	Period	Agriculture, hunting, forestry, fishing	Mining, manufacturing, utilities	Manufacturing	Construction	Wholesale, retail trade, restaurants and hotels	Transport, storage and communication	Other activities
		Percentage distribution (share of value added)						
Bangladesh	1996	26	18	16	7	13	9	27
	2006	20	19	17	8	15	11	27
Bhutan	1996	33	25	12	10	10	8	14
	2006	22	24	8	16	7	11	21
Cambodia	1996	47	11	11	4	16	6	16
	2006	30	22	21	7	15	7	19
China	1996	20	41	41	6	9	6	18
	2006	13	41	41	5	9	7	25
Fiji	1996	19	17	13	5	14	13	32
	2006	14	17	14	4	18	16	30
India	1996	28	22	17	5	14	7	24
	2006	20	21	16	7	16	8	29
Indonesia	1996	14	35	27	7	16	6	23
	2006	14	36	27	6	15	6	23
Lao PDR	1996	53	17	16	4	10	5	10
	2006	47	25	20	3	12	6	7
Malaysia	1996	11	36	27	6	14	6	26
	2006	9	47	29	3	12	6	23
Mongolia	1996	46	19	5	3	12	8	12
	2006	21	24	6	3	24	13	15
Myanmar	1996	60	8	7	2	23	3	3
	2006	53	10	9	4	23	8	3
Nepal	1996	40	11	9	11	12	7	19
	2006	38	10	7	10	10	10	21
Pakistan	1996	26	21	15	3	18	10	22
	2006	22	24	18	2	18	13	21
Papua New Guinea	1996	33	30	9	6	9	5	17
	2006	40	29	7	8	7	3	14
Philippines	1996	21	26	23	6	15	5	27
	2006	14	28	23	4	16	8	30
Solomon	1996	45	7	6	3	9	6	31
	2006	44	7	6	3	9	6	31
Sri Lanka	1996	20	23	19	7	20	11	19
	2006	15	24	20	7	19	13	22
Thailand	1996	11	32	28	8	20	8	21
	2006	11	42	35	3	19	7	18
Vanuatu	1996	17	6	4	4	35	12	27
	2006	14	5	3	3	36	12	29
Viet Nam	1996	28	23	15	7	19	4	19
	2006	22	34	20	6	17	4	17