COMMENTARY ON FOREST POLICY IN THE ASIA-PACIFIC REGION

(A review for Indonesia, Malaysia, New Zealand, Papua New Guinea, Philippines, Thailand and Western Samoa)

by

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The Asia-Pacific Forestry Sector Outlook Study is being undertaken under the auspices of the Asia-Pacific Forestry Commission.

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In the process of preparation for publication, this document has been restructured, with the title changed, the conclusions integrated into the early section and a section introduced on limitations of undertaking the work as a desk study without country visits.

It needs stressing that for this, as for other working papers, the purpose is partly to promote professional dialogue. The views carried in these papers are not necessarily endorsed by the Asia-Pacific Forestry Commission or by FAO.
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Commentary on Forest Policy in the Asia-Pacific Region
At its sixteenth session held in Yangon, Myanmar, in January 1996, the Asia-Pacific Forestry Commission, which has membership open to all governments in the Asia-Pacific region, decided to carry out an outlook study for forestry with horizon year 2010. The study is being coordinated by FAO through its regional office in Bangkok and its Headquarters in Rome, but is being implemented in close partnership with governments, many of which have nominated national focal points.

The scope of the study is to look at the main external and sectoral developments in policies, programmes and institutions that will affect the forestry sector and to assess from this the likely direction of its evolution and to present its likely situation in 2010. The study involves assessment of current status but also of trends from the past and the main forces which are shaping those trends and then builds on this to explore future prospects. Working papers have been contributed or commissioned on a wide range of topics. They fall under the following categories: country profiles, selected in-depth country or sub-regional studies and thematic studies. Working papers are prepared by individual authors or groups of authors on their own professional responsibility; therefore, the opinions expressed in them do not necessarily reflect the views of their employers, the governments of the Asia-Pacific Forestry Commission or of the Food and Agriculture Organization. In preparing the substantive report to be presented at the next session of the Asia-Pacific Forestry Commission early in 1998, material from these working papers will be an important element but will be blended and interpreted alongside a lot of other material.

Working papers are being produced and issued as they arrive. Some effort at uniformity of presentation is being attempted but the contents are only minimally edited for style or clarity. FAO welcomes from readers any information which they feel would be useful to the study on the subject of any of the working papers or on any other subject that has importance for the Asia-Pacific forestry sector. Such material can be mailed to the contacts given below from whom further copies of these working papers, as well as more information on the Asia-Pacific Forestry Sector Study, can be obtained:

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“For contrary to what many outsiders believe, forestry is not in its essence, about trees. It is about people. It is only about trees in so far as they can serve the needs of people.”

Jack Westoby, 1987

“Forests are, however, about much more than simply trees and people. They are complex, dynamic ecosystems which must endure - not only for the trees and the people, but for the forests themselves, and the planet they inhabit.”

Don Hammond, 1997
PART I - MAIN REPORT
EXECUTIVE SUMMARY

This thematic study provides a review and description of the trends in development of forest related legislation in a selected range of Asia-Pacific countries. A topic of this magnitude by its nature requires some subjective judgements. Interestingly however, the most pressing issues are generally of a recurring theme and are supported by the literature and the experience of those who have contributed.

The major issues identified are:

- The most pressing problem faced by individual countries, the region as a whole, and indeed, the world, can be related back to the issue of human demand for resources which is driven in part by population pressure. The forest is a major contributor to those resources. Despite the enormous contribution made by forests to human society, forests themselves are often regarded as an impediment to human development. Given that the human population will continue to expand for several more decades at least, there exists a real challenge for governments to seek innovative and equitable methods of providing the resources those people need, while concurrently ensuring that forests are managed in a sustainable manner.

- The central need is for a policy environment to be created whereby forests retain both their essential natural functions and their capacity to supply goods and services required by people. The short term imperative is the need to stabilise the existing natural forest both in extent and quality, while in the long run there is a need to develop alternative sources of supply, including sustainably managed natural forest and plantations.

- There is urgent need for an holistic approach to the development of forest policy in the region. The piece-meal or laissez-faire approach taken to date has generally provided short term expediencies which are paid for in the loss of forest resources, and have created the far larger issues with which governments and affected parties are now having to grapple. The holistic approach envisaged must deal not only with the issues directly concerning the forest, but also with such external issues as tax legislation; economic and market factors; population growth and migration; and energy policies. This holistic approach is arguably the crux of the issues facing natural forests in the region, and is the key to their long term viability.

Reform and development of an holistic approach to sustainable forest management is only likely to be effective when integrated into a wider total economic reform of a country’s economy. As long as distortions are present within an economic structure, resources will either flow towards or away from a given sector, contingent on the nature of the distortion.

Distortions or market failures often stem from undefined or ill-defined property rights, both within a particular time period, and between the present and the future. The divergence between the prices of forest-related goods recognised in the market and a more complete assessment of social value means that private decisions with respect to the use of forests are not always the best decisions for society, particularly the long term interests of society.
• Provision within forest related policy is required for the supply of fuelwood to rural and urban markets. This often overlooked demand is in many cases as large or larger than the demand for industrial wood, yet often goes unrecognised in policy development. In addition, this demand is commonly concentrated in areas close to large populations, thus placing immense pressure on the ability of the forest to provide this resource in a sustainable manner.

• Land and forest resource tenure is a pressing issue which requires addressing in many countries in the region. In the development of forest policy, recognition by governments of the legitimacy of customary rights to the forest and its resources is required, and those rights require the full protection of the law. Without security of tenure (and capacity to exercise it), there is no incentive for resource users to manage the resources they control in a sustainable manner. Several of the countries studied had in fact removed the rights of rural people to forest resources in the belief that central government control was somehow better. Additionally, that transfer of rights has also resulted in a significant transfer of wealth, often to the disadvantage of rural people.

• Lack of reliable and up to date forest resource information hampers efforts to develop scientific and holistically based policy in most countries. Thus a pressing need is for increased research into all aspects of the forest resource. This includes inventory data, research into forest management, ecological studies, improved methods of utilising forest produce, quantifying the non-wood benefits provided by the forest, and the need for conservation and protection of forest resources. From this improved knowledge must flow a training programme in both technical matters related to the forest, and in raising the general level of awareness among the people of the value of the forest resource.

There is considerable opportunity here for other countries, both from within and outside of the region, to contribute to this work, both financially and by provision of assistance.

• Resolution of conflicting demands on the forest resource. In many situations, the local, national and international demands on forests conflict. Local people see forests providing resources for a daily living, and land for agriculture. At a national level, forests are seen as sources of foreign exchange and employment, while the international perspective often includes protection of biodiversity and the role of forests in the global climate. In striving for better management of forest resources, reconciliation of these diverse interests must occur. This requires both intra- and inter- country work, and a result that does not prejudice local living standards, while maintaining the forests’ quality and quantity is held as the objective.

The nature of the various “affected parties” must be understood for any effective solution to be developed. In particular, the role of women - often the group which must obtain and manage the forest resources (as fuelwood and food) - is often overlooked. If this group is omitted from any process to find effective solutions, much opportunity to move towards sustainable forest management is lost.

The following conditions are likely to be required for any solution to have a chance to succeed:
strong political commitment to sustainable forest management;
* genuine involvement of affected parties, including (or especially) rural people;
* development of the necessary research and technology transfer mechanisms;
* adoption of a multi-sectorial approach to policy formulation;
* rationalisation of land use, forest use, and land tenure policies to promote efficiency and sustainability;
* mechanisms to encourage a slowing of population growth;
* involvement and assistance of the international community.

• Few countries recognise the forest as having an intrinsic value as opposed to the value of goods and services it can provide. This is a difficult concept on which to place a value, but as forest resources are reduced in both extent and quality, this becomes increasingly important. Past policies have been almost exclusively directed to the exploitation of the productive forest resources - usually wood and the land on which the forest stands.

The value of protective services is commonly ignored, even though many such protective services may prove to be manifestly economic goods in the future. An intact forest is capable of providing a range of goods and services in perpetuity, something a degraded forest cannot do.

• Most countries need to address the market distortions they have created which have accelerated the loss of their forest resources. Matters such as tax incentives; policies which encourage high-grading of forests; poor or wasteful utilisation of the timber produced; and policies which only recognise the wood benefits produced by the forest all contribute to forest loss. These require addressing as part of the holistic approach already noted. There is an urgent need for the values of the protective function of the forest and the non-wood values to be included in the equation of “forest value” and policy decisions.

• Logging is not the sole or even major cause of total deforestation. Where logging does contribute to the loss of forest resources, it is by way of opening up areas that were previously inaccessible, allowing settlers (usually agriculturally focused people) to enter and remove the remaining forest, and convert the land to other uses. The second major impact of logging is to “degrade” the remaining forest, which, while still technically classified as forest, is far less capable of providing a full range of goods and services - both wood and non-wood. Thus again, the need for an holistic approach is highlighted - a simple focus on logging addresses only part of the issue.

• In completing this study it is noted that while many themes are recurring, there also exist some significant differences between countries. The most graphic of these are Western Samoa and New Zealand. Western Samoa is different due to scale - of population, land and forest resource. The development of a long term sustainable forest industry will be a minor part of the overall development of the country, and it will continue to rely on assistance from other countries. New Zealand, on the other hand, is different due to its almost complete reliance on a planted forest resource for its timber needs, and almost total protection of its remaining natural forest estate. In addition, it is a country with an
increasing sustainable harvest of wood rather than the more common scenario of declining sustainable harvests.

• With many of the countries studied in this document, the human resources and capacity to manage the sector in place and any inadequacies in magnitude and quality are not major as in many less well endowed countries in the region. Nevertheless, there has been concern that the institutions and structures in place to develop and implement policy and to manage the forest resource do not always have adequate safeguards to ensure the integrity of officials and the system. The result of this can be graft and corruption and loss of faith in the system. The long term result can be severe environmental and economic harm to the region’s forests and people. It is imperative that governments move quickly to remove any opportunity for the system to be compromised and to ensure that their own systems are beyond reproach.

• In recent years, forest certification has become a major issue. While laudable in principle, the reality is generally somewhat different. The practicalities of implementing full forest and forest products certification pose substantial obstacles. The magnitude of the trade in forest products alone is daunting. While small scale certified operations will continue to be established, it will take considerably longer for certified products to become the norm.

To the producer, there are costs involved in attaining certified status. If the market is unwilling or unable to bear these extra costs, there is a significant disincentive for producers to seek certification. This issue is compounded by the volume of tropical wood finding its way into low grade end uses where price is usually the major determinant. In these situations, the consumer is not willing to pay the premium needed to justify the processors’ investment in the certification process.

• In the past, the value placed on the goods and services provided from the forest has generally been low. For example, land with a forest cover is considered to have a lower value than land with the forest removed. The value of tropical timber has also been artificially low. The result of this under-pricing is to provide false signals to the market about the abundance of tropical timber, leading to wastage of the resource in harvesting, processing and end use. The problem is further compounded when the value of non-wood forest products is omitted from the calculations.

• Few countries have all the answers to all the issues faced, thus there exists a real need for international cooperation. Loss of forests resources transcends national boundaries and affects the entire planet. Given this, the roles of various agencies become vitally important in order to minimise any potential downside and to maximise the upside. Governments, NGOs, intergovernmental panels and the like must work more closely in order to resolve the pressing issues affecting the forests. In many cases, a collaborative approach will provide a solution which is more acceptable to all parties, and more robust than a solution that is developed unilaterally. Societies around the world are beginning to face up to the reality that as a species, man requires forest resources - both the wood and non-wood products a sustainable managed forest can provide. As the guardians of those resources, our performance has, to date, been abysmal. It is with a great deal of urgency that we must turn that record around and ensure that we have sustainably managed forests for the generations that are to follow. Only a long-term
global commitment to conservation and sustainable development can reverse the tide of uncontrolled deforestation. A sound policy framework is central to this commitment.
BACKGROUND AND INTRODUCTION

Origins and Scope

At the 16th session of the Asia-Pacific Forestry Commission, agreement was reached on the preparation of an “Outlook Study” for the region. The overall function of the Study is to assess the status, trends, and outlook for the forestry sector to 2010. This involves a series of related studies which consider the relevant components impacting on the region’s forests, and the need for future work.

This paper looks at the situation which exists in a representative group of Asia-Pacific countries with regard to their forest resources. From this basis, the future is examined in order to identify the need for changed legislative frameworks within those countries, if they are to maximise the benefits from their forest resources.

In order to achieve this, first we must look at each country to determine the forces that have shaped their present forest industry. We must then examine the forces at work today and extrapolate these forward to the future. Concurrent with this we must consider what is desired for the future, and identify the gaps between the desired future and the likely future if no changes are made. This should then allow us to identify what changes are required to reach the desired state, and how those changes may be influenced.

Thesis

In a study such as this there are a number of forces and behaviours at work that we need to consider. These include:

- the role of governments in developing legislation;
- the history of development and settlement within a given country;
- the political and economic attitude of the country both past and future;
- economic and social parameters; and
- the key nations that influence the country.

These factors must be seen in the context of human development and demand within each country. The issues faced by most countries today are a direct reflection of competing demands for resources (of which the forest is a major resource) resulting from significant and ongoing increases in population.
**Limits of the study**

To review such important factors and forces poses challenges even where time and resources are abundant and a study is focused on only one country. In this case, attention is spread over many countries and only information readily accessible in a desk study has been used. The constraints which this imposes need to be recognized in reading this report. Given appreciation of these difficulties, the author has refrained from passing judgement on situations studied or making definitive recommendations for action to address perceived weaknesses. Instead, possible options for response are set out which readers are at liberty to take on board and to reflect upon regarding possible relevance or applicability to their own countries. The ideas so proffered are intended to create a basis for dialogue on the issues facing the countries reviewed.

**Context and Contrasts**

The review results are presented under individual country profiles. Before exploring each country in this profile, it is useful to consider why each was chosen from the large number of countries which make up the Asia-Pacific region, and to compare and contrast them both among themselves, and with those not studied.

The Asia-Pacific region as covered in this outlook study extends over a large area of the globe from about latitude 50° north to 50° south, and from Pakistan in the west to the island nations of the South Pacific in the east. The countries range from China, with about 20% of the world’s population, to island states with less than 100,000 people. Geography ranges from low altitude, flat lands, to the mountains of Nepal, and climate from equatorial tropics to the almost Arctic climes of China and Mongolia.

The inter-relationship between human development and forests has shown remarkably similar patterns throughout the world, and through time. This can be generalised to the following phases:

- Man the hunter/gatherer, living within the forest - small populations, having limited long term impact on the forest.
- Development of agriculture, requiring clearance of forests to make land available for other crops. As those crops become permanent (as opposed to shifting cultivars), or as the fallow periods diminish, the forest is effectively removed forever, or at least severely degraded.
- Escalating demand for both industrial wood and fuel wood, as populations rise and they become more urbanised, and demand or desire improved standards of living.
- Severe depletion (in both quantity and quality) of natural forests, resulting in the need to replace supplies with either imports (commonly sourced from another country’s natural forests), or plantations, or a combination of both.
- Recognition of the need for sustainable forest management.

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1 This section has been introduced by the editor.
While the countries of the Asia-Pacific region are in various stages of this progression, there is always interaction, and there are no clear parameters by which to measure the progress. The types of parameters commonly used to measure this type of progression include GDP; hectares of forest per capita; forest product self sufficiency; etc.

Placing each country on a continuum as measured by each of these parameters gives a very confused picture indeed. Further, these types of parameters largely ignore the fuel wood and non-wood forest products which are so important to many people.

This study, then, attempts to profile a group of countries which collectively display the range of major phases described above and applicable to the selected countries as follows:

- **Phase One** - the “hunter/gatherer” situation - is present in parts of Papua New Guinea, Malaysia, and other Asia-Pacific countries. However, the world’s rapid population growth and incursion into the natural forests for timber and land is resulting in the rapid demise of this phase.

- **Phase Two** - development of agricultural land from forest - is currently the major cause of deforestation in most countries in the region. Indonesia and Thailand are examples. Ironically, the majority of countries where this is not currently the cause of significant deforestation have already passed through this phase, and have lost substantial areas of natural forest, for example, New Zealand.

- **Phase Three** - the increasing urbanisation and demand for industrialised wood or resultant products - is occurring throughout the region, but in particular the tiger economies of Asia.

- **Phase Four** - severe depletion can be seen in many countries including Thailand, Western Samoa, and the Philippines. There has been depletion of the both the area of forests and the quality of the remaining forest. The resultant dependence on large scale plantations is seen especially in New Zealand, Indonesia, the Philippines and on imports in Thailand.

Recognition of the need for sustainable forest management is occurring throughout the world. Many countries of the Asia-Pacific region are recognising the need for sustainable forest management, but are only beginning to grapple with the meaning and implementation of it.

New Zealand provides one model - that of a dichotomous system of forest management. The two components of the system are protection of the majority of the remaining natural forest, and fibre production from plantations or tree farms of introduced species. As a result, New Zealand has a significant wood surplus, and the opportunity to practice sustainable forest management in its broadest sense.

Of the countries studied, Papua New Guinea is arguably at the other end of the spectrum. There remain significant natural forest resources which, given the right policy and enforcement framework, could be sustainably managed to provide a full range of forest products. Further, the large area of forest and relatively small population means less pressure for forest conversion to agriculture.
The other countries tend to fit between these two extremes - with moves in thinking towards sustainable forest management, development of plantations to provide alternative fibre sources, and increasing recognition of non-wood forest products.

**SUMMARY OF FINDINGS**

In working through a study such as this, inevitably a number of themes begin to emerge. Due to the inextricably linked nature of the issues, it is difficult if not impossible, and certainly unwise to attempt to put these issues in any sort of order of importance, although some do shine out ahead of others. There is however one theme that does pervade all and is arguably the crux of the matter, and that is the need for policy to be developed in an holistic manner, not in a piece-meal way as has been fashionable in the past.

The piece-meal approach inevitably introduces distortions which equally inevitably result in market failures. The result of these market failures has manifest itself throughout the region in the significant loss of forest resources, and the disenfranchisement of rural people. The problems faced by governments are thus multiplied in both magnitude and complexity.

The utilisation and protection of forests throughout the world, but particularly in the developing countries with tropical forest, is influenced by a variety of government policies. These policies are both those aimed directly at the forest resource and others aimed at the economy and society in general, such as those affecting tax or migration matters. Unfortunately these different areas of policy reform are kept separate and the implications of one on the other are not often considered.

In the tropical region (which covers the countries in this study with the exception of New Zealand), there are a number of commonalities influencing the management of forests and the severity of forest destruction in the past, and impacting on the ability of governments to control these concerns in the future. These are briefly discussed below.

**Accelerating Rates of Deforestation With Logging as a Secondary or Tertiary Cause**

World-wide logging is thought to account for only 21% of total deforestation. There is however the associated problem of commercial logging opening up what were previously inaccessible areas, allowing settlers to move in, remove the residual forest and commence changing the land use to some other activity, usually agriculture. Government policies and incentives to log forests have in many cases been the catalyst to the areas being logged in the first instance. In addition to the areas which are completely deforested, there are very large areas of forest that are degraded yet remain classified as forest, even though their productive capability has been severely compromised.
Heavy Emphasis on Policies Geared to Extraction of Benefits from the Productive, Rather than the Protective, Services Provided by the Forest

Past incentives have almost exclusively been directed to the exploitation of the productive resources of the forest. The value of protective services has been ignored although many such services may prove to be manifestly economic goods in the future. More significant still is the emphasis there has been on two economic goods only: the timber stands in the forest and the (generally poor) land on which those timber stands exist. The major omission in such an approach is the failure to recognise the ability of an intact forest system to supply a perpetual stream of income from commercial and non-commercial wood and non-wood forest products. These include food, fuelwood, and medical supplies, as well as fresh water, wildlife habitat and suchlike.

Declining Foreign Participation in Timber Extraction and Processing

Recent years have seen a significant reduction in large foreign or multinational involvement in natural forest harvesting and exporting or processing. There are some exceptions, such as Papua New Guinea, but the trend has been for governments to regain some control over these activities. In some cases this has resulted from a combination of factors such as declining forest resources available for harvest meaning lower profits and government log export bans. Simply demanding greater onshore processing is the type of market failure that has been induced in the past. For example, in Indonesia many so-called processing plants were built to meet government requirements, but the benefit to the local economy or the forest was dubious at best. What is required is an economic environment that rewards those who process onshore and those who work towards sustainable forest management.

Accumulation of Property Rights to the Forest in the Hands of Central Governments

The underlying system of property rights has considerable bearing on the ability of governments to reform forest policies. In the Philippines, Indonesia, and Malaysia for example these rights have been constitutionally bestowed on central or state governments to the detriment of the rural people who traditionally used the forest. In other countries such as Papua New Guinea, the land and forests are held in various forms of customary ownership.

A Shift in Concessions Policies Away from Special Contracts and Toward Greater Reliance on General Law

In the early part of this century, special contracts were commonly used to administer logging and mining activities. These contracts allowed governments to include a wide range of regulations including minimum and maximum harvest levels, use of local labour, safety and concession length. By 1990 the overwhelming majority of timber contracts were subject to the provisions of general law.

Severe Under-pricing of Tropical Timber by the Owners Leading to Serious Wastage of the Resource

Most countries with tropical timber have in the past undervalued the resource. This situation is exacerbated if the value of non-wood forest products is omitted from the calculations. Under-pricing by way of outdated and defective systems has provided false signals regarding
the abundance of tropical timber, leading to severe wastage of the resource in harvesting, processing and the end use of the timber.

Attempts to Resolve Market Failures by Government Policy

Inherent market failures are usually compounded by government policy distortions. Thus rather than correcting a market failure, government intervention has often aggravated the problem. Few incentives exist for forest owners to conserve their forests, but there are many cases where forest owners are penalised for not developing their forest for either wood production or conversion to other uses. In some extreme examples people are able to gain ownership of the land only after they have removed the forest.

The Development and Acceptance of Forest Certification

Considerable discussion in recent times has revolved around the concept of forest and forest product certification. While on the face of it this seems to be a laudable concept, the practicalities remain difficult. The magnitude of the trade in forest products alone is daunting, before even contemplating the lack of infrastructure in many places, and the inability of some government agencies to be accountable and auditable. There are some very small scale certified operations occurring now, and undoubtedly these will increase in the future. In general these are run as model operations by NGOs to promote the concept, and fail to address some of the magnitude issues that must be resolved. However, in order to progress this matter there must be a willingness to learn and to accept new ideas. Again this requires a cooperative approach from all affected parties.

The absence of sufficient financial rewards for implementing forest certification (commensurate with costs) is a major issue. This will continue to be the case as long as the majority of products are not certified. While many end use consumers are concerned about the environment, often the connection is not made between the packaging in which their product arrived, and a tropical forest somewhere. The connection is only made when the product itself is sourced from a natural tropical forest, such as hardwood decking.

Unfortunately, to date much of the wood sourced unsustainably from tropical forests finds its way into “low grade” end uses, such as packaging.

To be successful, certification has to have a higher profile through all avenues, including NGOs and governments. Until that occurs, the fundamental problem of certification - higher cost without commensurate reward - will continue.

MAJOR ISSUES AND THEMES TOWARDS 2010

Universally the problems faced by the individual countries and the region as a whole can be related back to the issue of population pressure and human demand for resources, of which the forest is a major contributor. Ironically the forest is also seen as a major impediment to the provision of the resources needed by some communities. However simply knowing that the cause of the problem is population does little to help resolve the issues currently faced.
The issue of increasing population manifests itself in the form of increased removal of forest to convert the land to other uses (usually agriculture), and the ongoing degradation of the quality of the remaining forest. Technology can be both the saviour and the villain in this case. Increasing technology provides better data on the extent of the problem through, for example, satellite imagery, and new ways of overcoming problems, while at the same time enabling the harvest of forests that were previously either physically or economically unavailable. There will be increasing reliance on technology to provide solutions to the issues faced, but this is only part of the answer.

The other part of the answer will come from a commitment to actually resolve the problems faced from all parts of the societies affected. The parties affected are both within the individual country under consideration and the wider global community. The global community’s role is as a market for much of the produce emanating from the forests of the countries under consideration, and as a source of capital (both financial and human) to assist with the solutions. There seems little likelihood of any individual country being able to resolve all the issues it faces without a commitment from other members of the global community. There is thus an imperative that nations work towards solutions in a collaborative manner.

Research

Research (or rather the lack of it) is a key matter to be addressed. It is difficult to even know where to begin to find solutions if the full extent of the issue is not understood. The need for research (and transfer of the findings) can be subdivided into three main components.

Firstly there is a pressing need to determine more precisely the extent and quality of the remaining forest resource. An essential requirement of this part of the work is to consider all aspects of the forest resource and the multiplicity of goods and services the forest provides. In the past most work aimed at quantifying forest resources has concentrated on the timber volumes and values. As we are beginning to recognise, this preoccupation with timber volumes grossly undervalues the forest and thus introduces market signals that encourage wasteful practices and further loss of forest. Removal of those distortions is a priority for government policy formulation as discussed elsewhere.

Accurate determination the remaining forest resource will require a combination of traditional forest inventory, ecological base line work, sociological type work (as rural people are a significant part of the equation), and the use of modern technology such as satellite imagery and computer analysis.

In addition, there is an urgent need to develop greater understanding of how best to manage the resources being used. Improved management techniques are only part of the answer. This improved knowledge and information must be made available to those who need it in a format that is appropriate to them. For example publishing new information in a respected scientific journal is unlikely to have much impact on a tribesman from Kalimantan or Sarawak. Innovative methods of transferring knowledge to all affected parties must be developed, while at the same time ensuring all stakeholders receive a share of the benefits created. Distortions in the receipt of benefits has in many cases been the cause of many of the issues we are now seeking to resolve.
The most obvious example of this distortion of benefit shares in the past has been the transfer of the wealth created from harvesting the forest. The rural people who traditionally owned the resource have in general received very little or often none of the wealth created. The timber companies and the governments have been the main recipients. Thus there is scepticism when new ideas are introduced. That scepticism must be overcome in order to implement meaningful change in the way forests are managed.

**Collaborative Effort**

In general, local, national and international interests in relation to forests are in conflict. For example, to local people, the forests meet basic needs including providing land for agriculture. At the national level, the forests are important sources of foreign exchange, employment, and government revenue. At the international or global level, the forests represent a source of supply of forest products as well as for preservation of biodiversity and their role in global climate. In our drive towards better management of the forest resources we must reconcile these diverse interests. Effective reconciliation will allow the transition from current destructive practice to conservation and sustainable forest management.

At the local level there is a need for education and technology transfer, removal of disincentives to sustainable management, security of tenure, and technical assistance to bring about the necessary changes. Of particular importance is a need to develop effective fuelwood policy and technology.

Participation of local people in any decision making process as affected parties is essential in order for them to feel they have “ownership” of the issue. The method of gaining that participation is itself a challenge to policy makers. Some of the answers may be found through sociological research and the development of appropriate communication strategies. The balance of the answers are most likely to be found through development of necessary infrastructure and incentives, and removal of disincentives (especially those related to tenure rights).

A key group that is often overlooked in many attempts at gaining local participation is women. This group makes up half the population, and are often the individuals who obtain and manage the resources from the forest, and thus must be included in policy decisions. If they are omitted from the decision making process much opportunity to move towards sustainable forest management is lost.

At the national level, countries need to put in place the following conditions:

- strong political commitment to sustainable forest management backed by public support;
- commitment to genuine involvement of affected parties (especially rural people) in any policy formation and decision making processes;
- development of the necessary research and technology transfer requirements in all matters pertaining to the forests, their sustainable use and their protection;
- adoption of a multi-sectoral approach to policy formulation and to resource management to replace the ad-hoc approach commonly taken to date;
development of rational land and forest use policies that also provide for the intensification of existing agriculture, in order to reduce the demand for additional land to be converted from forest;

- land tenure policies that recognise the rights of rural people and give them the full protection of the law; and

- mechanisms that encourage a slowing of the overall population growth. This is often achieved by increasing the wealth of the existing population making larger families less desirable.

While these themes continue to be discussed, unless there exists a clear commitment to them at a national level, progress towards sustainable forest management will be slow at best.

At the global level, solutions to the existing problems are less clear-cut. Often the inter-regional effects of poor forest management are difficult to measure, and the costs associated with them are even more difficult to assess and to allocate.

There is, however, the fact that preserving forests intact with a full range of attributes is in the international interest. Thus involvement of the full international community becomes essential. In particular, the international community reaps the benefit of the maintenance of intact forests and thus must expect to bear the costs associated with that protection. The cost is in some cases an opportunity cost forgone by the country which has the forest when that forest is protected rather than utilised. While there are counter arguments to this, the ability to pay must also be recognised. Often the countries where the need for forest protection is most pressing have the least ability to pay. They therefore look to other countries for assistance.

**Land and Forest Tenure**

The issue of land tenure is a recurrent theme. Security of tenure is a prerequisite in order for rural people to manage their forest resources in a sustainable manner. This security must also have the force of law behind it in order to protect those with few resources at their disposal from those with plenty of resources who seek still more. Those seeking more may do so for a number of reasons, but the most common is economic gain. Government policy and the law that emanates from it must address this matter with some urgency. In addressing this issue, governments must recognise the legitimacy of customary land rights and must give them the full protection of law. Without such recognition, any solution will at best be a temporary reprieve, the problem later returning in a significantly magnified state.

Integral with the issue of tenure is recognition of the multiplicity of benefits that accrue from the forest. To date most governments have only recognised the commercial benefits which are usually measured in terms of commercial timber volumes. Apart from the timber benefits a forest resource offers, there are a range of other wood and non-wood resources produced, and there are the on and off site protection benefits that accrue. These include protection from soil erosion, protection of water supplies, and protection of biodiversity. In addition governments must recognise that forest resources have an intrinsic or existence value. Some commercial benefit may be derived from this, for example through tourism, but in general the mere existence of the forest should be recognised as having value.
The value placed on the forest in many cases may come from both inside and outside of the country. As a result there is a need for governments in developing policy to consider the needs of both their own people and the international community as some of the affected parties who need to be heard. The contra to this is that those same people may well come from the more wealthy nations and thus have a responsibility to assist in the protection and sustainable management of those forest resources, through financial and technical means.

**Fuelwood**

The use of fuelwood is often overlooked. This is a major oversight, as in many countries the volume of fuelwood consumed exceeds the volume of commercially harvested timber. Indeed in most countries governments need to consider the issue of fuelwood supply, demand and efficient use with a large degree of urgency. This is the case for many areas as the harvest of fuelwood is threatening the very existence of the forest in some places.

The extent of the fuelwood problem is one that is difficult to measure as often there is not a recognisable market structure. It is however a fundamental need of the people and thus the problem will not go away and will rapidly worsen if not addressed. The two main issues are the supply of fuelwood and its use. In order to resolve the problem, governments must address the provision of adequate supplies, and secondly, to seek more efficient use of the resource in order to reduce the demand increases that come from population increases.

Provision of adequate supplies requires development of appropriate policy, development of appropriate market mechanisms to ensure the resource is valued correctly, and the development of the necessary technology. Alternatives to simply relying on the natural forest resource are required in many areas. The provision of fast growing plantations, purpose planted for fuelwood, offer an alternative in some regions. There is often a need for education associated with those plantations if they are to be successful. There is also an opportunity to seek assistance from the international community in developing these plantations, drawing on the skills and expertise developed elsewhere in the world.

The second issue is the efficient use of the fuelwood resource. Systems to use the resource through more efficient cookers and cooking techniques have been developed. The fact that they have not been universally adopted suggests a technology transfer challenge or possible failure. Whatever the reason, there is a pressing need in some areas to reduce the demand for fuelwood without adversely impacting on the standard of living of the affected people. There has been evidence in some areas that these efficient cookers have some additional benefits in terms of improved health amongst rural people as a result of less exposure to smoke.


Law and Order

For many countries there are issues surrounding the integrity of government and their officials which can rapidly undermine any benefits that improved policy, legislation and management may provide. In order to progress the cause of sustainable forest management, any doubt about the integrity of the government and its agencies must be removed from the minds of the people.

There must be a political commitment to the concept of sustainable forest management. This requires the people and governments to work together and trust each other. Any hint of corruption or graft will undermine the public’s commitment to the concept to the detriment of the country and the forests.

Additionally, governments must demonstrate a commitment to the protection of property rights, especially those belonging to rural people. Security of property rights is central to the concept of sustainable forest management, regardless of the government system in power in any given country. That security is generally the only incentive people have to encourage them to consider long term sustainable management of the forest. Undermining that security undermines the entire concept of sustainable forest management as the rural people cannot see any benefit accruing to them for their efforts.

Holistic or Multi-Sectoral Policy

To date, few governments have been able to take an holistic view of the issues facing their country with regard to the future of their forests. Almost without exception the approach has been piecemeal, and only one part of the issue has been addressed, often at the expense of creating a new problem or market distortion somewhere else. Interestingly, New Zealand is one of the exceptions to this general observation. In this case, the approach has been to recognise forests as just one part of the total picture which the government has to deal with, and building that into an overall reform strategy which encompasses all sectors of society. The problems faced are arguably somewhat simpler than those faced by many other countries, in that they do not have rural people dependent on the forest for their survival, and their forestry industry is based on a planted resource rather than the natural forests. A further advantage they have is the relatively limited population pressure on the forests.

In spite of the relative ease with which New Zealand is able to address the sustainable management of its total forest estate and its production estate in particular, there are potential lessons to be learned that can be considered for application elsewhere. Of greatest significance is the holistic approach taken to reforming the entire economy rather than just parts of it. These reforms focused on removing market distortions which influenced the way decisions were made. People then started to focus on what they were doing rather than, for example, on what tax advantages they may gain. The use of market forces to achieve various government objectives has also been used in the management of natural forests. While not universally applicable, conceptually it warrants closer examination.

Market failures stem from undefined or ill-defined property rights both within a particular time period and between the present and the future. The divergence between the prices of
forest related goods recognised in the market, and a more complete assessment of social value means that private decisions with respect to the use of forests are not always the best decisions for society. Because today’s decisions shape and constrain tomorrow’s, markets must deal with long time periods for private decisions to reflect society’s preferences.

The most appropriate model is for governments to react to these market distortions and correct them. Unfortunately, this is seldom achieved, and more commonly, any intervention compounds the problem.

The central need is for a policy environment to be created whereby forests retain both their essential natural functions and their capacity to supply goods and services required by people. The short term imperative is the need to stabilise the existing natural forest both in extent and quality, while in the long run there is a need to develop alternative sources of supply, including sustainably managed natural forest and plantations.

A significant first step is for governments to change existing incentives at various levels. Elimination of current policy distortions by correcting concession policy and royalty systems, removal of explicit and implicit export subsidies on timber and other forest products, and removal of incentives that encourage the expansion of agriculture are necessary. This lays a foundation for governments to then address and correct market distortions. Market failures can be corrected by creating incentives for tree planting, conservation and preservation of forest resources, strengthening forest institutions and especially property rights, and recognising the non-wood value of the forest resources.

Subsequently, a sustainable approach to land use policy is required for the more efficient use of these resources and to reduce the pressure on the forests. For example intensified agricultural practice on existing agricultural land reduces the need to clear additional areas to increase food production.

CONCLUSION

Forests and the products they provide are universally required for the continuation of human society as we know it. To change our society to one that does not depend on the forest (to the forest’s detriment) and its associated benefits requires such an enormous paradigm shift that we generally do not even consider it worthy of further investigation. Given this situation therefore, it is imperative that we discover mechanisms to manage the forest for all the benefits it can provide, in a sustainable manner.

Few countries have all the answers to all the issues faced, thus there exists a real need for international cooperation. Loss of forest resources transcends national boundaries and affects the entire planet. Given this, the roles of various agencies become vitally important in order to minimise any potential downside and to maximise the upside. Governments, NGOs, intergovernmental panels and the like must work more closely in order to resolve the pressing issues facing the forests. In many cases a collaborative approach will provide a solution which is more acceptable to all parties, and more robust than a solution that is developed unilaterally.

Societies around the world are beginning to face up to the reality that as a species man requires forest resources - both the wood and non-wood products a sustainably managed forest
can provide. As the guardians of those resources our performance has to date been abysmal. It is with a great deal of urgency that we must turn that record around and ensure that we have sustainably managed forests for the generations that are to follow. Only a long term global commitment to conservation and sustainable development can reverse the tide of uncontrolled deforestation. A sound policy framework is central to this commitment.
PART II - COUNTRY PROFILES
INDONESIA

General

Fact Summary

The Republic of Indonesia is one of Asia’s up and coming industrialised nations. It is headed by a President who is elected every 5 years by the Peoples’ Consultative Assembly (MPR), comprising 400 presidential appointed members; 100 army appointed members; and 400 publicly elected members.

Geography, Climate and Population

Indonesia consists of 17,508 islands covering 1.9 million km² along the equator between the Indian and Pacific Oceans. The country extends 5,100 km east to west, and 2,100 km north to south. Lying as it does on the edge of two continental plates, it has large numbers of active volcanoes and is subject to frequent tectonic activity.

Being on the equator, the Indonesian climate is monsoonal and humid. Thus there is a year round growing season. Very wet monsoons may restrict timber cutting while prolonged dry periods can result in water shortages that can make water transport of logs difficult.

Only 6,000 of the islands making up Indonesia are inhabited. Of these, four are home to 95% of the population of 191 million (1994). This makes Indonesia the fourth most populous country in the world. The population doubling time is 43 years. Current estimates put the population at 237 million in 2010.

Economy

In 1993 GDP was estimated to be US$730 per capita. To date economic growth has been fuelled by the export of oil and gas. However, since the mid-1980s, active deregulation by the government has significantly broadened the economic base. This is leading to changes as shown below.

<table>
<thead>
<tr>
<th>Major Economic Sectors as a Percentage of GDP</th>
<th>1990</th>
<th>2000 (forecast)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture (inc forestry)</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>15%</td>
<td>23%</td>
</tr>
<tr>
<td>Oil &amp; Gas</td>
<td>18%</td>
<td>11%</td>
</tr>
<tr>
<td>Construction</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>Other services</td>
<td>34%</td>
<td>36%</td>
</tr>
</tbody>
</table>

(source - World Bank)
The economy of the country has been growing steadily through the 1990s with growth rates in the 5 - 7% range. Per capita GDP is forecast to increase by about 50% by 2000.

At this rate of growth, Indonesia joins China, Malaysia and Thailand as the four Asian nations most likely to emulate the successes of Taiwan, Hong Kong, South Korea, and Singapore.

Forestry is a significant employer providing work for about 2% of the total workforce - about 3.7 million jobs, sustaining at least 15 million Indonesians.

**Forests**

The Ministry of Forestry has classified 75% of the land area as being within forest boundaries. This equates to 144 million hectares. This however does not all carry forest, nor does it signify that the forest that may exist has commercial wood production capability. A 1990 FAO report puts the area of forest at 109.5 million hectares (57% of land area), and some environmentalists put the area as low as 98 million hectares (51% of land area).

There are at least 19 different forest types in Indonesia, including coastal forests on beaches and dunes; tidal forests such as mangroves, nipah, and palm; heath forests associated with poor sandy soils; and peat, swamp, wetland, evergreen, bamboo, savanna and montane forests. Of the 4,000 species of trees in Indonesia, only 120 hardwood species are recognised as being suitable for commercial use. Of these, about 48 (mainly *Dipterocarp spp*) are used in the plywood industry.

Of the official figure of 144 million hectares, 34% is designated for protection and National Parks, and 21% is designated for conversion to other uses. The remaining 45% is managed for timber and other forest product production.

FAO estimates that in 1990 there were 46 million hectares of virgin production forest in Indonesia, but forecast that this would be reduced to 11 million hectares by 2000.

Secondary forest products, such as plywood, sawn timber, rattan and paper are the most important non-oil exports. These earned $US5.15 billion in 1993, and accounted for 25% of total industrial exports.

Indonesia has 10% of the world’s tropical forests, 60% of Asia’s tropical forests, and a significant proportion of the world’s remaining virgin stands. These forests are home to vast numbers of animal and plant species and people. Thus their value is substantially greater than simply their ability to produce wood and associated forest products.

The country is also developing fast growing plantations under the HTI (Industrial Tree Estate) programme. These plantations cover about 1.34 million hectares (1994) with the majority being Teak (67%); Pine (23%); Mahogany (8%); and Agathis. The government plans to decrease production from natural forests by 2% per year, and increase the reliance on plantations with a goal of having half the country’s wood production sourced from them by 2020. The plantation programme is envisaged to eventually convert 6.2 million hectares of unproductive forest land into industrial plantations by 2000. About 1.8 million hectares will be Teak.
Fuelwood places a significant demand on the forest resources with an estimated 150 million m\(^3\) gathered annually. However, this is not seen as a major cause of deforestation, unlike in many other countries, despite its notable role in Java.

Post-war deforestation is largely attributed to shifting cultivation, population resettlement programmes, and commercial logging. To blame these three factors alone, however, is simplistic.

Rubberwood is a source of supply that has not been fully utilised in the past. The Rubberwood International Trade Centre estimated in 1993 that Indonesia used only 27% of its economically available rubberwood resources. Rubberwood is used as a substitute for other hardwood species in every part of the forestry sector. Harvest levels in 1994 were 925,000 m\(^3\), but only 250,000 m\(^3\) (27%) were processed.

**Forestry Policies**

**Central Policies**

The National Forest Policy of Indonesia, in common with all development, is based on:

- Pancasila, the Five Philosophical Principles of the nation;
- the 1945 Constitution;
- guidelines of state policy set out each five years under the National Development Plans;
- the directives of the President; and
- the Kaliurang declaration of 1966 on sustained yield.

These embody the development and preservation of forests for national development; the good of the people; ecological balance; promotion of industry; and conservation of the environment. The main objective of the National Forest Policy is to guide forestry activities in supporting national development. It is a dynamic policy instrument designed to respond to national and international issues.

Until recently, the primary objective of Indonesia’s forest management plans was to generate revenue to replace oil and gas export earnings. That phase of exploitation is now passing, with the Government turning attention towards protection of the environment and sustained yield management of the forests, to support a forest-based industry.

The Ministry of Forestry developed the National Forestry Action Plan (NFAP) to coordinate forestry goals with the five year economic plans (Repelitas). For example, from Repelita I through IV (1969-1989), the long term national goals were:

- to open up the outer islands for forestry development;
- rapid development of forest-based industries;
- to achieve market power in its forest products.
Repelita V (1989-1994) saw emphasis move more towards sustainable development, including the following provisions:

- limits on log extraction to 31-32 million m³ per year;
- improved forest inspections, including the use of aerial photography and satellite technology;
- no new sawmill or plywood mill licenses;
- logging and processing activities to be integrated - as concessionaires with large investments in processing equipment have greater incentive for sustainable management;
- reforestation taxes increased by 150%, and a new export tax on sawn timber has reduced sawn timber exports and forced the closure of inefficient industries;
- establishment of a new Directorate of Extension to encourage citizen participation in conservation management in conjunction with forestry officials;
- improved training of forestry personnel in conservation and forestry management.

Overall, this Repelita recognises the need to rehabilitate production forests through the establishment of plantations, which will support the continuity of forest industries and promote export-oriented industries.

**Plantations**

The development of plantations is a significant step forward as Indonesia strives to retain a forest-based industry as a major contributor to the economy, while at the same time achieving a more balanced use of natural forests.

Concessionaires, state enterprises, provincial forestry services, and other organisations are involved in the implementation of the HTI programme. HTI contracts are made with the Ministry of Forestry, which regulates the management of timber estates. In 1990, however, HTI agreements were replaced with HPHTIs or Concession Rights for Industrial Estates. These concessions are for 35 years, with a possible extension by one cutting cycle.

Government regulations stipulate that unproductive or empty forest lands may be converted to HTIs. “Unproductive” land refers to forest where the potential volume of commercial species with a diameter of 30cm or more, is less than 20m³ per hectare. The programme applies to single species plantings of introduced species such as eucalyptus, acacia, albizzia, and mahogany.

**Recent Development**

Repelita VI (1995-1999) further modified the focus of forestry which is expressed in the country’s Forest Action Plan. The Plan proposes 9 programmes which include:

- conservation of living natural resources and their ecosystems;
- land use and forest inventory;
- forest protection;
soil and water conservation; improvement of natural forest management;
improvement of forest land productivity and establishment of industrial plantations;
improvement of the efficiency of forest based industries;
promotion of people’s participation in forestry development;
institutional and human resources development.

The Ministry of Forestry has established a permanent mechanism for coordination within the
country of various donor projects. This mechanism was institutionalised by decree in late
1994.

Non-Forest Policies

While the consideration of policies relating directly to forestry provides some understanding
of what is occurring in the country, many non-forestry policies have considerable bearing on
the future of forested areas.

In general, forest policies include those which are intended to affect the utilisation and
conservation of forest materials. They are controlled primarily by the Indonesian Department
of Forestry, and include such policy instruments as stumpage fees, log export taxes,
concessions, and reforestation programmes.

Non-forestry policies include all those other government agencies which, intentionally or
otherwise, have significant impact upon forest use, but which were primarily intended to
further non-forest objectives. Examples include resettlement, general tax and agro-conversion
policies, and even exchange rate policies.

Forest Impacts of Policies

From these policies, a number of factors evolve which impact upon the forest. Chief amongst
those factors which encourage poor utilisation of the forest, or commonly, its destruction, is
endemic poverty and the effect of institutions governing both property rights and access to
virgin forest stands.

Poverty has declined rapidly in Indonesia but is still substantial. Poverty usually impacts on
forests by way of shifting cultivation and fuelwood collection. A study presented by ITTO
suggests that shifting cultivators account for 59% of deforestation, while logging only
accounts for 9% of deforestation. Regardless of who actually removes the forest, until the
underlying issue of rural poverty is adequately addressed, deforestation may continue
unabated. This raises two questions, which are difficult to answer with any certainty.

Firstly, the distinction between forest quantity and forest quality must be addressed. While
logging may not result in “deforestation” per se, it may result in a significant reduction in the
quality of the forest, as measured in both economic and environmental terms, i.e. the issue of
forest degradation is as significant as deforestation.

Secondly, the question arises as to what the cause and effect relationship is. In many instances,
access provided by logging results in shifting cultivators moving into an area and removing
the remaining forest. Thus, attributing responsibility for removal of the forest is at best an inexact science.

The institutional framework within which forest utilisation has occurred has interacted with both poverty and public policy, to yield rates of forest consumption which, in all likelihood, have exceeded that which private owners of virgin forest land would allow. The institutional framework includes not only the process for assigning property rights to the forest, but also their enforcement (hindered by an inability to restrict forest access), as well as the assignment of responsibilities across government departments.

The government of Indonesia owns all property rights to the natural forest through provisions established in the 1946 Constitution. The rights may be temporarily assigned for 20-25 years (e.g. a timber concession), or irrevocably transferred to private parties (e.g. title to forest land issued to transmigration families).

The effects of this are twofold. Firstly, there is resentment between local people using the land for their existence and any party which has been granted rights to the land (e.g. for logging). Secondly, as the concessionaire has no long term interest in the land, there is no incentive to strive for long term sustainable management.

**Land Tenure**

A cultivator’s willingness to manage land in a sustainable way is closely linked to land tenure. Without secure tenure, there is no incentive for people to manage the land in a sustainable way. Sustainable management is an investment in the future. Without the security of knowing they can reap the rewards of that investment, people will not make the investment. Central government laws that do not take into account traditional land tenure systems are difficult to implement, and will create problems in the future. As there is no written title, a better understanding of traditional land tenure systems is required.

Traditional (or Adat) rights to land are formally recognised, although they are subject to varying interpretation within Indonesia’s Basic Regulations on Agrarian Principles. Formal recognition of indigenous peoples’ claims on their land, and the putting of that recognition into practice, is required in order for efficient management to take place.

Many Indonesian laws are said to be written with a supremacy of the national perspective in mind. For example, Article 5 defines rights of ownership (hakmilik) in the following way: “The Agrarian law which applies to earth, water, and air is Adat law (traditional) in so far as it is not in conflict with the National and State interests based on the unity of the nation.”

A problem with applying Indonesian law to shifting cultivators is illustrated in Article 7: “In order not to harm the public interests, excessive ownership and control of the land is not permitted.” “Excessive ownership” in densely populated Java is very different to sparsely populated Kalimantan. However, increased land tenure security is as important in Kalimantan as it is in other parts of Indonesia.

Similarly, Article 10, written to minimise problems with absentee landlords, ignores the fact that forest fallow periods are necessary to maintain soil fertility and productivity in a shifting
cultivator regime. Article 10 states that: “every person and corporate body having rights to agricultural land is in principle obliged to cultivate or exploit it actively by himself”, which further enshrines the “use” philosophy as opposed to sustainable management.

**Indonesia - Summary**

Progress has been made in the development and implementation of a Policy which comes from a philosophy of sustainable forest management in Indonesia although some believe that the progress is almost “too little too late”. The progress to date has seen policy move from one of encouraging the removal of forest as an impediment to development (especially to agriculture), through a period of aiming for sustained yield (of timber), to the current statements on sustainable forest management.

In recent years there has been strengthening of the institutional framework and greater involvement of NGOs which often represent interests other than timber production. There has been greater focus on inventory of both forest and land resources, and efforts made to rationalise the use of both. There has been the introduction of reporting systems, and in particular a move towards environmental impact type reporting. Much greater weight has been placed on non-wood forest values and the role of rural people in the long term management of the forest.

**Future Policy towards 2010**

As previously discussed, forestry policy can not and does not operate in isolation. Key policy decisions in other sectors, especially those relating to taxation, finance, regional development and migration, will continue to impact significantly on the forestry sector.

Some moves have been undertaken already which have also had some flow-on effect. For example, the 1945 Constitution reserved an important position for the State in the operation of the economy. However, there is now an increasing appreciation of the efficacy of competitive private firms in allocating resources.

It is said that a successful replacement of the corrupt and inefficient customs service had a strong psychological impact throughout the bureaucracy and the state enterprises. No longer is it taken for granted that everything that really matters should be in the hands of some arm of government.

One of the most significant constraints to modernisation of the economy is the reported weakness of the legal system. There is reference to poor remuneration of judges and prosecutors, lengthy delays in getting resolution, and lack of guarantee of a fair outcome, all of which may offer fertile grounds for corruption, and a good reason to find some other method of resolving matters. If there were greater certainty of fair and equitable resolution of disputes, a higher level of compliance with forest laws and a higher level of detection and conviction through a more effective judicial system, there should be greater attraction to the forestry sector including greater private sector confidence in investing.
There have been few privatisations of state-owned firms as yet, but growth of the private sector is being achieved more subtly, at least in some cases, simply by allowing the private sector to compete on more even terms.

There are some key matters to address within forest policy also. Firstly, forest policies, under the control of the Forest Department, have been strongly focused on the value of wood products, and the economic and social value of other agricultural use of virgin forest lands. This narrow policy focus has become the principal barrier to reform of policies impinging on tropical forest utilisation, and is the principal underlying reason for policy-induced deforestation.

Sustainable development of tropical forests that will protect the human and biological diversity which characterises such forests, would appear to require that several important policy initiatives be considered, including:

- containment, regulation and enforcement of obligations of timber companies which, to a considerable degree, have a free rein in the forests;
- granting of long term unambiguous rights to significant areas of forest to local people with local control and management;
- stabilisation of populations through revision of transmigration policies and birth control;
- increased involvement of “wealthy” nations in providing financial resources to aid in the development of sustainable forest management practices, and protection of significant areas;
- correction of market failures which currently encourage wasteful or excessive utilisation of forest resources;
- developing and prioritising research and information needs in order to better manage forest resources, including plantations;
- clarification of roles of various government agencies to better define objectives and outcomes, and to eliminate inter and intra agency conflicts.

There appears to be an urgent need for high level political recognition of the legitimacy of participation of all affected parties in developing forest policy in the future and the removal of obstacles to the empowerment and participation of weak or disenfranchised groups with a stake in the development of forest policy. Achievement of this goal will improve “buy-in” by those parties and will assist in having all parties working to common, mutually agreed objectives.

Bearing in mind the great diversity in cultures and traditions in the country, of special significance is the need to review the ownership of forest resources and land. The objective of such a review would be to produce a coherent and authoritative statement of law and policy regarding recognition of customary land rights under national law, to clarify how they are to be exercised and to ensure that the people who “manage” forests have security of tenure and therefore an incentive to aim for long term sustainable forest management.

Furthermore, before major achievements can be attained there is a pressing need for information and research on the forest resources and their management. Without such information any policy initiatives will at best be hopeful guesses. This is likely to require resources from both within and outside the country and should be carried out in a collaborative manner involving donors, internal institutions and NGOs.
Indonesia has been one of the great producers of tropical timber and continues to be so. This situation cannot continue indefinitely and is likely to be severely curtailed sooner rather than later unless major deliberate efforts to ensure that the resource is sustainably managed are made. This requires urgent and concerted effort by all parties, and in particular a major commitment from the government.

**Implications of Inappropriate Action**

The relatively rapid population increase in Indonesia will inevitably stretch the ability of the forest to continue to provide the resources people need or want. In particular, industrial wood for processing, fuelwood for domestic consumption, and non-wood forest product supplies will be jeopardised.

The longer the delay in moving to sustainable forest management practices, the lower the level of any sustainable supply of goods will be. Sustainable forest management will not eventuate by decree or regulation - it results from people seeing the long term benefits of implementing such practices.

Failure to address land tenure issues; to control harvesting operations; and weaknesses of government and regulatory authorities results in continued large scale unsustainable management practices. These in turn reduce the future potential for sustainable management.

Forest resources are not easily replaced once they are lost. Replacement imposes an enormous demand on capital, with a substantial period of time before any returns are realised. In purely economic terms, it is often better to manage the existing forest than to attempt to replace it once it is lost. In social terms, this may be even more imperative.
MALAYSIA

General

Fact Summary

Malaysia is a federation of 13 fairly autonomous states organized into three main regions: Peninsular Malaysia, Sarawak and Sabah. The country is ruled by a Federal Constitutional Monarchy with a Prime Minister, and is operating through a parliamentary system.

Geography, Climate and Population

Malaysia covers an area of over 330,000 km$^2$, and consists of two regions some 650km apart, separated by the South China Sea. Sarawah and Sabak are on the northern part of Borneo, and Peninsular Malaysia borders to the north with Thailand.

The climate is equatorial with generally high rainfall, much of this falling during the monsoon season. It is hot and moist year round, although the temperature is cooler in the highlands where breezes blow in from the ocean.

The population is 19.5 million (1994), estimated to rise to 24.3 million by 2010. At current rates the population is doubling every 30 years. The majority of people live in Peninsular Malaysia, 55% in urban settlements.

Economy

Malaysia’s economy is one of the fastest growing in South East Asia and Malaysia has the second most open market after Singapore. GDP per capita (1993) was US$3160 with GDP growth estimated at 8.5%.

Major components of the economy are (as measured by GDP contribution):

<table>
<thead>
<tr>
<th>Sector</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>31.5%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>14.8%</td>
</tr>
<tr>
<td>Petroleum</td>
<td>6.2%</td>
</tr>
<tr>
<td>Services</td>
<td>44.6%</td>
</tr>
</tbody>
</table>

Total exports in 1994 were US$51 billion and imports were US$49.9 billion.

The economy has always been one of the most open to international trade and investment. As such, trade and foreign investment has played a key role in the development of the economy. Because Malaysia is an open economy it is very interested in a liberal international trade
regime, and its policy reform has increased competition and efficiency by increasing market openness.

**Forests**

Forest area in 1991 was estimated to be 57.8% of the country. This amounts to 18.5 million hectares, of which about 80% is Dipterocarp forest. The forests range from swamp (mangrove) forests, to low to montane forests. The major timber producing region is Sarawak which produces 44% of the total harvest.

While it is difficult to obtain accurate figures, it is estimated that some 14.7 million hectares of production forest remained in the early part of the current decade. Of this, 9.7 million hectares had been previously logged and would not be available for further harvest for another 20 - 50 years. Most (about 7 million hectares) was logged in the 1980s.

Production of forest products in 1992 was 54 million m$^3$ of roundwood but this is declining for a number of reasons. The most fundamental reason is the past unsustainable over-cutting of the resource leaving little accessible merchantable forest remaining. A number of reports commissioned by the government and international agencies all pointed to a looming wood deficit, and indicated that unless drastic reductions in harvested volume were implemented, a wood famine would result soon after the turn of the century.

A 1993 study projected the overall supply/demand situation in Malaysia to fall from a surplus of 34.8 million m$^3$ to a 4.5 million m$^3$ deficit by 2001. A modest amount of timber will be forthcoming from plantations at the turn of the century and some additional rubberwood will be harvested. Even so, the forests will not be in good shape to supply a sustained yield into the new century.

Although less overwhelmingly significant than in other developing countries, fuelwood is another important issue for Malaysia with demand projected to rise by 1.4 million m$^3$ between 1990 and 2010. Total demand in 2010 is projected to be 9.7 million m$^3$. This demand will place further strain on the remaining forests and will impact on both the volume and quality of wood available in the future.

Production forests are classified as Permanent Forests and Statelands. Permanent Forests are harvested using selective practices, while Statelands are clearfelled and converted to agriculture or industrial land. With half the current harvest coming from Statelands, the country will face a major harvest level reduction when this resource is gone.

Rubberwood use is high in Malaysia with 1.7 million m$^3$ being harvested in 1995. This is forecast to rise to 2.1 million m$^3$ in 1998, before declining to 1.1 million m$^3$ in 2003, reflecting the age class structure of the rubberwood plantations. The harvest is estimated to be 62% of the available resource.
**Forestry Policy**

Malaysia was formed in 1963 when Sabah and Sarawak, located on the island of Borneo, joined the 11 states of Peninsular Malaya in a federated system of governance. In the original agreement, Sabah and Sarawak were to be on an equal footing with the *combined* states of Peninsular Malaysia in a tripartite power structure. Because state governments control nearly all matters of forest policy, the political debate over state versus federal power often plays itself out in the formulation of forest policy. There can be no meaningful discussion of “Malaysian” forest policies without also discussing specifically the Sabah Forest Policy, Sarawak Forest Policy, and Peninsular Malaysian policies.

The abundant natural resources of the country have long provided for the peoples’ needs including food, fuel, shelter, medicine, income and general welfare. The forest resources have also in recent times contributed to the economic development of the country through sale of timber.

Early in the 20th century, the expansion of rubber plantations and tin mining put increased pressure on the forest resources, resulting in the appointment of the first Chief Forest Officer. Forest policies began to evolve from this, including forest laws and rules enacted in the 1930s providing scientific management and control over the productive and protective functions of the forest. It is interesting to note that the first official statement of forest policy in 1922 declared that “the forests properly managed are an asset of continually increasing value and the government attaches the greatest importance to their maintenance, not only as a source of revenue, but on account of the many other benefits that accrue from the possession of them”.

By the 1930s, the country was being criticised for blindly following a forestry policy developed by India. This criticism resulted in an “Interim Forest Policy for the Federation of Malaya” in 1952. The policy laid the foundation for a series of Protective Reserves, with an even distribution in the interest of local self-sufficiency. A proportion of the revenue from Productive Reserves was to be reinvested in the form of silvicultural operations for cultivating fresh timber. It proposed to foster a real understanding of the value of the forest among the people, and become a working policy. Unfortunately it was not adopted as the official National Forest Policy.

As discussed previously, no truly comprehensive national forestry policy exists. In its place, there are policies adopted by the various state governments.

**Sarawak**

Sarawak’s “Statement of Forestry Policy”, approved in 1954, remains in effect, providing for reservation of permanent State Forest for protection and production, sustainable
management of productive forests, economical utilisation of forest products, and promotion of exports. The general Statement of Forestry Policy is:

“To reserve permanently for the benefit of the present and future inhabitants of the country forest land sufficient:

- to assure sound climatic and physical conditions, including safeguarding soil fertility, water supplies and prevention of erosion
- to supply in perpetuity at moderate prices all forms of forest produce required for agricultural, domestic and industrial use.

To manage productive forests for ongoing revenue on a sustained yield basis.

To maximise use of forest products on land that is to be converted to another use.

To foster exports as far as they are compatible with local demand.”

Sabah

The State Forestry Policy serves as a guide for the sustainable management of the forests, planning and implementation of the Forestry Department activities, and promotion of the value of forests.

The key policy components are:

“To preserve for the benefit of present and future generations of the state, sufficient forested land:

- to maintain sound climatic and physical conditions to safeguard water supplies, and prevent soil erosion;
- to supply in perpetuity forest products for both domestic and industrial needs.

To maximise the revenue from the forest consistent with the sustained yield.

To provide technically trained staff and to support research.

To accept in principle that security of tenure and long term planning is necessary for the successful management of the forest estate.

To foster an understanding amongst the people of the value of the forests to them.”

Peninsular Malaysia

Reserved forests in Peninsular Malaysia were originally delineated in accordance with the Land Capability Classification as lands unsuitable for mining or agriculture. The total natural forest in Peninsular Malaysia is made up of the permanent forest estate, national parks,
wildlife sanctuaries and reserves, and stateland forests. Stateland forests could in theory be converted to other uses.

**National Forest Policy**

Peninsular Malaysia approved an interim National Forestry Policy in 1969, which catered for developmental forestry and forest industries consistent with the country’s development. This policy was considered to be restrictive in nature, and vague. It argued for greater public participation as well as production, conservation and an export industry. This policy was approved by the National Forestry Council and endorsed by the National Land Council in 1978.

The National Forest Policy was further revised in 1992. The revision extends the policy to include the roles of research and education. This 1992 policy aims at a more comprehensive approach that addresses the requirements for sustainable management in greater depth.

This National Forestry Policy is supported by Sarawak and Sabah which have forestry policies with similar objectives.

The National Forestry policy is:

“To dedicate as Permanent Forest sufficient areas of land strategically located throughout the country in accordance with the concept of rational land use:

- to ensure sound climatic and physical conditions to safeguard water supplies, soil fertility and prevent erosion;
- to supply in perpetuity all forms of forest produce as required for both domestic and industrial use;
- to conserve adequate areas for the protection of conservation values and to provide for recreation, research and education.

To manage Permanent Forests in accordance with the principles of sound forest management.

To develop a programme of forest management to achieve maximum productivity from the forest.

To ensure thorough utilisation of forest produce on land prior to its conversion to other uses.

To promote efficient harvesting and utilisation of forest products and the development of processing industries.

To support research, training and education and understanding of the multiple benefits of the forest”. 
This shift in emphasis in the policy to include research and education is encouraging as an indicator of the more holistic approach being taken towards forests, rather than simplistically viewing them as wood resources alone.

**Policy Formulation**

In earlier times there was little conflict over the use of forests, as population pressure was not great. The greatest emphasis in policy formulation was on the utilisation of the wood-based forest products, and there was little emphasis on the non-wood forest products. In more recent times the increasing demands for both wood and non-wood forest products has resulted in rapid deforestation and greater conflicts over resource use. This has resulted in difficulties for both the industrial wood sector and the domestic wood using sector.

There are several commonalities and differences in forest policies and utilisation between the three principal States. The States all encourage forest-based industrialisation, and forest policy has traditionally placed an emphasis on wood production with much less on the non-wood potential of the forest. The state governments have in the past all derived significant revenue flows from taxes related to forest products, especially from export taxes.

The type and extent of forest remaining in each State varies widely too, and as a result each State takes a different view of its forest and has different issues to cope with. Sabah contains some of the world’s richest remaining rainforest, and shifting cultivation remains a major driver of deforestation. Peninsular Malaysia however has much poorer forests and conversion of forest to permanent agriculture is the major cause of deforestation. Sarawak contains valuable peat swamps where the much prized *ramin* trees are exploited.

The increasing evidence of the impact of deforestation on both industrial and domestic wood users has resulted in significant changes to forest utilisation. Levels of harvest are in decline and even the current reduced harvest is, according to some, unsustainable.

There has also been a significant move away from the export of unprocessed logs and a move towards much greater levels of onshore processing. There appear to be significant distortions in the policy relating to royalties and rents.

A series of royalties are payable by the exporter of forest produce to the various governments. In general these royalties are based on the value of the timber being exported. This appears to encourage the loggers to high grade the forest (i.e. to remove only the most valuable trees as the royalty on them as a percentage of total value is much lower). While in itself this is not too serious, the process of removing the trees from the forest is often very destructive of the residual forest. Thus the younger and lower value stems which could have formed the basis for a second cut from the forest in the future are to some degree damaged beyond the point of economic recovery. A further related issue is that the process of high grading extracts a lower volume per hectare, so more hectares are covered to recover a set volume.

It seems essential to use methods of royalty and rent collection that dissuade loggers from the practice of high grading, rather than encouraging it. An enforcement system is needed that ensures loggers are responsible in their operations. This highlights the second very important matter, that of enforcement of the requirements of various concession regulations, and the
requirements of government forestry policy. As many of these operations are found in remote locations with poor infrastructure and often poorly paid local officials, there exists considerable opportunity for “indiscretions” to go undetected at best, and ignored at worst.

The Malaysian Uniform System of forest management required the retention of sapling and advanced growth in the stands being harvested. In Sabah in 1977 this was discarded as it was deemed to be not working due to the damage being done to the stand during logging, preventing the adequate retention of advanced growth. This is a rather backward step and is akin to removing speed limits on roads because no one obeys them, rather than considering how people can be encouraged to comply, including upgrading enforcement methods.

As in all countries, forest policy cannot operate in isolation to other economic and infrastructural policies. The major issues of non-forest policy to be considered relate to tax policy, industrialisation policy, foreign investment, resettlement programmes and tenure related issues. As in many Asia-Pacific countries, conflicts between traditional resource users (generally indigenous people) and the more recent demand for industrial fibre supply to industry and to produce export income, continue to plague Malaysia. Resettlement schemes, while not on the same scale as those found in Indonesia, are used in Malaysia. These result in considerable removal of forest as the resettled people turn land to agricultural use.

Tax policy and industrialisation policy also have a role to play. Malaysia has traditionally not offered tax holidays to purely extractive timber companies, unlike many other countries. There has, however, been a move from the late 1970s to encourage the industrialisation of the forest industry through the use of royalty and trade policies. Manipulation of royalties has been much more successful in promoting industrialisation than the imposition of quotas. For example, until 1979 in Sabah almost all exports were in log form. The timber royalty imposed after this time provided very strong incentives for investments in sawmilling.

While superficially, investment in sawmilling in the country appears to be a move in the right direction, the policy of pursuing further processing should not be followed at the expense of rational management of the forest. Indeed, in many cases the development of processing capacity may place even greater demands on the forest than simply the extraction of the most valuable logs. Examples of this can be seen in many countries, where as the sawmill nears the end of its log supply (e.g. its concession is cut) there are so many jobs at risk that the mill is given a new concession simply to maintain employment levels. Often this new log supply is from an area that was previously designated as some form of reserve.

Government policy must put in place a sound and rational basis for managing the forest for a sustainable yield of wood and non-wood products, and not simply focus on maximum short term output of economic goods.

These policies need to extend not just to the forest itself, but to the land the forest occupies. While it is necessary, and even arguably desirable for areas to be converted from forest to some other land use (usually agriculture), careful planning is required to ensure that this is carried out in a balanced and sustainable way. A major conflict can occur where both agriculture and forests are most productive on the same types of land. In the past the agricultural lobby has often won the day as their production is more immediate. However, over time problems have surfaced, the most pressing of which in most rural areas is the supply of fuelwood.
Further conflict over resource allocation can arise with industrial development demands. In Sarawak in particular, the demand for electricity is resulting in large scale hydroelectric development with the consequent loss of large areas of forest.

While some progress in thinking has been made, implementation has not kept pace. For example it is noteworthy that logging is permitted in water catchment areas under more restricted guidelines than elsewhere, but the total area of Permanent Forest that is totally protected is still only about 2%. Thus, although the National Forestry Act provides a platform for the multiple use management of the forest, the actual situation suggests a still strong bias in the Act and its interpretation towards management of forests for timber.

**Malaysia - Summary**

Removal of forest in Malaysia in favour of utilization of transfer to alternative land uses has, as in many other countries, resulted in substantial increases in GDP, to the benefit of the people. As with other countries, there comes a time when further removal of forest could actually reduce living standards rather than enhance them. It is always difficult to say when that point is reached, and in fact there is no real answer. There are however indicators which should not be ignored. In Malaysia these include the very real likelihood of moving from being a major exporter of wood to a minor player or even a net importer. The real and increasingly poorly satisfied fuelwood market is another of the indicators. A further indicator is the increasing concern being expressed by the world community about the loss of forest resources.

The solutions are not simple. However by recognising the issues some progress can be made. Key issues include:

- Poor or inadequate resource information relating to the extent of the remaining forests, their wood and non-wood value, their ecology and their management requirements.
- Significant market distortions such as tax and resettlement policies leading to forest resource and forest land allocation decisions unrelated to the needs of the forest.
- Inadequate recognition of the rights and needs of indigenous people who continue to rely on the forest for their existence.
- Development of a compliance and enforcement capability towards the management of the forest, including both education and enforcement.
- Acceptance of the paradigm of forests as multi-functional is a first important step towards sustainable management, but it is even more important to mobilise action towards maximising the long term (inter-generational) benefits of this multiplicity.
- The need to include non-wood forest products in the National Forestry Act.
- The autonomy enjoyed by the state governments in the management of their forests could be interpreted as hindering the development of a truly national approach to sustainable forest management, and may be used for political leverage in non-forestry issues.
**Towards 2010**

The open economic policy which Malaysia has followed puts it in a good position to further develop as world markets are opened up, and both tariff and non tariff barriers to trade are reduced.

With the world’s ever increasing demand for cheap sources of wood, even greater pressure is placed on the remaining wood resources in the country. In order to benefit from the natural resources with which Malaysia is endowed, some important policy moves are required.

Rational development of forest management technology is an obvious and urgent need. With the range of forest types present and the range of pressures on the forest, this will require considerable effort. Further, to be most effective it must take an holistic view of the forest and its “products” (both wood and non-wood), and it must take a regional view rather than a simple State view. Forests and their ecology have developed without the concept of national and state boundaries. These human imposed concepts often cloud our judgement about the best means of managing and protecting resources.

This holistic view requires a more unified approach to forests on the part of the various governments (State and Federal) and a recognition that the issue of sustainable forest management must transcend State or, in some cases, even National matters.

While adopting a state, national or even higher perspective, sight should not be lost of the fact that in order to ensure long term protection of the forest resource, there is a need to involve local people. The value of the forest must be recognised in an holistic way. Current legislation does not encourage this, and in some cases actively discourages forest protection. For example law which will only give title to land to people once they have removed the forest cover continues to support the concept that forest land is of no value until such time as it is converted to something else. For people to want to protect the resource they need some "ownership".

As a significant part of the population continues to rely on fuelwood for their domestic cooking and heating, the supply of this commodity will need careful management to replace the very ad hoc management currently practised. The volume of fuelwood consumed annually is such that it justifies deliberate development and replacement of forest resources in areas close to large populations that have not yet moved to alternative energy sources. Management of fuelwood requires both policy input from government to ensure equitable resource allocation, and research. Research is required to address fundamental issues, including the most efficient means of producing the required fuelwood (or some alternative energy source), and the most efficient method of utilising the resource once it is produced, with the aim of reducing total demand.

**Implications of Inappropriate Action**

Fuelwood demand in Malaysia is significantly less important than in may other countries in the region. Nevertheless, requirements pose a largely insidious threat to forests. Much of the “market” for fuelwood is informal, making it difficult to measure and even more difficult to
manage. Yet management of this demand is required in order to permit the forest resource to provide not only a short term fuelwood supply, but also a full range of other benefits.

In fuelwood issues and in most other forest-related issues, involvement of local people is vital. If they cannot be convinced of the need for long term, sustainable management of the forest resource, and also be convinced that this is in their own interests, then progress will be slow or non-existent. The risks of such an outcome are substantial. They include a rapid decline in the ability of the forest resource to provide the products required, and a consequent need to source alternative supplies at a high economic and social cost. In particular, replacement of forest resources is capital intensive - often at a time when other capital demands are also high due to the dislocation created by the inability of the forest to supply the products required.

Involvement of local people can pose major problems. The nature of forest policies is that they are generated at the centre and must flow “outwards” or “down” to those affected. There is however an essential need for feedback to that centre in order to adapt policy to changing situations. Failure to meet the needs of local people usually results in the policy being ignored, or even in some situations being deliberately flouted - often in response to real or perceived threats that people feel.
NEW ZEALAND

General

Fact Summary

New Zealand is a small group of islands in the South Pacific. Head of State is nominally the Queen of England. The Government is democratically elected every three years.

Geography, Climate and Population

The country lies between latitudes 34° and 48° south, and consists of two main islands extending 1,600 km from north to south, and 250 km wide. Lying on the edge of two continental plates means there is considerable tectonic and volcanic activity. Total land area is 27 million hectares.

Climate ranges from sub-tropical in the north to sub-Antarctic in the south. The prevailing westerly winds give rise to a rainfall gradient from west to east. Rainfall is generally between 600 - 2,500 mm per year, spread throughout the year but peaking in winter (May to August).

Total population is 3.6 million (1996 Census). Doubling time for the population is estimated to be about 75 years and is projected to be 5.4 million in 2010. In general the majority of people live in urban centres and enjoy a high standard of living.

Economy

The New Zealand economy has in recent years changed from being one of the most regulated in the world, to being one of the most deregulated. Prior to 1984 when the reforms began, there had been a long period of deterioration in wealth relative to other countries.

The period from 1984 to the present saw a massive restructuring, but it was not until 1993 that the benefits began to appear. Real GDP growth rose to 6.2% in 1995, and unemployment dropped from over 10% at the beginning of the decade to 6.0%. Inflation has stabilised between 1% and 3%, and the value of the New Zealand dollar has risen markedly.

Total exports in 1995 were US$14 billion, GDP per capita in 1995 was $US15,180, with growth having slowed in the latest period but projected to continue increasing at about 3.5% per year.

The major components of the country’s export earnings are:

<table>
<thead>
<tr>
<th>Industry</th>
<th>% Total Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy Products</td>
<td>14</td>
</tr>
</tbody>
</table>
Forestry has recently (1996) become the second largest export earner, and is likely to become the largest within a decade.

**Forests and their History**

Forests in New Zealand are best described in two groups - natural forest, and planted forest. Natural forest covers 6.4 million hectares (24% of the land area), and planted forest covers 1.5 million hectares (5% of land area). A further 10% of the land area is in other forms of indigenous vegetation including regenerating forest (scrubland).

Planted forests provide 99% of all roundwood produced annually. These plantations are predominantly fast growing, introduced softwood species, with 90% being radiata pine. There is however an increasing interest by some forest growers in the development of hardwood plantations.

Natural forests owned by the State are largely protected from timber production with limited small-scale production allowed from privately owned natural forests, provided the production is carried out in a sustainable manner and has the required permits from the government.

Within New Zealand, neither the indigenous people (Maori) nor more recent settlers rely on the forest for their supplies of food and fuel, apart from some home heating and the use of residues in industrial processes. This results in almost all timber removals being destined for industrial use.

Prior to human arrival in New Zealand (*circa* 900-1300 AD), the country is estimated to have had 80% forest cover. Only those areas higher than the timberline, too wet or infertile, and those areas affected by a recent volcanism did not support a forest vegetation.

Polynesian immigrants (Maori) who arrived about 1,000 years ago were responsible for a significant decline in the forested area, especially in the drier eastern regions. Most destruction was by way of uncontrolled fires. The Maori were generally hunter/gatherer people rather than agriculturalists. Thus forest destruction was not to facilitate agriculture.

European discovery was in 1769 (Cook), and settlement of shore areas started by about 1800. More determined settlement commenced some 40 years later.

The European settlers pursued an aggressive policy of forest removal to facilitate agricultural expansion. Harvesting of timber was peripheral to the desire to clear land for agriculture.

Forest destruction by Polynesians had reduced the forest cover from 80% to 50% of land area by about 1840. Subsequent forest removal (largely by Europeans, but also some further by Maori) has reduced forest cover to about 24% of land area.

Until 1985, forest removal was encouraged, and in general subsidised by central government.
In the early part of the 20th Century, there existed in some quarters increasing recognition of the inability of indigenous forests to supply the country’s future timber needs. This resulted in large scale planting of forests of exotic species, initially by the government, and followed by the private sector.

The government encouraged the private sector to plant trees through various incentives, while at the same time continuing to afforest large areas itself. Ironically, some of the incentives paid by government were to clear natural forest so that it could be replaced by planted forests of introduced species.

The development of these planted forests of introduced tree species has put New Zealand in an almost unique position in terms of wood production. The extent of planted forests has permitted a dichotomy of management regimes to develop to the point where natural forests are almost entirely protected from both timber production and clearance, and planted forests are managed principally for wood fibre production. With planted forests providing almost all domestic forest products requirements, the rising levels of harvest have created a substantial exportable surplus.

**Current Situation**

**Key changes**

A significant change in government policy in 1985 was to have a profound effect on the New Zealand economy, with forestry being significantly affected.

All subsidies were removed as the first step in moving from a heavily regulated economy to a market-driven economy, in order to balance government’s spending with its income. Further major structural reforms included:

- sale of many state-owned business, including the State’s planted forests - which made up about 54% of the total planted resource;
- de-regulation of financial markets, allowing free movement of funds into and out of the country;
- removal of price protection, subsidies, and barriers to trade;
- restructuring of the taxation system; and
- clear demarcation of social versus economic objectives.

The result of this has been a significant change in the focus of all business sectors, including the forestry sector. In particular, businesses now focus on activities which generate genuine profits, not tax leverage.

In the forest sector, the restructuring of the economy, including the sale of state-owned planted forest, coincided with a substantial expansion of the available harvest as a result of planting in the late 1960s and early 1970s.
The expanded harvest has moved the focus of the forestry sector from domestic markets to international ones, as shown below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Planted Forest Area (ha)</th>
<th>Percentage Privately Owned</th>
<th>Total Cut (m³ x 1000)</th>
<th>Percentage Exported</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>1,095,000</td>
<td>48</td>
<td>9,626</td>
<td>35</td>
</tr>
<tr>
<td>1987</td>
<td>1,154,000</td>
<td>48</td>
<td>9,613</td>
<td>30</td>
</tr>
<tr>
<td>1990</td>
<td>1,261,000</td>
<td>52</td>
<td>11,744</td>
<td>46</td>
</tr>
<tr>
<td>1993</td>
<td>1,328,000</td>
<td>80</td>
<td>14,937</td>
<td>59</td>
</tr>
<tr>
<td>1996</td>
<td>1,559,000</td>
<td>94</td>
<td>16,964</td>
<td>60</td>
</tr>
</tbody>
</table>

The focus today is on export markets. Planted forests supply over 99% of the total cut. The result is no reliance on natural forest for produce other than speciality timbers, and planted forests creating a substantial exportable surplus.

The freeing up of financial markets and the expanding cut has resulted in other structural changes. The most significant policy change was the dis-establishment of the New Zealand Forest Service in 1987. The component parts of this government department were principally split three ways:

- protection of natural forest became the responsibility of the new Department of Conservation;
- government policy, training and research became the responsibility of the new Ministry of Forestry;
- planted forests were transferred to a State Owned Enterprise charged with making a commercial return from them.

Since then, research and training has been removed from the Ministry of Forestry, with research becoming a Crown Research Institute (effectively a government-owned company with commercial and scientific objectives), and the planted forests have been sold to the private sector.

Several of the largest international forest growing and processing companies are now actively involved in New Zealand. The inflow of investment has seen further expansion of the planted estate, but processing investment has failed to keep pace with the rising harvest.

Harvest rates are projected to rise further, as is investment in processing. The table below shows, however, that in the short term at least, the trend of increasing export of raw logs will continue, or at least will not decline.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Harvest (m³ x 1,000)</th>
<th>Volume of logs exported (m³ x 1,000)</th>
<th>Percentage processed onshore</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>9,911</td>
<td>1,247</td>
<td>87.4</td>
</tr>
<tr>
<td>1985</td>
<td>9,626</td>
<td>360</td>
<td>96.3</td>
</tr>
<tr>
<td>1990</td>
<td>11,744</td>
<td>2,170</td>
<td>81.5</td>
</tr>
<tr>
<td>1993</td>
<td>14,937</td>
<td>4,734</td>
<td>68.3</td>
</tr>
<tr>
<td>1996</td>
<td>16,964</td>
<td>5,640</td>
<td>66.7</td>
</tr>
<tr>
<td>2000 *</td>
<td>20,000</td>
<td>6,000</td>
<td>70.0</td>
</tr>
</tbody>
</table>
Current Legislative Framework

The present legislative philosophy in New Zealand is to move away from prescriptive central government controls to a permissive, self regulatory focus with enforcement and abatement action where appropriate.

Key legislation affecting the sector includes:

**Resource Management Act (1991)** - with the objective of sustainable management of the life giving resources of air, water, soil, and ecosystems. The Act takes an holistic approach to the management of natural and physical resources. Sustainable management is defined in the Act as: “Managing the use, development, protection of natural and physical resources in a way or at a rate, which enables people and communities to provide for their social, economic, and cultural well being and for their health and safety while -

a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

b) Safeguarding the life supporting capacity of air, water, soil and ecosystems; and

c) Avoiding, remedying or mitigating any adverse effects on the environment.”

The focus of the Act is to control effects and not to control activities *per se*. Thus there is a considerable importance placed on measurable environmental indicators such as water quality, soil retention, air quality and the like.

This has significant implications for both forest growing and processing, which are treated equally with other sectors under the Act in terms of their effects. Forest establishment, management and harvesting must comply with the Act in the same way as any industrial process.

- **Health & Safety in Employment Act (1993)** - requiring all employers to take all practicable precautions to ensure the health and safety of their workers.

- **The 1993 Amendments to the Forests Act 1949** - requiring all management of natural forest to be under the auspices of a sustainable management plan or permit, granted by the Secretary of Forestry. The Act defines sustainable management of natural forest as: “the management of an area of indigenous forest land in a way that maintains the ability of the forest growing on that land to continue to provide a full range of products and amenities in perpetuity while retaining the forest’s natural values”.

This provision allows for the retention of forests in their present extent and condition and ultimately the enhancement of natural forest values, while still permitting a small but sustainable harvest of wood. As New Zealand was naturally a forested country, the protection of forest values is vital to the conservation of biological diversity (particularly the significant number of threatened native birds, reptiles and insects) and to the protection of natural landscapes.
There are currently two exceptions to the requirements of this Act, which while controversial in New Zealand, are insignificant on a global level. The first of these is some forest areas granted to indigenous people to develop an economic base; and the second is an area of government-owned forest. The company managing the government-owned forest is not required to abide by the Act, but instead must have its management proposals audited by the Parliamentary Commissioner for the Environment. This audit process is independent of both the company and the government.

There are however moves currently aimed at bringing these last two exceptions under the auspices of the Forests Act.

Institutional Structure

Four key central government agencies have a role in the management and protection of natural forests in New Zealand. The responsibilities of each are outlined below.

1. **Ministry of Forestry** - The Ministry is responsible for border control to ensure agencies injurious to both the planted forests and the natural forest are prevented from entering New Zealand. Should such an unwanted pest enter the country, the Ministry is responsible for any control action that is required. The recent arrival of the White Spotted Tussock Moth has seen the Ministry carry out a large scale control programme with the intention of eliminating the pest due to the threat it poses to both forests (planted and natural) and to the agricultural and horticultural sectors. The second important area of responsibility of the Ministry is the approval of sustainable yield plans and permits as described above.

2. **Department of Conservation** - This Department, established in 1987, is responsible for the management of all government-owned natural areas (which total about one third of New Zealand’s land area). In addition it is responsible for advocating for the protection of natural assets on land not in government ownership. Thus for example they have input into the development of sustainable management plans for areas of natural forest, which as described above, the Ministry of Forestry must approve.

3. **Ministry for the Environment** - The Ministry for the Environment arose from the recognition that government needed an agency that was not directly involved in the management of resources to oversee environmental administration. This Ministry is responsible for the administration of the Resource Management Act, which as previously described, is the central piece of legislation for environmental protection and management in New Zealand.

4. **Parliamentary Commissioner for the Environment** - Created as an independent role, the Commission is able to investigate and report on any aspect of environmental management in New Zealand. As such it can provide an audit role for government environmental agencies, and is able to criticise and make recommendations on any matter it wishes. Its independence is vital to it being able to perform its functions on behalf of the people of New Zealand.
In addition to these central government agencies, New Zealand has an Environment Court which is responsible for making decisions on environment related matters. The majority of its work relates to planning issues involving the use and development or protection of natural resources.

**The Future to 2010**

**Driving Forces**

Key drivers of the forestry sector in New Zealand over the period to 2010 will include:

- Continuing rise in harvested volumes from planted forests. This is projected to reach 28 million cubic metres per year by 2010, assuming ongoing new planting of 50,000 hectares per year. These volumes will increase the demand for capital investment for processing.

- Increased demands on internal infrastructure as the forestry sector becomes the largest export earner.

- Obligations to meet international agreements on greenhouse gas emissions and climate change.

**Key Constraints for the Sector**

For New Zealand, the major constraints to maximising the potential for the forestry sector to contribute to economic development and the well being of the community, are likely to emanate from outside the country. These include:

- Failure to achieve international market place recognition that New Zealand’s dichotomous forest management system, where natural forests are protected, and wood fibre is produced in plantations, does in fact constitute sustainable forest management, and does protect biodiversity.

- The escalating need for capital to process the increasing wood harvest from plantations. If this investment is not achieved, harvested volumes will continue to rise to beyond 30 million cubic metres by 2025, but economic contribution will not be maximised.

- Distraction of central government from its current course of a deregulated, unsubsidised, low inflation, stable political and economic environment.

- Offshore interpretation of New Zealand as a destination for investment to maximise potential returns from processing. This is very dependent upon continued control of inflation (currently constrained between 0-3%); continuing deregulation of finance, transport and labour markets; and continued belief in the free market economy.
• Failure to develop the necessary infrastructural assets required to capture the benefits offered by a large, sustainable wood harvest. Particular weaknesses are apparent in transport infrastructure in some regions, and energy production for large scale processing. While this is largely a matter to be resolved by the private sector, the appropriate investment climate must be created by central government in order for it to happen.

• Trade and non-tariff barriers for New Zealand’s exported forest products, with particular problems of recognition through various international certification of forest product protocols, of the role and management of planted forests. In addition, the attitude of trading partners to protectionism could impact significantly, given the need to export the majority of forest production.

**New Zealand - Summary**

The New Zealand forest industry is unique in that it is focused on the management of introduced species, especially the softwood *Pinus radiata*.

The natural forest estate, covering a quarter of the land area, is almost entirely protected by statute, and those few areas in which harvesting is permitted must conform to very tight, government controlled management plans to ensure that any timber production is sustainable, and does not adversely affect other forest values.

Production from the forest industry is dominated by exports, with the local market being fully satisfied. Thus, those factors influencing international trade in forest products will have considerable bearing on the outcome for New Zealand.

The challenge for the New Zealand government over the next decade and further is to work through international issues such as non-tariff barriers, climate change, and forest certification to ensure that New Zealand’s unique position is recognised.
PAPUA NEW GUINEA (PNG)

General

Fact Summary

PNG is a constitutional monarchy with the Queen of England as Head of State. The government is elected every 5 years.

Geography, Climate and Population

Papua New Guinea lies just south of the equator approximately 150 kilometres north of Australia. The country is mountainous with high ridges and deep valleys. PNG’s climate is hot and humid except in the highlands (above 2,000 m). The temperature remains constant year round in all areas.

The population in 1994 was 4.2 million and is projected to rise to 6 million by 2010. The doubling time is estimated to be 30 years.

Economy

The economy of PNG has in recent years been on something of a roller coaster ride. The “rebellion” in Bougainville in the early 1990s caused considerable upheaval in economic terms but by the mid-1990s this had reversed. Late 1996 and early 1997 have seen another reversal in fortunes with the strong calls for the government to resign and real fears of civil war. The outcome of this latest unrest is likely to have significant long term consequences for the economy as foreign investment becomes increasingly nervous.

Mineral and oil exports contribute significantly to the income of the country. Recent moves to loosen fiscal policy have made the environment for mineral and petroleum investment considerably less certain. Mining and petroleum sectors contribute 20% of GDP, with this figure continuing to rise.

Broadening the base of the economy and encouraging continued investment in resource developments requires maintenance of sound macro-economic management, upskilling of the labour force and maintenance of law and order.

Forests

Virtually all forest land is owned by clan or tribal groups under customary law.
Approximately 80% (37 million hectares) of the total land area are classified as forest. However logging over the past 20 years has reduced the forest area, and is also likely to have reduced the quality of the remaining forests.

Of the total forest area, about 20% (7 million hectares) has the potential to supply wood on a sustained yield basis. It should be noted that this takes into account the production of wood on a sustained yield basis, which may be different to sustainable management of the forest resource. The increasing population and demand for agricultural land is placing pressure on the forest resource with as much as 4 million hectares of the productive capacity forest predicted to be converted to other uses. Unlike the tropical forests of Indonesia and Malaysia, these forests are comprised of a large number of diverse, less desirable species and as a result, have had a limited market acceptance to date.

Plantations are being developed to an altitude of about 1,000 metres above sea level. By the 1990s these consisted of some 40,000 hectares of mostly fast growing hardwood species. In general these plantations are scattered and will not form the basis of a processing industry for some years yet.

To date a number of logging concessions have been let with much of the production going to the north Asian market. Average volume of merchantable species is low at around 23 m³ per hectare, and growth rates are low.

The activities of concession holders have caused concern in the past and in 1990 a two year moratorium was placed on the issue of new licenses. In spite of this new operations have commenced.

The rapid decline in the ability of other Asia-Pacific countries to supply the market with tropical hardwoods will result in increased pressure being placed on PNG’s forests to supply raw material to new and established processing operations. However, there remain considerable political and logistical problems to overcome in order for the trade to really develop. This may in fact be something of a blessing, as if managed properly, there exists the opportunity to develop a sustainable forest management system, to the benefit of the people, while there still exists a significant viable forest resource. However, the opportunity must be grasped, as it will not be available indefinitely.

Fuelwood consumption is rising with predictions it will reach 7.5 million m³ by 2000. These are not expected to have significant influence on the potential harvest of commercial forests over the next decade.

**Forest Policy**

Papua New Guinea ranks with Indonesia, Malaysia and the Philippines as one of the four major tropical timber producers of the region. Unlike the other three however, Papua New Guinea’s timber industry may be characterised as being in a sunrise phase, with the others being close to a sunset phase. The extensive forests of the country are to date, largely untapped, with little even known about much of them.
The small population and lack of any significant timber industry until the late 1960s meant that little need was seen for a forestry policy until that time. As the harvest from the natural forests started to increase, planning in any meaningful sense was abandoned, politicians and officials were corrupted, landowners and public revenues cheated, and the social and physical environment devastated.

Pressure from the loggers resulted in rapid deregulation of any controls that existed. In particular, in 1971 the Forests (Private Dealings) Act was passed allowing timber companies to negotiate to purchase forest blocks direct with the landowner, rather than through the government as had been the case previously. This removed any protection the local (often tribal) landowners may have had from the activities of the less scrupulous timber companies, even though the protection afforded by the government in many cases was found to be wanting.

This is an important consideration, as about 98% of the land area of the country is held as customary land, hence the government does not own the resources. Any moves the government makes must be on behalf of the owners rather than as an owner in its own right.

In 1979 a Revised National Forestry Policy, known as the 1979 White Paper, focused on the development of a forest industry and the export of logs. The Policy sought to have the forest industry make a significant contribution to national development objectives, especially by way of revenue generation, employment creation, and regional development.

The Policy also sought to have the development of the forest industry occur in an orderly fashion and provided for a National Forest Development Plan. The Plan was to resolve the competing needs of various provinces. There was recognition that the experience of other log exporting countries was often not entirely satisfactory and that there was the opportunity to improve on this.

The White Paper also noted that unless land was made available for follow up development, the goal of sustainable forest management was unattainable. The Constitution required that management was to provide for the needs of both current and future generations, thus requiring a long term focus.

While well intentioned, the reality of the White Paper’s goals were not realised to a large extent. In particular, the problems of decentralised control, and the major issue of enforcing the requirements of the Policy were not recognised until later. Illegal activities on the part of timber companies became widespread with the government either unable or unwilling to do anything to halt the practices.

After a period of review and redevelopment of the White Paper during the late 1980s, the National Forestry Act was passed into law in 1991 with effect from 1992. The objectives of the new Policy stem from the Act and the Constitution. Broadly they cover such matters as:

- management and protection of the nations forest resources as a renewable natural asset;
- utilisation of the nation’s forest assets to achieve economic growth, employment creation and increased onshore processing;
- collection of data and the advancement of knowledge relating to the utilisation and management of the forest resources through research;
• improved training and education in forestry;
• effective strategies to administer and maintain the forest resource.

The Policy also calls for the preparation of a National Forest Plan. This Plan, based on a national forest inventory, will include a statement of the annual allowable cut for each of the 19 provinces. This does not remove the rights of customary landowners to deal directly with timber companies but does give them the option to sell their timber through the government forest corporation. However the National Forest Plan will define the scope of permissible forestry operations in each province.

The major features of the new Policy cover areas of forest management, resource acquisition and tenure, and development of the economy and the country’s infrastructure.

Forest Management recognises that the State, in acquiring the rights to manage forest resources must take overall responsibility to replenish the resource and must always recognise the rights of customary owners. Sustained yield is to be the guiding principle for production forests, with various provincial forest plans being amalgamated to form a National Forest Development Programme.

A new National Forest Plan, as required under the Policy, was approved by the National Forest Board in mid-1996, setting out the plan for:

• downstream processing;
• the annual allowable cut for the country to be set at 4.9 million m³;
• ongoing log exports at current levels;
• definition of land use categories identifying reserves and protection forest, as well as production forest;
• programmes for sustainable forest management;
• a national forest inventory to improve resource information;
• emphasis on resource replacement or reafforestation to ensure ongoing wood supplies;
• acquisition of forest resources from customary owners to be made under forest management agreements;
• staff recruitment to accompany development.

On the surface, the Plan confronts some of the key issues facing the country and its forest resources. The matter is unfortunately not that simple as there is considerable concern from several quarters about the composition of the board. In particular, in the second half of 1996 the Forest Act (1991) was amended giving the Minister of Forests absolute power to select, appoint and dismiss members of the Board. This resulted in the removal of NGO representatives, and their replacement with timber interests.

This action was deemed serious enough for the World Bank to cancel its Structural Adjustment Programme (SAP) loan to the country.

By late 1996, the government had backtracked on the amendments, saying they were void as they had not been certified by the Speaker or published in the Gazette. Thus the earlier 1991 Act remains in force.
However, the new Plan confirms the intention to proceed with the acquisition of forest resources and their long term management. This acquisition will be by way of a Forest Management Agreement (FMA). The owners will guarantee rights of access to the Forest Authority for the management of the forest, including harvest and the construction of infrastructure. The FMA would also set out the returns due to the landowners.

Forest resources on state land or under an FMA have strict guidelines before any permit can be granted for the harvest of timber, including feasibility studies and expressions of interest from potential investors.

The new Policy emphasises that no permit will be granted until an environmental plan has been prepared and approved by the Minister for Environment and Conservation. Previous policies did not require this and to date many companies continue to operate as though nothing has changed.

A key aim of the Policy is to maximise the amount of onshore processing, and to develop the forest industry into a major source of regional development. To this end, the Policy includes the State Purchase Option, and the establishment of a separate State Marketing Agency, which producers can also access. The State Purchase Option allows the State to purchase up to 25% of annual log export quota.

The Policy allows for the setting of royalties and taxes. To date this has also been a cause of unrest. In early 1996 the government introduced a system of royalties and taxes. The government was to receive the taxes and the landowners the royalties. The objective was to increase the returns to the country as a whole from its forest resources whether sold as logs or otherwise. The result was for both parties to receive significantly higher returns, particularly when log prices are high. The tax part was duly imposed, but the royalty component of the package was not implemented.

There is suggestion that the delay in imposing the royalty payment has been due to pressure from the timber industry.

In spite of rhetoric from the timber industries that the new taxes and royalties would cripple the industry, log export volumes were increasing in 1996 compared to 1995.

The new Policy provided for the development of research and training for the forestry sector. The development of the research technology and the human resources are essential if Papua New Guinea is to be successful in its goal of achieving sustainable forest management.

Priorities for research include management of the existing forest resource, harvesting techniques, the ecology and management of the forests, downstream processing of forest produce, and the management of minor forest produce.

Key constraints which must be considered when initiating development programmes include the rugged nature of the land with considerable areas at high altitude and remote from existing infrastructure; cultural and language diversity; skilled labour shortages; limited infrastructural development to date; and the customary ownership of the land and forest resources.
In spite of these constraints, progress is being made and must continue. In particular, there is a need to focus on resource assessment, improving returns from the existing harvest from the forest including a greater focus on downstream processing, identification and protection of conservation areas and developing the human capital required for this work.

**PNG - Summary**

The new Forest Policy is a major improvement over the policies it replaced. It takes a more comprehensive view of the forest resource than was previously the case.

In particular it now comes from a position of considering a sustained yield from the forest, and to a lesser extent considering sustainable forest management in the full sense of the concept.

However, there are concerns about how the Policy is implemented, and the ability of government to work in the best interests of the country and the people who own the resources. The fact that there are a large number of tribal groups and that the forest resource is almost entirely owned by those tribal groups does not make the task of achieving sustainable forest management any easier.

Papua New Guinea could be considered to be in a fortunate position in regard to its forests. While there has been, and continues to be unsustainable harvesting of timber, the extent of the resource still remaining is such that there is a very real potential to have a significant, sustainable forestry sector into the future. Whether this comes to pass will depend upon not only the rhetoric contained within the Forest Policy, but more importantly the commitment of government to implementing and improving on the principles of the Policy.

The new Policy has been active for several years now and the results are mixed. The difficulty of dealing with the complicated institutional framework set out in the Policy is showing in some situations. Of greater significance is the indifferent signals coming from government as to how important they consider the whole issue of the long term sustainable management of the nation’s forest resource.

**Towards 2010**

In looking ahead one of the key issues to be considered is the difference between sustainable yield and sustainable forest management. In the past the forestry sector internationally has focused on the long term flow of wood from the forest resource. This concept has been encapsulated in the Forest Policy of Papua New Guinea, rather than the more holistic (and more vital) concept of sustainable forest management, which considers wood as only one of the products the forest provides. The others include water supplies, non-wood forest products, environmental and social benefits, wildlife habitat and an existence for some tribal people.

In today's world it is essential that forest policies take this more holistic view if they are to be successful in the long term.

In addition to this important structural matter, there is a need to implement many of the components of the Policy. As has been seen recently there is are major problems in
implementing even basic reforms. Reforms and improvements in the areas of research, training and enforcement are required so that Papua New Guinea controls the future of its forest resources, rather than having their future decided by outsiders with vested commercial interests.

In particular, the country needs to examine ways of increasing the value of its exported forest products - not simply be a log exporter. As has been demonstrated elsewhere in the region, the expediency of a log export ban does not necessarily provide the desired result.

The current political problems within the country are simply a manifestation of a system that is fraught with internal problems. While the state of the nation remains in doubt, it is naive to think there will be substantial changes in forest policy.

**Implications of Inappropriate Action**

Of the countries considered in this study, Papua New Guinea possibly has the greatest opportunity to develop a long term, sustainable forest industry based on its still considerable natural forests. Failure to grasp the opportunity in the short term will see the potential evaporate rapidly, as the quantity and quality of remaining forests decline.

Involvement and education of local people as owners and beneficiaries of the forest resource is central to sustainability. The population is small relative to the size of the country. This provides a window of opportunity to develop sustainable forest management practices, without the pressures faced by many of the other countries, resulting from large populations.

The interests of the country are not well served by short term strategies that over-cut or degrade the forest as a whole. A long term view must be taken, with special emphasis placed on the accountability of government, and protection of local peoples’ rights. If this does not occur, people take the short term view to maximise their short term gains at the expense of long term opportunities.
PHILIPPINES

General

Fact Summary

The Philippines is a democratic republic ruled by a President. Election of the President and Vice President is by election every 6 years.

Geography, Climate and Population

Spread from 5° to 20° north of the equator, the country has a total area of 300,000 square kilometres, and contains over 7,000 islands. The greatest distance from north to south is 1,854km, and from east to west is 1,107 km. The Philippines lies about 100 km from the coast of mainland Asia. Most of the land is mountainous with volcanoes throughout the country.

The climate is hot and moist year round, but is cooler in the highland areas. It is hottest from March to May.

The population of the Philippines in 1995 was 70 million. This is projected to increase to 94.5 million by 2010 and to double in 30 years.

Economy

The increasing political stability of the country is fuelling significant growth and business output. GNP per capita is US$ 1130 (1996). Forestry as a contributor to GDP has declined significantly from 12% in 1980 to less than 1% in 1994. Other major industries include manufacturing - about one third of GDP - and agriculture.

Adverse natural events, including the eruption of Mt Pinatubo and a major drought, have, however placed strain on the economic performance recently.

Forests

The forest area of the Philippines is estimated to have declined from 12 million hectares in 1960 to a current level of about 5.7 million hectares (which includes less than 1 million hectares of virgin forest largely confined to very steep and inaccessible areas). It is difficult to obtain accurate land use data as all areas over 18 degrees of slope are classified as forest regardless of whether any tree cover is present. The official figure of forest area is about 33% of the land area. As indicated above, this is not supported by other data.
Harvests have reduced from 6.4 million m$^3$ in 1980 to 0.8 million m$^3$ in 1995. The reduction has been the result of a number of factors including a Government ban on the export of logs in 1986, a ban on the export of timber in 1989, and a Forestry Master Plan introduced in 1991 banning the harvest of virgin forests. This level of harvest looks set to continue in the foreseeable future. However this harvest level is inadequate to support domestic demand and the country has moved from being at least self sufficient to being a net importer of logs and lumber.

Most remaining virgin forests have been given protected status, but many of these areas are in critical condition and remain threatened due to inadequate protection resulting from lack of funds and lack of political will.

Apparent roundwood consumption has fallen dramatically in the past decade giving credence to the possibility of the country’s forests being close to economic extinction.

In spite of these bans the rate of deforestation remained at about 150,000 hectares in the 1980s. Deforestation is caused by shifting cultivation, landuse conversion, forest fires, illegal logging and 40 million m$^3$ of fuelwood harvested each year. Fuelwood demand continues to be strong, further exacerbating the critical position the forests are in. Fuelwood harvesting is believed to be seriously impacting on the remaining commercial forests.

In spite of this rather gloomy picture there are also some success stories. A total of 1.4 million hectares of plantation forest has been established with the Master Plan aiming to have additional plantations of about 3 million hectares by 2015, although this goal may be difficult to achieve.

**Forest Policy**

**History and Trends**

The history of forest policy in the Philippines can be divided into 4 main periods: a period of low exploitation during colonial, wartime and postwar eras; a period of increased exploitation for development during the post-independence era; a peak of logging and concession exploitation during the 1960s and 1970s; and one of building a forest products industry in the 1970s and 1980s.

The first period was largely dominated by Spanish Royal Decrees which focused on gaining revenue and keeping the Spanish navy supplied with timber. The population was small and thus pressure on the timber resource was limited.

Following the take-over of the country by the United States in 1898, the American Congress enacted the first Forest Act in 1904. This was to form the basis of forestry legislation until 1975.

The second period coincided with independence (1946) and the need to develop the country and its economy. The new constitution provided that all timber lands belonged to the state.
Forest policy did not change much but greater emphasis was placed on the production of timber. This meant more revenue to the government, much needed to accelerate development.

This period also saw the change to modern mechanised technology and hence the ability to have a major impact on the forest over a large area. Also introduced was the application of selective logging of the dipterocarp forests. Prior to this development, logging occurred without much concern for any future harvest from the forest.

The third period was the peak period of exploitation of the Philippine forests, starting in the early 1960s. Harvests from the forest rose rapidly with little concern for long term sustainability of this harvest. The impetus for this “rush to destruction” came from three sources. The large multi-national logging companies were able to make enormous profits from the continued growth of harvesting volumes, often in association with local business people; the almost insatiable demand for logs from Japan in particular; and the government. The government almost took pride in the ever-increasing harvest which meant more foreign exchange and increasing revenue. By 1969, forest products constituted 33% of total export revenues, while at the same time local and international foresters were warning of the inevitability of the harvest diminishing if there was not a significant change in policy.

Ironically much of the revenue was being used to provide agricultural lands for rural populations who had no other way of making a living.

The fourth period saw a move towards a local forest products industry. During the 1960s and 1970s, as much as 80% of the recorded log production was exported as logs. Processing into lumber and plywood was almost seen as a residue industry.

In 1975 the government began a rationalisation programme for the industry, part of which required concession holders to do some processing. The other major component was a ban on log exports. These two components had what in hindsight was a predictable effect. A number of small, generally inefficient mills were built and grossly under-utilised, simply to comply with the new rules, while at the same time the companies continued with what they were good at and which was very profitable - exporting logs.

In 1979 a further attempt at restricting unprocessed log exports was made, with similar effect, and again in 1980 a proposed total log export ban was postponed indefinitely. It is said that large scale graft and corruption in the public sector contributed a great deal to the failure of attempts to control the harvest of the forests and the subsequent processing of logs.

To exemplify this was the banning of logging in three regions in 1985, which should have resulted in saving about 500,000 m³ of timber for the next two years’ harvests. It is generally believed that the savings did not materialise because of rampant timber smuggling in banned areas.

**Current Forest Policy**

A major turning point in the history of the country and of forest policy was the democratic elections held in 1986, and the end of martial law and Presidential Decrees which had
dominated life and policy development until this change. Key changes are highlighted below with regard to decentralization, resource tenure and forest development.

Decentralisation

The new form of government looked to implement a range of changes including decentralisation of powers and much greater involvement of the people in decision making. The office directly responsible for administration of forest lands is the Department of Environment and Natural Resources (DENR). The legislative process includes open debate by elected representatives and public hearings to discuss proposed legislation. As in most countries the government department responsible for a portfolio has traditionally taken the lead in the development of new policy. Changes are beginning to show in this area also with much greater input being encouraged from NGO’s and other interested groups.

The decentralisation process to involve the 200 regional, provincial and community offices has resulted in much more robust discussion of policy matters, and much more robust policy.

Resource Tenure

Many of the problems associated with the past large scale destruction of the forest resource can to some extent be traced back to a combination of land and concession tenure issues, and lack of ability or will to enforce the requirements of the concessions. In the situation where a short term concession is held or there is no long term security of tenure to land, there exists a clear economic signal to extract as much benefit as possible in the shortest time possible for the least cost, and to ensure no long term obligations are entered into.

This was exactly the case in the Philippines where the government held title to all forest land (effectively by decree) and was open to the graft and corruption which reportedly became rampant prior to the elections in 1986. Rural land users had no title and thus lacked any incentive to consider the long term sustainable output from the site. In fact to exacerbate matters they were not permitted to make commercial use of the wood and non-wood forest products, except with permission from the government.

From this it is evident that in common with many other countries, there is an urgent need to address the issue of land tenure in relation to the rural people and their rights to use the land and forest resources. Much of the post-1986 policy development has been developed with this matter in mind, with ongoing reforms to tenure issues. With consent from government, private individuals and entities may use forest land for traditional forestry purposes, pasture, agriculture and other pursuits under short term permits and long term leases. In upland areas, occupancy is legitimised through issuance of Certificates of Stewardship Contracts (CSC) which grant a 25 year tenure, renewable to 50 years. The grantees can receive assistance in agroforestry development and are encouraged to plant trees on at least 20% of the land they occupy.

Licences to exploit natural forest are covered by 25 year Timber Lease Agreements, designed to encourage greater compliance with the requirements of the licence. These terms include the requirement to replant some areas in trees following harvest for a subsequent crop from the land.
Forest Development

A Master Plan for Forest Development (MPFD) was formulated in 1990. A new set of regulations, including a draft of the Forest Code, a National Integrated Protected Area System Act, and an Environmental Code have been introduced to conserve the forest resources and address the problems of environmental degradation.

Pursuant to the MPFD, approximately one million hectares of residual logged-over forest has been targeted for management under the Community Forestry Programme over the next 25 years. This programme aims to involve local communities in the management of the forest resource and to encourage the large companies to focus more on processing of the products produced by the community projects.

In 1992 a complete ban on the logging of the remaining old growth forest was introduced. From that date all timber production was to shift to residual forest areas. Concurrent with this ban, all old growth forest, national parks and other protected areas are to be placed under an Integrated Protected Area System (IPAS), with the aim of preserving biodiversity and environmental values. Included in the IPAS is management to ensure no exploitation or occupancy of the areas and the proposed management regime for buffer areas to the actual IPAS.

Corporate sector involvement in the growing of industrial plantations is also encouraged through the Industrial Forest Plantation (IFP) Programme. The government, having recognised the need for an ongoing supply of forest products, has accepted that these will have to increasingly come from plantations rather than the natural forest estate. This is not to suggest that the natural forest will not continue to be a major source of forest products, but the reality is that there is a need for intensive management of all forest resources to meet the substantial demand that exists.

The IFP grants leases over large areas of denuded land for 25 years, renewable to 50 years, to private entities at minimal rates for the establishment of plantations. Investment costs can be written off as expenses. Forest charges are levied on timber harvests at rates much lower than those prevailing on harvests from natural forests. Plantation produce can be exported in raw or processed form, whereas produce from natural forests can only be exported in a processed form.

Rattan is given special consideration in the development of forest policy due to its importance as an export earner and importance to rural people. Rattan furniture accounts for about 30% of export earnings from the forest industry.

The new forest policy gives priority to tribal communities in awarding of rattan-gathering permits. The philosophy behind this is to increase the returns to the tribal communities by pressuring the rattan using factories to negotiate directly with the tribal gatherers, rather than a series of middle men. The desired outcome of this process is higher returns to the tribal people, who in turn will value the rattan higher, and thus will have a direct financial incentive to ensure careful, sustainable management of the resource. In addition to this approach, there are now mechanisms in place to assist tribal groups to become rattan processors in their own right.
Philippines - Summary

In recent times the most significant change has been the end of martial law and the election of a democratic government. While problems such as graft and corruption do not instantly disappear there has been progress in this area. This flows throughout the forest policy area in that government reforms are more likely to be implemented. The thrust of the policy reforms has been to:

- involve the people affected by decisions in the decision making process to a much greater extent;
- address the pressing problem of land and forest resource tenure. By giving certainty of tenure resource users are encouraged to manage the resources in a sustainable manner with the knowledge that what they do will impact on their own future;
- provide encouragement and assistance for community based development of forest resources, while at the same time ensuring that there is a place for the large companies which can provide the necessary capital;
- protect the remaining virgin forest areas, and provide greater protection to remaining residual forest areas for long term wood production;
- encourage the development of plantations to supply future wood needs. This encouragement includes tax incentives and exemptions from export restrictions.

Towards 2010

While considerable progress has been made this must be seen in context. The Philippines has moved from being a major exporter of wood in both raw and processed form to a country facing a significant shortage of supply.

The recent changes in forest policy conform to the increasing recognition that government decree and bureaucracy cannot achieve sustainable forest management, and it is only through and by the people who are affected that a long term solution can be found. The “people-oriented” approach is expected to continue to be the focus of policy reform.

In particular, consideration should be given to addressing the following:

- The capture of forest rents and royalties: there is need for further reform, with records to be made fully auditable. Without the ability to audit the result, there is little confidence in the outcome from any party, and the system is left open to the plague of corruption that has existed in the past.

- Greater education and enforcement of compliance in the area of forest conservation: simply prohibiting the harvest of forest products (wood or non-wood) does not cause the activity to cease. There needs to be greater education as to why these steps have been taken and greater enforcement to ensure they are obeyed. The education process in many cases will require exploration of alternative sources of supply or income for the people involved.
• Re-examination of government policies that encourage the destruction of forest resources for whatever reason: agricultural production is the main concern here\(^2\) and reform should promote improved use of land rather than simply relying on being able to clear more land.

• Research to define the forest resources remaining and to show how best to manage them for the multiplicity of goods they are expected to provide: this research need includes such fundamental matters as forest ecology and management techniques, through to the need to understand the economic and sociological forces at work in the country. This complex web of dependency of rural communities on the forest needs to be understood and incorporated in policy initiatives.

Policy reform needs to take the people with it rather than be thrust upon them. As such the initiatives already taken to develop community based forestry programmes are the blueprint for future developments.

The country is unlikely to be able to complete all these tasks in isolation. It is thus imperative that expert assistance is sought to complement the work of internal agencies. The issue of sustainable forest management is not one that the Philippines must face alone. It is indeed an issue of international importance. To find satisfactory solutions to the complex problems being faced requires a spirit of cooperation, assistance and collaboration.

\(^2\) Destruction of mangrove forests for fish ponds has also been a major cause of forest destruction to date.
THAILAND

General

Fact Summary

Thailand is a constitutional monarchy headed by the King who has an advisory role as head of State. The Prime Minister heads the government. House members are democratically elected every four years. Thailand is the only nation in South East Asia that has never been ruled by a western power.

Geography Climate and Population

Thailand covers an area of some 514,000 km², divided into four main regions. The country’s greatest distance from east to west is 772 km, and from north to south is 1,770 km. The climate is tropical, with three defined seasons - a hot, dry spring, a hot, wet summer, and a mild winter. There are heavy rains throughout the country from May to October, with the south-west monsoons.

The 1994 population stood at 57.6 million people and is projected to rise to 66.7 million by 2010. The time taken for the population to double is currently 50 years.

Economy

Thailand’s economy is one of the fastest growing in the world for the last decade, with GDP growth averaging above 10% per annum for 1987 to 1991, and above 8% for 1992 to 1996.

The major components of the economy are (as measured by contribution to GDP):

<table>
<thead>
<tr>
<th>Industry</th>
<th>11.4%</th>
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<tbody>
<tr>
<td>Agriculture</td>
<td>3.6%</td>
</tr>
<tr>
<td>Services</td>
<td>9.2%</td>
</tr>
<tr>
<td>Other</td>
<td>75.8%</td>
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</tbody>
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Notwithstanding recent problems, the Thai economy demonstrates the strength of a free market environment in generating economic growth. The very rapid growth in recent years has created bottlenecks in physical infrastructure, skilled labour shortages and a large middle class which wants progress towards democracy. The rapid development to some extent has been at the expense of natural resources including forests.
Forests

Productive hardwood forests were estimated at 4 million hectares in 1980 and only 0.5 million hectares in 1990. As a result of this rate of destruction, in 1989 the government banned all harvesting of timber from the natural forests in an attempt to protect what is left. However conversion to food production continues as does uncontrolled fuelwood removal.

Forest cover is estimated to be about 27% of land area but only limited areas of this have any productive potential in terms of wood. Most of the remaining forests are in relatively inaccessible remote areas. They consist of evergreen montane forests (*Dipterocarp spp.*), mixed deciduous monsoon forest (teak) and dry dipterocarp savanna forest in remote mountain valleys. Valleys and plains are totally cultivated.

Additional evidence of the decline in domestic forestry production is provided by domestic lumber production. Between 1990 and 1994, production fell by 36%. During the same period, lumber imports rose by 59%.

The government has embarked on a series of initiatives to encourage protection of remaining forest and to encourage private sector involvement in the development of plantations. Reforestation is small when compared to demand and to the areas deforested. The species used are mainly fast growing hardwoods. The Forestry Department has a goal of 21 million hectares of forest land including plantations. At current rates of progress this will take about 200 years (assuming no further conversion of forests to agriculture - a concept which appears very unlikely at present).

Several investors including offshore groups have attempted to establish plantations of fast growing eucalypts to meet the demand for pulpwood. All report very limited success to date.

Processing operations rely on rubberwood plantations, imports of logs and lumber (both legal and illegal), and illegal domestic harvesting. The ban on domestic harvesting has made Thailand a major importer of wood to supply its booming economy and existing processing capacity. Rubberwood utilisation is high in Thailand at about 83% of the available resource. This use of rubberwood has replaced the more traditional hardwoods and now makes up 70% of exported furniture volumes. The 211 rubberwood mills in Thailand consume 1.2 million m$^3$ per year.

Fuelwood gathering is significant and may contribute to deforestation. The use of fuelwood on a per capita basis is higher than the rest of South East Asia. FAO reports that fuelwood consumption is about 35-40 million m$^3$ annually with an increase in usage of 4 million m$^3$ per year predicted by 2010.

Forestry Policy

Policy development in Thailand has three recognisable periods. The first, up to 1932 was under the absolute monarchy system. The crisis period is considered to be from 1932 through to 1956, while the third to the present is the modern period.
Like almost all countries (with New Zealand as an exception in that there was development of plantations to offset the losses of natural forest), the early period of forest development consisted of exploitation of the natural forest with no regard to long term sustainability matters. Little was done to formulate policy as little need was seen. A Forest Department was established and perhaps the most far reaching decision was to vest all forest land in the King. Several other reforms included the introduction of a teak management system and the initiation of forestry training.

The period from 1932 saw the introduction of the Forest Reserve Act and the Forest Act. Subsequent Acts were either supplementary or amendments to these. These Acts were modelled on the British management system being used in neighbouring Burma (Myanmar). These Acts focused on the needs of the government and not of the people. In fact, in the case of reserves, they could be gazetted but could not be de-gazetted even if it was shown that de-gazettal would benefit the people. People occupying land without official title (i.e. all the rural poor) had no rights to the land.

This has created some of the problems faced today where people with no legal access to the land they need for their subsistence simply encroach into reserves with little or no interest in the long term protection of the forest. Today most reserves previously set aside have been destroyed or severely degraded by this process. As the population grows, the problems are compounded. When many of the reserves were set aside the country’s population was about 10 million, resulting in little competition for forest land. With today’s population of around 60 million, the competition is intense.

The start of the modern era saw the training of foresters abroad and the initiation of the country’s first full scale inventory. The use of the concession system was reintroduced in 1965 with control to be spread over a number of stakeholders. In reality the loggers and the Forest Industry Organisation had control. The forests were rapidly over-cut and degraded.

In 1975 access to nearly 75% of the forest was limited, officially to protect the forest but probably also to curb insurgency. The insurgents encouraged the continued cutting of the forest, partly to fund their activities. However after the major floods of 1988, the government cancelled all concessions.

Forest policy in Thailand has never been well coordinated, with definitions sometimes in conflict. The four major laws are hardly related and their implementation has been ineffective. The result of this lack of unified and planned approach to the management of the forests may be a contributory factor to their almost total destruction as an economic resource. It is generally understood, however, that forest loss has been driven mostly by land clearing for rice and tapioca cultivation - developments for which there were significant policy incentives.

In an attempt to unify forestry policy in Thailand, the Forest Department established a committee in 1982 to draft a National Policy. The process was detailed with extensive public hearings and input. The Policy was approved by Cabinet in 1985. This Policy covers most aspects of concern in forestry. The general scope of the policy is described below.

The policy seeks to establish long term coordinated management of forest resources alongside other natural resources. Within the concept of management there exists the concept of
perpetual benefits to the people, maximising national social, economic and environmental benefits, while at the same time ensuring national security.

The National Forestry Plan will be an integral part of the National Social and Economic Development Plan. This is seen as part of an overall economic development programme of which forestry is a part.

Within the Policy there is recognition of the need to retain forest for the protection of soil and water resources. This requires management of issues such as fires, shifting cultivation and forest clearance by rural people.

Other sections of the Policy deal with research, education, enforcement of forest law, efficiency of timber production and control of corruption. This last point may be the Achilles Heel of the process if not well controlled.

Reforestation and afforestation are seen as important initiatives required to supply future wood needs. This part of the Policy encourages the private sector to become involved in tree planting projects for both domestic and export supply. There is even recognition that wood energy substitution for fossil fuel could reduce the country’s dependency on oil imports.

It should be noted that while the Policy addresses many of the wood-related issues facing forestry, it is light on the non-wood and non-commercial timber issues. Non-wood and non-commercial wood matters are uppermost in the minds of those who rely on the forest for their daily resources. In particular the issue of fuelwood is of considerable concern given the volume consumed and the impact its collection can have on the remaining forests, and on the daily lives of those involved.

The Policy must also meet the requirements of other sections and goals of government. These include the mining sector, the need for national security, the rapid expansion of the construction industry, and supporting the furniture industry. In general this results in conflicts of objectives and interests. For example the furniture industry requires a supply of quality logs while at the same time the government has banned logging of natural forests. This encourages either the import of logs or lumber or the illegal cutting of the local forests. In reality both occur and thus work against the stated policy aims of government, namely protection of remaining forest and reducing the need to import resources.

The actual document is weak in terms of coordination and clarity. In addition there are some important omissions and there is a lack of priority setting.

Land tenure, as in most countries with a traditional tribal population, is an issue to be addressed. In Thailand, large numbers of rural landowners have a recognised title to their land, but in addition, some estimates put the number of illegal landholdings at over 2 million in forest reserves. This creates the usual dilemma - the desire to protect the forest versus the well-being of the people trying to make a living from the land they occupy. These issues are not simple to resolve and will not go away either. In fact they become progressively harder to resolve the longer they are left.

Security of tenure is a key parameter in the drive towards efficiency of land use and to achieving sustainable management of forest resources. Without security of tenure it is difficult
at best and generally almost impossible to encourage land and forest users to consider the long term. A key doctrine of conventional economic wisdom is that the stakeholders must have a significant share in the outcome in order to justify the investment in inputs. Until they have secure title to their land they will only invest in short term projects, which by definition precludes thoughts of sustainable management. Indeed the opposite is more likely where the forest is seen as an impediment to economic development, usually in the form of agriculture.

There is further conflict between various government agencies, which increases the pressure placed on the forest resource. For example the agency responsible for agricultural development and settlement of rural people sees the forest as an impediment, as do the agencies responsible for public works and infrastructure development.

In spite of statements to the contrary, current Forest Policy appears to be more focused on the immediate issue of forest protection than the longer term issue of sustainable development of forest resources. Contemporary thinking holds that protection of the forest is more achievable if the stakeholders can see the benefits that forest protection can provide them. The concept of protecting forest resources for their intrinsic values is more associated with educated urban people (often from other countries) who do not rely on the forest or the land it occupies for their daily existence.

Overall, the result of this focus is that the Policy is not achieving the stated objectives as there is opposition to it, both deliberate and unintentional, and there are insufficient human and financial resources to fully implement it.

Towards 2010

In order to advance the cause of sustainable forest management, several important issues require addressing. Like all countries, Thailand must develop a forest policy and associated legislation in conjunction with a raft of other policy initiatives. Forest policy cannot survive in isolation. Consideration must be given to an holistic approach to land and forest resource management which provides for the needs of the people while at the same time ensuring the long term sustainability of the resources.

The approach taken can vary with circumstance, but some fundamental principles apply including: the active participation of all stakeholders and the principle that all concerns should be listened to and acted upon (failure to do this results in an “us and them” situation in which the “losers” refuse to accept the decisions taken); equity for all and honest, open, auditable process of policy development; security of tenure (to provide an incentive for resource users to consider the long term effects of their practices and whether they are sustainable); provision of alternative options from which economic wealth can be created (including alternative wood and non-wood resources and alternative methods of utilising them).

Associated with all this is the urgent need for research into all of the issues facing the forestry sector. Forest ecology and management, economics, sociological impacts, soil, water, environmental and ecological protection issues, are but a few of the matters to be addressed. In common with other countries, there is an ongoing need for education and training both within the forestry sector and with the wider population.
Even with the best will in the world in formulating and implementing a policy and the associated legislation, there will always be a requirement for surveillance and enforcement. This can only work in the long term if the underlying policy and law being enforced is equitable and just.
WESTERN SAMOA

General

Fact Summary

Western Samoa is ruled by a King as a Constitutional Monarchy. The King holds office for life. When he dies, the Legislative Assembly will elect a head of state for a five year term.

Geography Climate and Population

The country consists of two main islands with a land area of 283,100 hectares. These small islands are located in the Pacific Ocean at latitude 14° south. The climate is tropical and humid, but the Southeast trade winds make it mild. Temperature is constant between 24-29°C, and rainfall varies from 1,800 - 3,800 mm/annum.

The population in 1994 was 164,000. It is experiencing a high growth rate albeit from a very low base. Doubling time is estimated to be 28 years and the population is projected to have reached 192,000 by 2010. However overall population growth tends to be low due to emigration. Education standards are generally high which helps facilitate emigration. Over 50% of the population live in rural villages, most of which are located along the coastal margin.

Economy

The country has very limited natural resources and a continuing large current deficit. Major exports are agriculturally based and these have suffered considerable decline in recent years. To add to the problems, cyclone damage to subsistence and commercial crops has been high in recent years. About 70% of the people are farmers. GDP per capita is US$980 in 1993.

Like most of the Pacific Island countries, Western Samoa is heavily dependent on foreign aid, and on funds remitted home by islanders living in other countries, especially New Zealand and the USA.

Forests

The natural vegetation of the islands is rainforest. In 1992 the forested area of the country was estimated as being 47% of land area. Total roundwood production was 131,000 m³. Some small plantations are being established to supply both local industrial wood and fuelwood. About 80% of land remains under customary rights where the local village owns the land. This is in contrast to most places colonised by Europeans where customary rights were alienated.
The major crop grown is coconut and significant areas of land that were previously forest now support the crop. The use of the old coconut trees for timber has been investigated in the past.

The increase in agricultural land is closely correlated with population growth (and of course removal of the natural forest) and increasing production of agricultural crops for export. In many cases the forest is cleared to plant taro (a vegetable crop) and is then turned to coconut.

**Forest Policy**

Over 70% of the land in Western Samoa is held in customary ownership. Thus any forest policy must be cognisant of this factor. In addition there are few if any commercially viable natural forests remaining on the islands.

A start was made in 1992 on developing a National Forest Policy which set out the goals, plans and strategies for the development of the forestry sector. A principal focus of this work is to be able to strengthen the sector and seek donor assistance and national funding. The key areas the Policy considers are reforestation, training, watershed protection, conservation and agroforestry. Various aid assisted programmes are underway as a result of this work especially in the areas of reforestation and agroforestry.

Another achievement that has come from the Policy development work has been the Watershed Protection and Management Regulations (1992). These created a better legal framework and coordinating mechanism among the various agencies involved in this important area of work.

A complete National Ecological survey finished in 1992 identified 14 sites for conservation of biodiversity in coastal lowland areas. Development of agreements with villagers for the conservation of these areas continues on from this work.

The forestry sector is attributed low importance in the country due to a combination of physical and economic features, including the incidence of hurricanes, the limited amount of land available, the dependence on fish and agriculture, and the shortage of skilled people. As a result the intensity of planning and development of the forestry infrastructure is low.

**The Future**

The pressures of growing populations with increasing aspirations, as well as political and economic forces driving deforestation, must be addressed.

A customary tenure system and strong control of local resources, while often assumed to favour improvement in management of forest resources, can present their own challenges to conservation of forest ecosystems. In Western Samoa the intricate political system, in which families vie for status and power, is tightly woven with a flexible customary land-tenure system. Cooperative efforts that are necessary for local forest conservation are not favoured by the competitive aspect of the local system. However, conservation efforts might build on
another aspect of the social system, namely their strongly developed sense of social cohesion and responsibility.

Local leaders and land managers must be convinced of the value of forest conservation for it to be accepted. In particular they must be convinced that the forest is worth more to them intact in both the short and long term. In the case of a country like Western Samoa where the forests have limited wood values and are not required to protect the soils from erosion, and the soils have good natural fertility, this is not an easy task. Indeed the ultimate solution may lie in convincing these people that the forest has an intrinsic or existence value which is greater than other values.

To a greater or lesser extent this may require the involvement of the international community as they are equally the recipients of the existence benefit as the local people.

Failure to respond to the pressures will result in further degradation of the natural forest resource, and ultimately greater reliance of the people on imports of forest products. Unfortunately, it is the non-wood and non-commercial wood products that face the greatest threat, as generally these cannot be imported, or cannot be imported economically.

Pressure on the forest in Western Samoa is not the most pressing or threatening issue. It is, however, one which must be addressed.
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