ASIA-PACIFIC FORESTRY SECTOR OUTLOOK STUDY
WORKING PAPER SERIES

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Country Report - Papua New Guinea

by

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

This report comes under Workplan Number C16.

INFORMATION NOTE ON ASIA-PACIFIC FORESTRY SECTOR OUTLOOK STUDY

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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INTRODUCTION

Papua New Guinea is endowed with vast natural forest resources. These resources are being developed by the Government to enhance the economic and social advancement of the country. This development is being pursued within the broad objective of sustainable forest management.

In the forest sector, the Papua New Guinea Forest Authority (Forest Authority) intends to achieve sustainable forest management[1] by developing the sector along the lines set-out in the Provincial and National Forest Plan as outlined in the country's *"1997 - 2002 Medium Term Development Strategy"*.

Within the broad objective of sustainable forest management, the Government will, through the Forest Authority, manage the forest resources of the country on behalf of the people for a broad range of commercial and non-commercial benefits for present and future generations. This will involve implementing the following policies and programmes:

- to undertake regular forest resource inventories and produce a national forest type classification;
- to acquire and maintain management rights for the country's commercial forest resources, utilizing Forest Management Agreements wherever possible, to ensure the sustainability of the resource;
- to effectively control and monitor harvesting and export operations to ensure compliance with the Forestry Act, 1991 (as amended) and associated Government policies and guidelines;
- to promote resource owner participation in the management and utilization of forest resource;
- to provide advice to Government and potential investors on timber species and utilization options;
- to undertake research programmes and data collection activities which are aimed at developing the knowledge base for sustainable forest management and reforestation;
- to promote the introduction and management of a forest revenue system that provides for fair returns to landowners, industry and government, and provide for adequate funding for the efficient operation of the Forest Authority;

[1] Sustainable forest management is defined by the International Tropical Timber Organization (ITTO) as *"the process of managing permanent forest land to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment."*

- to promote and facilitate sound natural forest management and plantation development and, through this, to promote rural employment opportunities;

- to promote, through public awareness, an understanding of the multiple uses and values of trees and forest resources for income generation and livelihood;

- to enhance organizational development through the optimum use of human resources of the Forest Authority;

- to promote an effective marketing strategy in order to obtain maximum returns from the exports of timber and timber products;

- to promote increased industrial wood processing to create employment opportunities;

- to plan for adequate wood supplies to underpin a viable domestic processing industry to supply local and international markets;

- to promote uses of other forest products alongside the development of timber; and

- in collaboration with the Department of Environment and Conservation and other agencies, to identify priority areas that have significant environmental and ecological values which need to be protected.

STATUS OF THE FOREST SECTOR IN THE NATIONAL CONTEXT

The forest sector

The Papua New Guinea forest sector is recognized as a distinct sector within the Papua New Guinea economy. Forestry policy is directed by the Ministry for Forests and the sector is administered by the Forest Authority. This statutory authority was established following a major Commission of Inquiry during the mid eighties which discovered major corruption and malfeasance rife within the industry.

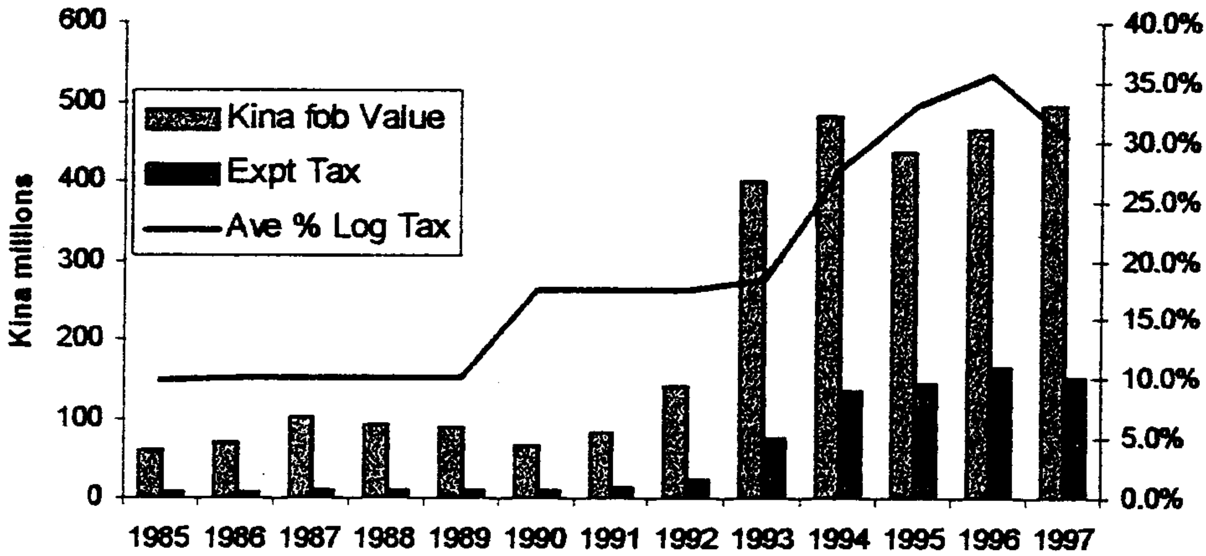
Contributions to the national/local economy

The forestry sector makes a major contribution to income and employment. For example, a table showing the composition of government revenues from harvesting levies is presented below in Table 1 and the total foreign exchange earnings from log exports compared to the log export tax paid is shown in Figure 1. The forest sector also employs about 7,500 people, representing approximately 4 percent of total formal employment.

Table 1 - Source of revenue from harvested logs

Revenue Item	1994 (km)	1995 (Km)	1996 (Km)	1997 (Km)
Log export tax	141.0	138.2	148.9	150.7
Reforestation levy	3.5	2.6	2.8	3.2
Royalties	18	12.1	20	32.3
Other landowner levies & premiums	22	19	21	25
Total	189.3	174.9	198	211.2

Figure 1 - Annual revenue from log exports



In many cases, logging companies are also responsible for providing infrastructure and welfare services to the landowners (i.e. local communities). In general, most companies have a poor record of meeting these obligations. Typically, buildings have been cheaply constructed from untreated timber and most roads amount to nothing more than standard logging roads. On the other hand, natural forest resources are important for providing local landowners with subsistence supplies of food, shelter materials and fuelwood. In some cases, the loss of these resources following poorly managed forestry operations has caused some landowners to be worse off following logging projects than they were before. The implementation of a new Logging Code of Practice and new forest revenue system will go a long way to addressing such problems.

Appreciation of contribution by forest sector

There is a general level of understanding of the broad range of benefits which natural forests can provide for the long term welfare of local people. However, where there is a rush for *development'* and *monetary reward* many *of* these benefits tend to be ignored. This happened a lot prior to the Amendment of the Forestry Act in 1991, which now places much greater controls on the allocation of forest resources and required a sustainable level of log harvest. During the period prior to the Amendment there was a headlong rush throughout the country by landowners, under the Forestry (Private Dealings) Act (now repealed), to allow their forest resources to be logged at totally exploitive rates. This has resulted in the almost complete exhaustion of commercial forest resources in the New Ireland and West New Britain Provinces.

The benefits from such operations have not generally trickled down to the genuine owners of the forest and have not been sensibly invested to ensure long term economic development. It is only once the money has dried up that landowners have begun to appreciate the true value of their forest resources. With the new forestry controls and procedures administered by the Forest Authority, plus an on-going awareness programme, the forest owners are beginning to appreciate the value of their forest resources and show a greater interest and control over their use.

Main players in the sector

Despite the gains being made in resource owner awareness and involvement, at least for new projects, the existing forest sector is still dominated by large foreign logging companies. For example, three large Malaysian companies are responsible for over 60 percent of all logging activities. The other major players in the sector are landowner companies, which are generally not representative of the true forest owners and are often controlled by a few (often well educated) important businessmen and politicians. Many logging companies are able to use their financial strength to influence those in positions of power, both at local and national levels, to pursue their own self interests.

With the 1993 Amendment to the Forestry Act, the implementation of new Forestry Regulations (in the final stages of gazettal), the log export surveillance project and the development of stringent procedures (e.g. the Code of Logging Practice and Log Exporting Procedures), will give the Forest Authority much greater control over the forest industry than it had previously. However, such measures will face constant (and often concerted) political, resource owner and industry pressure for change. To date, a number of forestry conditions associated with the World Bank/IMF Structural Adjustment Programme have provided a countervailing force to these pressures, particularly at the political level, and have proven.

Key issues and constraints to be addressed in the short to medium term

Sustainable forest development

There is still of great concern that the permitted log harvest level remains above the sustainable level because of levels set and agreed before 1991. None of the existing forest concessions in Papua New Guinea are being managed on a sustainable basis. For example, instead of a 35 year harvesting cycle, most will be completely logged-out in 10-20 years.

To bring these concessions into line with the new legal requirements will require a substantial reduction in the permitted harvest levels, and probably for smaller concessions to be consolidated into larger areas. This is currently being tackled on two main fronts:

- As existing concessions come up for review or renewal, they are being renegotiated to restrict harvesting to the volumes which would be expected on a 35 year sustainable logging cycle.

- All new concessions are only granted with a sustainable annual harvesting volume.

Originally it had been planned to review all existing concessions promptly and to bring them quickly into line with the requirements of the 1991 Forestry Act (as amended). However, this proved to be legally difficult and a huge drain on the Forest Authority's resources so the process has been scaled back. Major problems identified as part of the process were that there are no clear mechanisms established for concession amalgamation and that there is strong industry resistance to any moves to reduce allowable harvest volumes. The whole review process was also hampered by the long delay in finalizing the new forest revenue system. Nevertheless, it is expected that all forestry operations within Papua New Guinea will be operating within a sustainable harvesting limit within 5 – 10 years.

Acquisition of timber rights

Land ownership in Papua New Guinea is vested with customary landowners who comprise a large share of the rural population. Previous Governments followed a policy of using the nations natural resources, of which timber is one of the few that is renewable, to bring development to the rural sector. For this to happen, however, the Government must first acquire or purchase timber rights from the customary owners.

Prior to the 1991 National Forest Policy and Legislation, timber rights were acquired by a process referred to as Timber Rights Purchase (TRP). Under this system, rights were acquired where at least 75% of the adult clan members of a land owning clan or group agree to sign the TRP agreement The rights acquired under this system were exclusively only for the harvesting of merchantable timber and did not transfer to the State or concessionaires the rights to manage the forest.

Under the current forest policy and legislation, the system for acquiring timber rights is facilitated through a process of incorporation of all the various land owning groups. It is a form of land registration under the *Land Group Incorporation Act*. A Forest Management Agreement (FMA) is then entered into between the registered land groups and the Forest Authority. The rights acquired under this system empower the State or a concessionaire to harvest and manage the forest in a sustainable manner.

The Forest Authority has started to apply the new acquisition system, but some major constraints and problems have already been encountered, including:

- The procedures for incorporating land groups is lengthy and, coupled with the lack of manpower assigned to this task in the Department of Lands and Physical Planning (DOLPP), the anticipated speed in land group registration has not been achieved. This slows down the acquisition process and subsequently slows down the development of the sector to a level below what is expected by the government.

- Incorporation of land groups can be conducted and presented to the DOLPP for registration by any person. Due to DOLPP understaffing, land group documents may not be adequately assessed for compliance and hence serious problems can arise for forest concessionaires during the development of the resource.

- Defining land boundaries is an extremely difficult task given the lack of proper documentation. This leads to many running land disputes which, on many occasions, have to be resolved using the judicial system.

In recognition of the manpower problem of the DOLPP, the Forest Authority is assisting the Land Registration Branch of DOLPP to expedite the registration of land groups in forest development areas. Assistance is provided in checking and entering the applications for incorporation, preparing letters for gazettal, sending copies of the gazettal notices to land groups and preparing Certificates for Incorporation to be signed by the Registrar. In addition, amendments will be introduced to shorten and simplify the *Land Group Incorporation Act*, to speed-up this process and be consistent with the understanding and knowledge of local landowners, many of whom are rural based and have little understanding of the current legal requirements.

Landowner companies

The landowner company (LOC) concept was developed as part of the 1979 National Forest Policy in order to increase national participation in the forestry sector. Since then the number of LOCs has mushroomed, with many having been issued with Timber Permits, supposedly to develop their own resources.

Whilst the concept is good in theory, the practical reality has not been so good. Most of the LOCs have been plagued by mismanagement, corruption, and in-fighting between different landowner factions. The result has been that most LOCs have become alienated from the people that they were supposed to represent most of the income of the LOCs has also ended up in the pockets of their directors and many have become linked to foreign logging companies.

The main reason for the above problems is a lack of education and business knowledge on the part of the majority of landowners. There have also been difficulties in successfully structuring the LOC's due to the complex land tenure system and proliferation of land-owning groups in Papua New Guinea and difficulties the government has in imposing punitive actions when laws are broken.

To try and control this problem, the Forest Authority is moving on two fronts:

- it is trying to ensure that all landowner groups receiving money are fully representative of the people, are incorporated under the Associations Act rather than the Companies Act, and are carrying-out proper management of the forest resources under their control.

- it is trying to restrict the number of new Timber Permits being given to LOCs.

Unfortunately, there is little legislation to support any of these moves, especially for the 72 approved existing LOCs. Also, landowners have very high expectations of financial benefits from this scheme (especially from the most educated landowners).

A few landowners have found unlikely allies in support of the LOCs amongst many of the ‘green’ NGO groups who believe this promotes the idea of landowner empowerment Unfortunately, many LOC directors take the NGO’s good intentions and construe them for their own benefit. This is an issue that will not be easily resolved

Improve the level of monitoring and surveillance of log harvesting and export operations

Tremendous advances have been made in the standard of monitoring of forestry operations in the field., Staff housing, offices, vehicles and field equipment have been provided at all forestry projects and considerable staff training has been undertaken However, the Government’s current financial difficulties are likely to place increasing budgetary pressures on the Forest Authority which will result in decreased monitoring capacity.

Implementation of the Logging Code of Practice

Since the Code was adopted by the Papua New Guinea Government in July 1996, the Forest Authority has undertaken a concerted awareness campaign and education programme. It is imperative that this momentum be maintained and that the requirements of the Code which was made Statutory as from 1st July 1997 continued to be enforced.

Development of a consistent domestic processing policy

Currently, there is no clear policy on domestic processing and much of the debate regarding the subject is based on emotional issues. The Forest Authority currently has a study in progress to review the domestic processing policy options and to recommend the most efficient package of measures to encourage domestic processing. This study commenced in July, 1997 and is expected to be completed by end of March 1998.

Development of a plantation sector

There is huge potential for rural employment generation through plantation development, particularly on large areas of deforested grasslands. In addition, it is almost certain that if a large processing sector is to get established in Papua New Guinea then it will require a large plantation resource to provide the basis.

Historically, most plantation development in Papua New Guinea has been undertaken by the State and the record of accomplishment is very poor. Most of the plantations which still exist have either been abandoned or are neglected, although measures are currently being taken by the Forest Authority to improve this situation. There is a need to properly address the issues of land tenure and resource ownership in order to successfully develop a privately owned plantation sector.

POLICY AND LEGISLATION

Following the Forestry Commission of Inquiry a considerable amount of new forest policy and legislation have been introduced. These include:

- ***National Forest Policy*** - this was issued in September 1991 by the National Executive Council and covers areas of forest management, the forest industry, forest research, forestry training and education, and forestry organization and administration.

- ***Forestry Act 1991*** - this was Gazetted in June 1992. This Forestry Act was a direct result of the Commission of Inquiry and provided for the establishment of the new and autonomous Forest Authority to replace the old Department of Forests. The Act provides for much tighter controls in the acquisition and allocation of forests for development.

- ***Forestry Regulation No. 15, 1992*** - this was introduced to enable registration of forest industry participants and consultants under the Act.

- ***Forestry (Amendment) Act, 1993*** **-** this was certified in April 1993 and provided for a clear administrative function of the Board, the National Forest Service through the Managing Director and the Provincial Forest Management Committees.

- ***The National Forestry Development Guidelines*** - these were issued by the Minister for Forests and endorsed by the National Executive Council during September 1993. The Guidelines established essentially an implementation guide for aspects covered in the new Forest Act, especially in terms of sustainable production, domestic processing, forest revenue, training and localization, review of existing projects, forest resource acquisition and allocation and sustainable development

- ***The National Forest Plan*** - under the Forestry Act 1991 (as amended), the Forest Authority is required to prepare a National Forest Plan to provide a detailed statement of how the national and provincial governments intend to manage and utilize the country’s forest resources. This was presented to Parliament in July 1996 and was endorsed. The National Forest Development Programme (NFDP) under the Plan is now under implementation.

- ***The Papua New Guinea Logging Code of Practice*** was finalized in February 1996 and tabled in Parliament in July 1996. The Papua New Guinea Code is consistent with the Regional Code proposed at the 1995 Suva Heads of Government Forum Meeting but is more specific to Papua New Guinea operating conditions. It became mandatory as of July, 1997.

- ***The 1996 Forestry Regulations,*** which cover all facets of the forest industry procedures and control were approved by the National Executive Council (NEC) during 1996 in principle, subject to some changes to be finalized soon. These Regulations provide the legal status for the implementation of many of the requirements specified under the Forestry Act 1991 (as amended).

- ***The Forestry (Amendment No. 27) Act 1996*** was passed by Parliament and certified on the 11 October 1996. The major amendment relates **to** the membership to the Board to still have eight members, including the representatives of a National Resource Owners Association and the Association of Foresters of Papua New Guinea.

- ***A Forest Protection Policy*** was passed by the NEC in July 1996 and the *'Guidelines for Major Agricultural Projects, Particularly with Respect to Conversion from Forest'* was passed in January 1997. Together, these two measures are designed to ensure that only genuine agricultural developments occur on forested lands, and that Timber Authorities for agricultural land clearance are not used as a back-door access to gaining forest resources.

The development of virtually all of the policy, legislation and regulations outlined above have served to greatly strengthen the capacity of the Forest Authority to monitor and control the forest industry on a sustainable basis. The Forest Authority has been vigorously pursuing the implementation of all these policies.

FOREST RESOURCES

Natural forests

Figure 2 provides an overview of the types of forest present in Papua New Guinea. The definition of net productive or operable forest area is preliminary and will be better defined with the aid of an up dated inventory which is anticipated in the near future. The current estimate of total potential sustainable production is approximately 3.13 million cubic meters per annum. In addition, based on an estimate that 4.4 million hectares of forest land will be converted to agriculture over the next 50 years (an average of 88,000 ha per annum) and that the yield for clear felling is around 30 cubic meters per hectare, then annual production could be boosted by an average of about 2.6 million cubic meters per annum from forest conversion over those 50 years. This would result in a total forecast annual log harvest (from sustainable production and conversion) of approximately 5.73 million cubic meters per annum.

However, in terms of the forest resources already utilized, the picture is quite different This is illustrated in Figure 3:

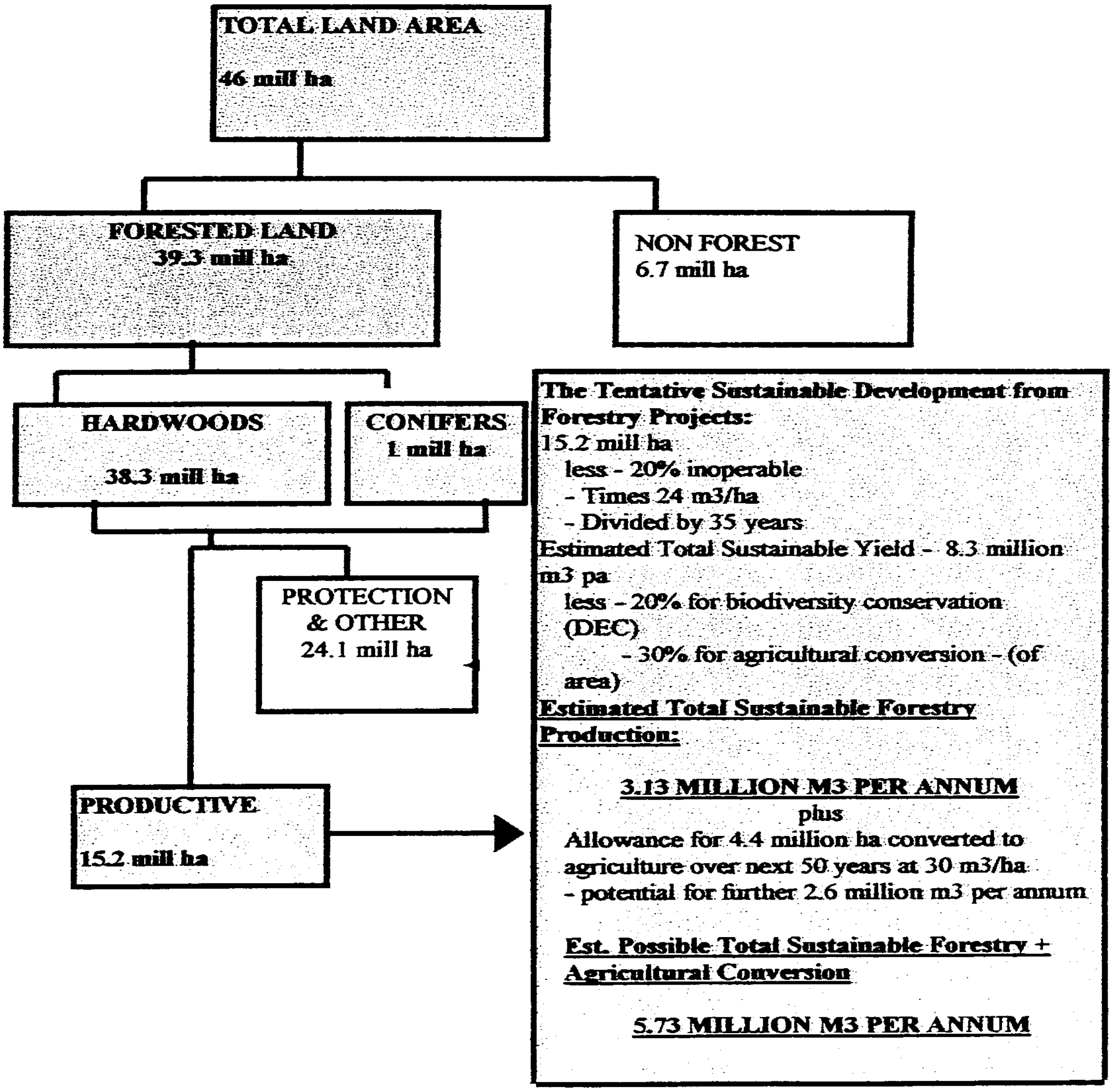
Based on the data shown in Figure 3, Table 2 shows that, although the actual level of log harvest has remained approximately within the estimated level of sustainable cut since 1993, it has been considerably above the sustainable harvest level taking into account the area currently utilized for forest harvesting. A few areas are considerably over the sustainable harvest level, in particular West New Britain Province, which presently accounts for over half of all log exports within the country and which is expected to be virtually logged out within the next 5 years.

Plantations

Compared to the natural forest resource, Papua New Guinea's plantation resources are of only minor importance (see breakdown of plantation resources in Table 3 below). However, if land tenure, resource ownership and other problems can be settled, there is a huge potential for plantations to provide rural employment and to provide the basis for the development of a viable processing sector.

Currently, most of the State owned plantations are either in a state of neglect or are abandoned, although measures are being taken to provide at least basic maintenance to many of these. The one exception is the Wau-Bulolo Plantation which provides logs at a low cost to an antiquated and highly protected plywood mill. Replanting of this forest is below the sustainable level, at about 150 hectares per annum.

Figure 2 - Estimate of potential sustained yield for Papua New Guinea's total forest resources



There are three main private plantations, all operated by Japanese companies. A chipmill is already operating from harvesting of the forest resources at Gogol Plantation, with 33,559 BDU's of woodchip being exported from this mill in 1997. The Open Bay and Stettin Bay projects are due to come on stream within the next 4 - 5 years. It was planned that the timber resources from these plantations would be used for wood chips also. However, these plans appear to have been scrapped and the respective companies are currently re-evaluating their plans.

Figure 3 - Estimate of potential sustained yield for currently acquired forest resources

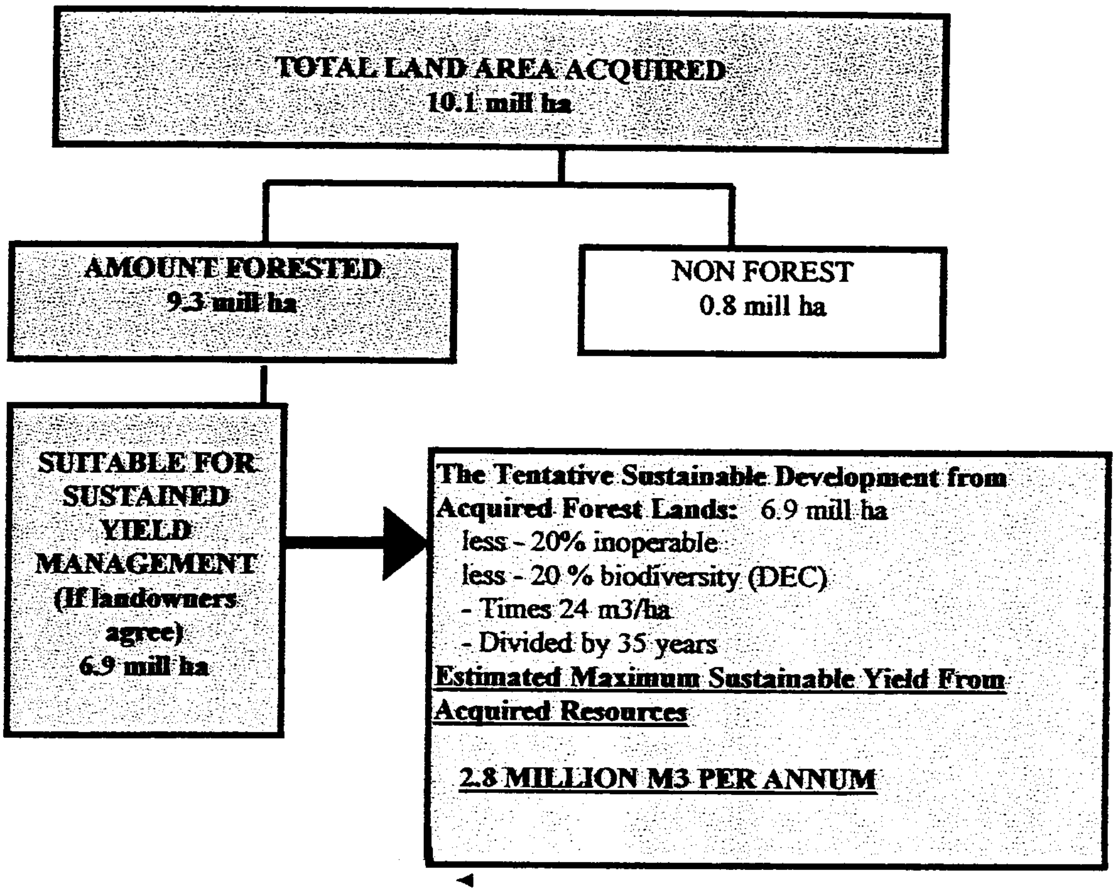


Table 2 - Situation of Papua New Guinea Rate of Forest Harvest

Year	National sustainable volume (excluding Agric. Conversion) (million m3)	Sustainable harvest volume (from acquired resources) (million m3)	Actual annual harvest (million m3)	Permitted annual harvest (million m3)
1993	3.13	2.2	3.25	8.45
1994	3.13	2.2	3.5	7.74
1995	3.13	2.2	3.0	7.31
1996	3.13	2.8	2.7	7.01
1997	3.13	2.8	3.4	7.01
1998	3.13	2.8	2.0 (est)	7.29

Table 3 - Main forest plantations in Papua New Guinea

Province	Location	Main species	Total area (as at Dec. 1997) (ha)
State forests			
Central	Kuriva	Teak	600
Madang	Madang north coast	E. deglupta, A. mangium, T. brassii	900
Morobe	Wau-Bulolo	A. cunninghamii, A. hunsteinii, P. caribaea	12000
Milne Bay	Sagarai	A. mangium, E. deglupta; T. brassii	1500
New Ireland	Kaut	E. Deglupta; Calophyllum sp., Pterocarpus indicus	250
Eastern Highlands	Fayantina	P. patula	900
Eastern Highlands	Lapegu	P. patula	3200
Eastern Highlands	Kainantu	Pinus patula	1000
Western Highlands	Waghi	E. Grandis, E. robusta, E. Saligna; P. patula	2100
Southern Highlands	Orere, Kui, Baino	P.patula, E. robusta	400
Total State			22850
Private Forests			
Madang	Gogol	E. Deglupta, A. Mangium, T. brassii	10745
East New Britain	Open Bay	E. Deglupta, T. Brassii, A. mangium	12004
East New Britain (customary - ex State)	Kerevat	Tectona grandis, Eucalyptus deglupta, Ochroma lagopus	1900
West New Britain	Stettin Bay	E. Deglupta, T. Brassii, A. Mangium, O. sumatrana	10258
West New Britain	Ulamona	E. deglupta	0
Central (customary - ex State)	Brown River	Tectona grandis	1200
Total Private			35107
Grand Total			57957

HARVESTING, PROCESSING AND MARKETING

Activity breakdown

Forestry production increased to 3.01 million cubic meters in 1997, up from 2.67 million cubic meters in 1996 and 2.4 million cubic meters in 1995. The higher 1997 figures were largely due to abnormally dry conditions which allowed harvesting to continue in most areas throughout the entire year. It is ironic that the production increase coincided with a severe market downturn which is expected to continue for some time to come. During 1997, average log prices dropped from around US$130 /m3 to about US$75 /m3.

Forest product export figures for the 1996 and 1997 years are shown in Table 4 below:

Table 4 - Export of forest products - 1996/1997

	1996		1997	
Product	Volume	FOB Value (US$)	Volume	FOB Value (US$)
Logs	2,625,000 m3	35,160,000	3,006,000 m3	351,118,000
Sawn timber	7,319 m3	3,563,227	*	*
Woodchips	45,757 BDU	9,098,679	33,559 BDU	9,761,268
Balsa	1,985 m3	1,009,562	*	*
Plywood	372 m3	365,808	324 m3	*
Sandalwood	46 tonnes	21,240	*	*

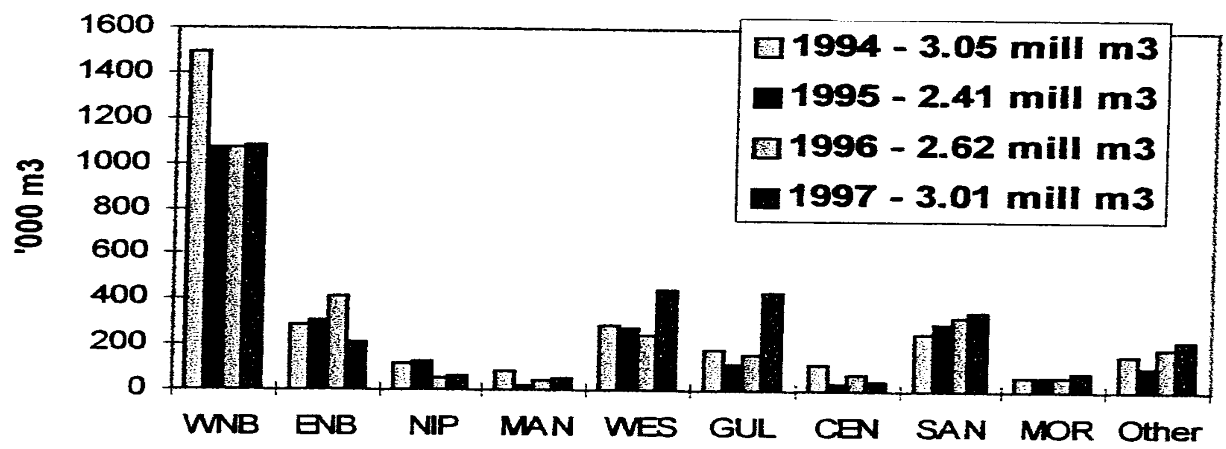
* Insufficient data at hand at time of preparing this Report

Provincial log export volumes are illustrated in Figure 4 below. In recent years, the New Guinea Islands region has provided the largest share of log export revenue, producing over 60 percent of the total log export volume. West New Britain Province alone produced the equivalent of all the other provinces combined. Over the next few years it is expected that log production will move away from the New Guinea Islands region to other less exploited provinces including, Gulf Western and Sandaun.

Japan has continued to be the major market for Papua New Guinea logs (see Figures 5a and 5b below), with a relatively steady market share of approximately 65 percent of the total log export receipts. South Korea is the second most important market but its level of purchases has almost halved over the past four years and this trend is likely to continue as Korean processors move increasingly to temperate softwood inputs.

The Japanese market continued to purchase quality timber; 60 percent of Japan's log purchases from Papua New Guinea were Grade I and 2 log species. In contrast, the Korean market is based almost entirely on the lower grade timbers, with 80 percent of purchases being Grade 3 and 4 log species.

Figure 4 - Provincial log export volumes - 1994-1997



Another feature of the recent forestry boom is that, despite the availability of considerable Government incentives and subsidies for the domestic processing of timber, this sector has actually declined in output over the past decade. It is clearly much more profitable and involves less risk to export raw logs than to process them domestically within Papua New Guinea. Thus approximately 90 percent of Papua New Guinea's annual harvest is exported as logs. Figures 6, 7 and 8 below clearly show the stagnation and decline of the domestic processing sector compared to the log export sector.

Figure 5a - Destination of log exports (1997)

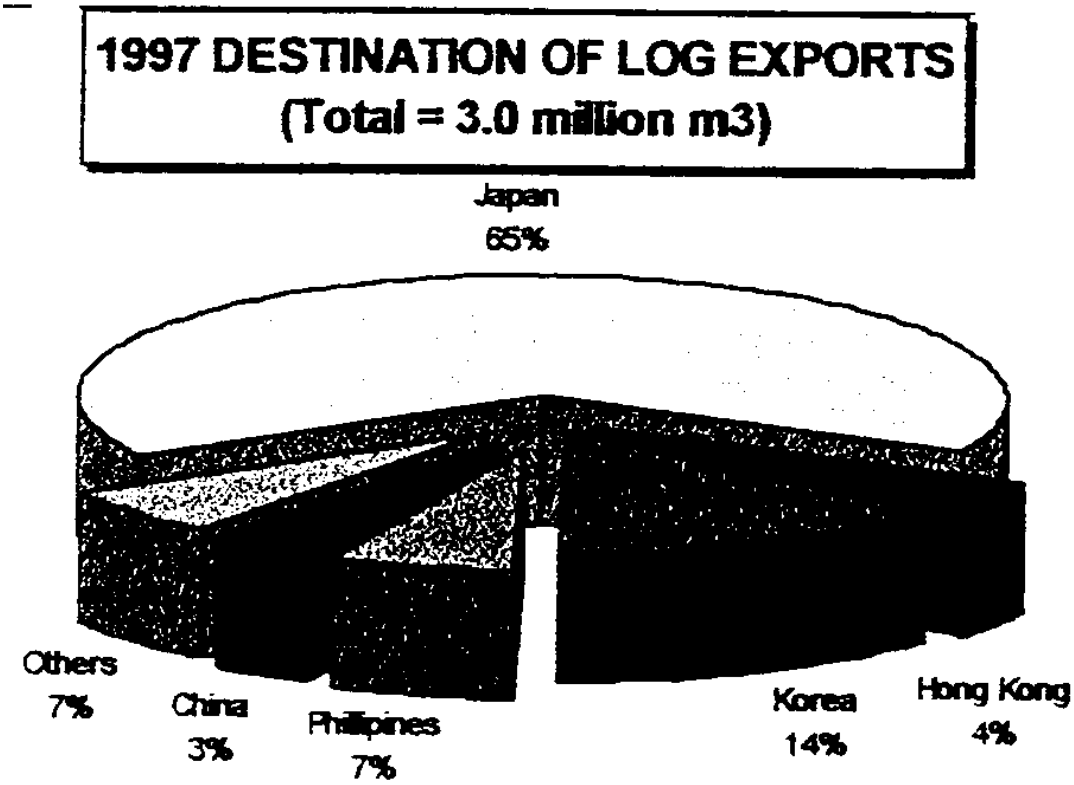
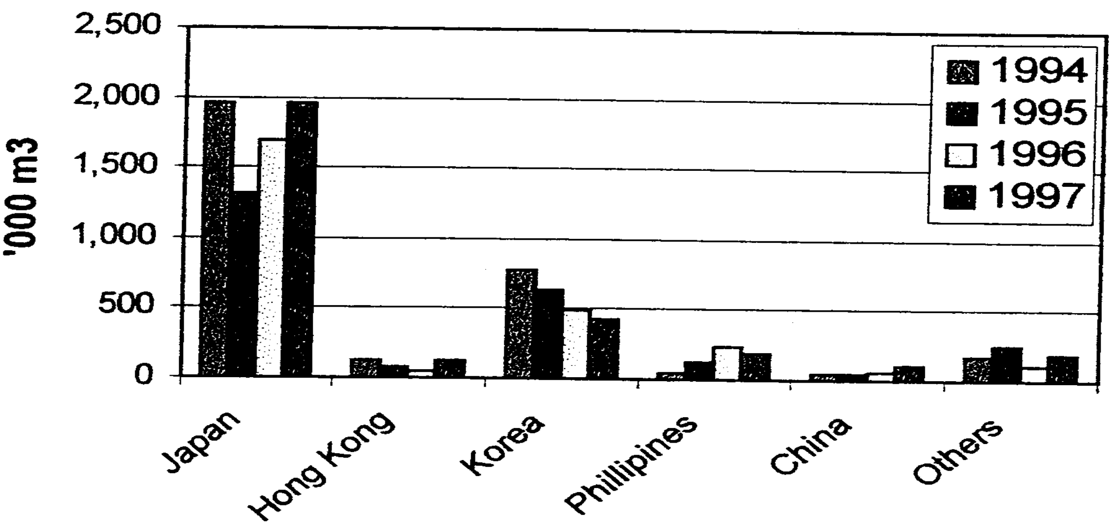


Figure 5b - Log export volums by destination



The processing sector

The National Forest Policy anticipates more downstream processing of forest products. The objectives of pursuing a domestic processing policy are to create employment, facilitate the transfer of technology and encourage higher export revenues from exporting value added products. However, the forest industry is predominantly based on log exports which largely reflects the perceived risk and commercial limitations of domestic processing in Papua New Guinea. The existing number of processing facilities include one plywood factory in Bulolo; one woodchip mill in Madang; forty sawmills with various capacities; and twenty furniture factories and joinery workshops.

The previous government, in approving the National Forest Plan, expressed the desire to promote a gradual increase in the downstream processing of forest products. An interdepartmental committee, chaired by the Department of Commerce and Industry, has been formed to consider a number of incentives to encourage downstream processing. The government has also engaged a group of consultants to study the domestic processing options and make recommendations. This study is now in progress and is due for completion towards the end of March 1998.

Figure 6 - Log input volume exported: round vs. Sawn

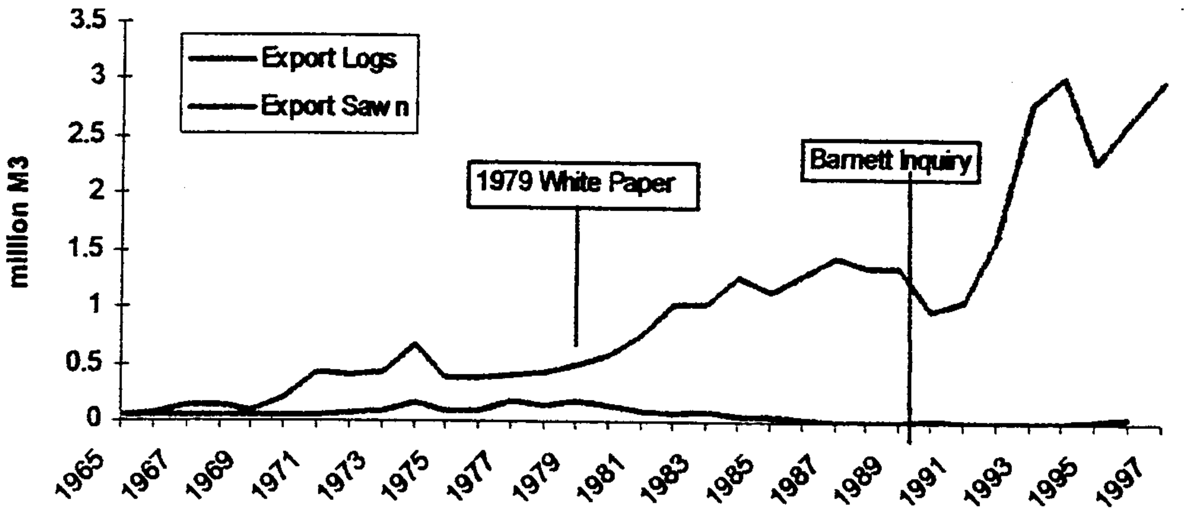


Figure 7 - Export value of raw logs vs timber products (nominal kina)

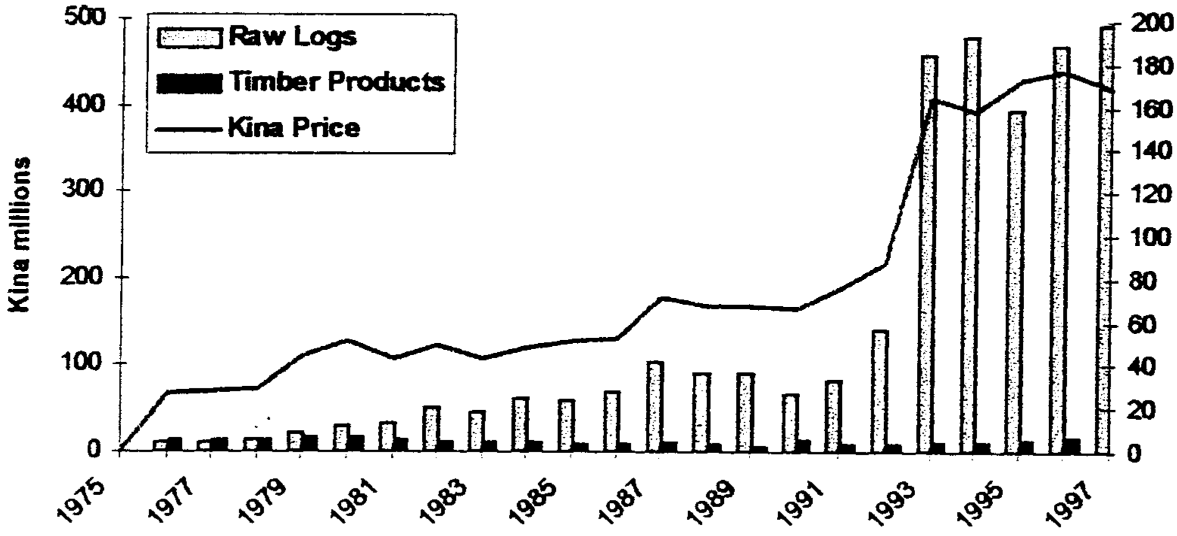
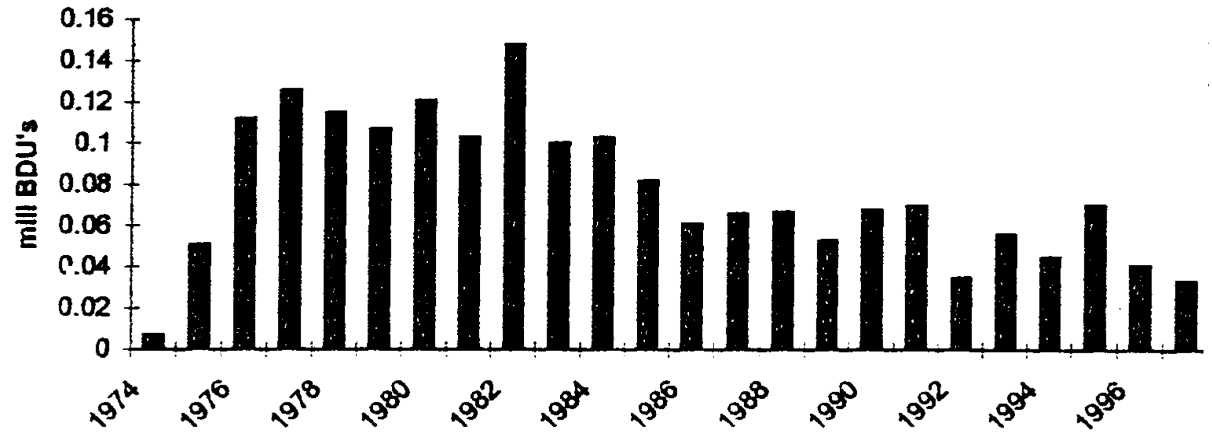


Figure 8 - History of woodchip exports



Status of the Code of Logging Practice

The Papua New Guinea Logging Code of Practice was finalized by a national technical working committee in February 1996. Following this, a joint NEC submission from the Ministers for Forests and Environment and Conservation resulted in the NEC formally endorsing the Papua New Guinea Logging Code of Practice in late March 1996. The Code was then tabled and approved by Parliament in July 1996.

The Papua New Guinea Logging Code of practice is given legal status through the Forestry Regulations, which provides (Regulation 241 Logging and Roading Standards and Practices) that:

> *Timber Permit holders and their assign..... shall ensure that forest roading and logging is undertaken according to standards and practices as specified by the Managing Director from time to time. Such standards and practices may be*

issued in the form of a "Logging code of Practice" or any other form as the Managing Director may determine from time to time.

Early fieldwork which involved interviewing a significant number of forest industry field workers (planners, field supervisors, bulldozer drivers (roading and skidding), grader drivers, chainsaw operators etc.), clearly identified that a significant challenge would be involved in fully implementing of a logging code. The main findings were that:

- Very few field workers had any understanding of the concept of sustainable forestry practices;

- Nearly all had developed their current practices through watching others (equally untrained) or through trial and error. There was little evidence of any technical training.

- Most were receptive to the idea of changing their practices. This, however requires that:

  - Field operators be told why changes are required i.e. they need to be given an understanding of the objectives of sustainable forestry and how their actions can contribute to its achievement; and

  - Field operators need to be shown how to undertake the new practices i.e. good practical field instruction needs to be provided. Merely providing a written Logging Code of Practice is not sufficient.

- There is a limit to how much change can be introduced at any one time.

Given these findings the conclusion was drawn that significant progress toward sustainable forestry practices can be made, but that the full implementation of the Papua New Guinea Logging Code of Practice would take a sustained effort on many fronts over a period of several years rather than months.

Activities which have been or are currently being undertaken to ensure full implementation of the code include:

- Development of the "Key Standards For Selection Logging". The technical working committee which developed the Papua New Guinea Logging Code of Practice was aware that the full implementation of the code would take time. In order to set a minimum starting point for full implementation the working group extracted out of the code 24 Key Standards. These represent the key areas for the achievement of sustainable forestry. The Key Standards are highlighted in the Logging Code.

- As part of implementation, the Forest Authority has developed a new set of field planning, monitoring and control procedures which set out required pre-logging planning to be undertaken by the logging company, the requirements and standards for the Forest Authority field staff to undertake monitoring and control during roading and logging operations, and requirements for post-logging activities.

- In making the public aware of the requirements under the Logging Code, multi page advertising supplements, describing and explaining the main aspects of the Logging Code of Practice, were placed in all major newspapers in English and the two national languages - Motu and Pidgin. This resulted in over 140,000 copies being circulated and provided a high level of awareness of the new Code, especially amongst resource owners.

- A series of intensive three week training courses for all field staff of the Forest Authority regarding the planning, monitoring and control procedures of the Logging Code began in July 1996 and ended in mid 1997. This was funded under the AusAid NFCAP Trust Fund.

- Presently, an AusAid funded HRD Project is well underway and is already having a major positive impact This project is expected to overhaul all forestry training in Papua New Guinea, including the training of industry field staff.

FOREST RESEARCH

The Papua New Guinea Forest Research Institute (FRI), is charged with, among other things, the responsibility to provide through research, scientific information and basis for the sustainable management of Papua New Guinea’s forests.

Research activities

Research activities within FRI are arranged within four programmes: sustainable forest management; planted forests; forest biology; and national botanical garden. Two other support programmes: technical services and administration, provide services to ensure that resources are available to undertake approved research and that the results of research are communicated to those who need them.

The following notes provide an indication of current research activities.

Sustainable forest management programme

The major objective of this programme is to provide the essential data needed for forest managers to sustainably manage Papua New Guinea’s natural forest resource and to develop and refine silvicultural techniques to improve the forest stand quality hence increase the value of the forest to benefit the resource owners and the nation as a whole. Presently, the three major priority projects under this programme include;

(a) Tree growth and yield studies

This project involves establishment of permanent sample plots (PSP) in recently logged over forests. In addition to a total of seventy 1 hectare plots established by the International Tropical Timber Organization (ITTO) project on “Intensification of Growth and Yield Studies”, a total of 30 plots have been established in recently logged over forests throughout the country by this programme. In total 100 plots of one hectare have been established throughout the country. These are part of a nation-wide network of plots which will enable collection of growth data and will subsequently be used for yield prediction and calculation of the next harvest is information that will also be used to review existing policies.

(b) Silvicultural techniques

This project involves establishment of demonstration plots on post harvest forest management So far two 100 hectare plots have been completed in the Morobe Province and Central Provinces. Within these, silvicultural experiments have been designed to test different treatment levels and will be used to further demonstrate to landowners and forest managers the options available to them for the management of their forests after logging.

(c) Ecosystem management

This project involves investigation into diseases in both forest plantations and natural forests. Several forest plantations and natural forests have been covered. Collections of specimen have commenced and research is progressing to isolate pathogens. This project continuously monitors insect and pathogen outbreaks, investigates them and produces reports and recommendations to prevent future problems for plantation managers, resource owners and others concerned with forest management.

Planted forests programme

This programme has four major projects:

Species screening: This project Screens indigenous timber species of Papua New Guinea from both the lowland and highland regions to see if they have any potential to be used as plantation species (not only for commercial purposes but also for village forestry extension). In some parts of the highlands work has already begun with *Kauri Pine,* while in the lowlands seed trees of *Pterocarpus* (Rosewood), *Pometia* (Taun), *Anisoptera* (Mesawa) and *Eucalyptus pellita* (Papua New Guinea source) have been selected for study. Successful species identified by this project will be recommended for industrial plantation and extension purposes depending on their performance on each of the sites.

Species development and improvement: This project tests different provenances and progeny to identify provenances and seed trees that have fast growth and good stem form with fine branching. The best tress will be used for future plantations and community forestry. The project is currently working on *Araucaria spp, Agathis spp, Pinus spp, Casuarina spp, Terminalia spp,* and *Eucalyptus deglupta.*

The project is also researching into tree breeding techniques to improve the form of plantation tree species. It is currently looking into establishing new seed/clonal orchards of *Teak, Hoop, Pinus, Klinkii* and *Acacia mangium* as seed sources for future plantations.

Growth and yield: Study into silvicultural techniques to improve growth and yield of plantation tree species. Currently looking at growth and yield (vol./ha) of *A. mangium* on different sties to see what sites are suitable for this species so that they can be planted at the right site and secondly looking at factors limiting the early growth and survival of *Hoop pine* in the Wau/Bulolo area. Thirdly, working on volume tables for *Pinus oocarpa* in Bulolo and finally looking into appropriate fertilizer and rate required by *Hoop* and *A. mangium* for fast growth.

Management manual: This project is preparing management manuals and information notes for plantation and potential plantation species to be used by Plantation Managers and extension services during the establishment and maintenance of plantations and extension plantings. Currently it is working on the following species: *Hoop; Klinkii; Pinus spp* and *Balsa.* Seven information notes have already been drafted on the silviculture of specific *Pinus* species and indigenous species. The notes also include a guide to seed tree selection and tree improvement for rural fanning communities and for foresters.

Forest biology programme

The major research project within this programme is the development of computer based keys to enable forest managers, researchers and industry staff accurately identify the estimated 2000 tree species found in the Papua New Guinea’s forests. These keys are essential for both improved forest management and effective identification of timber species for pricing and marketing. Scientists within this programme are also responsible for the future development and maintenance of the nationally important insect and plant collections. Curation of the dried plant collections recently received a boost with the receipt of a significant grant from the McArthur Foundation (USA).

National botanical garden

The National Botanic Garden (NBG) is located in the centre of the city of Lae on *56* hectares of land reserved for a botanical garden. Located on the site is the Forest Research Institute, which houses some of the most important scientific collections for biological research, e.g., the National Herbarium, National Forest Insect Collection and the National Xylarium.

Papua New Guinea has a rich and unique flora, and the National Botanic Garden serves an important role as the centre for botanical research, plant conservation and education. The NBG has been developed over the years in parallel with the National Herbarium which houses the best reference collection (over 300,000 specimens) of the nations’ rich flora. The objectives of the project are to provide the scientific basis for the understanding and appreciation of plants as our natural heritage.

A redevelopment programme of the National Botanic Garden was started in 1995. It includes fencing of the garden, major landscaping work to improve the drainage of the area, construction of public amenities area, children’s playgrounds, shade houses for display of the country’s rich flora and various smaller projects. The above activities are controlled through a Garden Management Committee comprising various sectors of the Lae city community.

INTERNATIONAL LINKAGES AND PROGRAMMES

Papua New Guinea is signatory to a number of international organizations which deals with forest and environment issues. These include:

a) *International Tropical Timber Agreement (ITTA)* which gives the mandate for the International Tropical Timber Organization (ITTO) to perform its functions.

b) *Inter-governmental Panel on Forests (IPF)* under the United Nations Commission of Sustainable Development This is an ad hoc Panel dealing with the sustainable management of all types. There is no legally binding instrument associated with the IPF as yet, but Papua New Guinea is an active participant through the National Forest Service.

c) *Convention on Biological Diversity (CBD).* The Department of Environment and Conservation deals with this Convention. However since issues of biodiversity are interrelated with forest issues the National Forest Service closely observes the deliberations and decisions of the Convention.

d) *Melanesian Spearhead Group.* There is a scope for Papua New Guinea to assist the Melanesian Spearhead Group States in Logging Codes of Practice, log export monitoring and surveillance and training of personnel.

e) *South Pacific Forum.* The Papua New Guinea Forest Authority, representing Papua New Guinea is a key player on deliberations on forestry issues.

f) *Human Resources Development (Forestry) Project.* This is a major project funded by AusAid. The main emphasis of the project is human resource development in the forestry sector including forestry training and institution building. Also involved in the project are: the University of Technology, Bulolo Forestry College and Timber Industry Training College.

g) *Log Export Monitoring and Surveillance.* The project is undertaken by a Swiss company, Societe de Generale Surveillance (SGS), and is funded largely by the European Union The main emphasis of this project is to ensure that proper accountability and value for logs being exported are accurately documented for government tax purposed.

h) *Growth and Yield Studies.* The Growth and Yield Studies is a research project that is funded by the Japanese Government, and is administered by the Japanese International Cooperation Agency (JICA). This project has been in operation since 1993 and the JICA team of researchers operates out of the Forest Research Institute in Lae. A major seminar is scheduled for November 1998 for the project to present it’s findings. It is anticipated that the finds will have major policy implication to cuttings cycles, species and diameter limits.

i) *East New Britain Balsa Project.* This project is funded by International Tropical Timber Organization (ITTO). The objective of the project is to expand the Balsa wood industry after the volcano in Rabaul. Balsa is a fast growing tree and is harvested after 4-5 years and is considered an alternative income base in rural community development

j) *Timber Product Marketing Study.* A study to evaluate the marketing strategies for Papua New Guinea Timber products being funded by the International Tropical Timber Organization. The study commenced in 19% and is expected to be completed in March 1998. The purpose of the study is to assess the market, possibility of a voluntary marketing organisation and market intelligence and viability of processing of timber in Papua New Guinea.

k) *Forest Inventory Mapping (FIM).* Funded by AusAid, this project is the continuation of an earlier project - the Rapid Resource Appraisal (RRA) project - which started in 1995. At the completion of the RRA Project, the Forest Authority sought an extension to update forest resource information through scanning and digitizing of the resource maps. This project is on going and the output will assist the NFS to determine the volumes of forest resources available, especially in new forest potential areas

THE FUTURE

Papua New Guinea is very much aware of the prevailing global concerns surrounding the tropical rainforest and the environment at large. There are a lot of programmes open to tropical countries such as Papua New Guinea to participate. To this end, the country has not yet moved towards establishing “model forestry projects”. However, it has in place the policy and legislative framework upon which sustainable forest development and management can be based. This is the cornerstone to all future forest development, and the country anticipates no great difficulties in participating in future international developments.

In recognition that the hardwood market in Asia is decreasing due to a shift in demand towards the use of temperate softwoods and plantation wood, Papua New Guinea is seriously considering the potential of forest products for development, such as bioprospecting and plantation development.

LIST OF WORKING PAPERS ALREADY RELEASED

APFSOS/WP/01	Regional Study - The South Pacific
APFSOS/WP/02	Pacific Rim Demand and Supply Situation, Trends and Prospects: Implications for Forest Products Trade in the Asia-Pacific Region
APFSOS/WP/03	The Implications of the GATT Uruguay Round and other Trade Arrangements for the Asia-Pacific Forest Products Trade
APFSOS/WP/04	Status, Trends and Future Scenarios for Forest Conservation including Protected Areas in the Asia-Pacific Region
APFSOS/WP/05	In-Depth Country Study - New Zealand
APFSOS/WP/06	In-Depth Country Study - Republic of Korea
APFSOS/WP/07	Country Report - Malaysia
APFSOS/WP/08	Country Report - Union of Myanmar
APFSOS/WP/09	Challenges and Opportunities: Policy options for the forestry sector in the Asia-Pacific Region
APFSOS/WP/10	Sources of Non-wood Fibre for Paper, Board and Panels Production: Status, Trends and Prospects for India
APFSOS/WP/11	Country Report - Pakistan
APFSOS/WP/12	Trends and Outlook for Forest Products Consumption, Production and Trade in the Asia-Pacific Region
APFSOS/WP/13	Country Report - Australia
APFSOS/WP/14	Country Report - China
APFSOS/WP/15	Country Report - Japan: Basic Plan on Forest Resources and Long-Term Perspective on Demand and Supply of Important Forestry Products
APFSOS/WP/16	Country Report - Sri Lanka
APFSOS/WP/17	Forest Resources and Roundwood Supply in the Asia Pacific Countries: Situation and Outlook to Year 2010
APFSOS/WP/18	Country Report - Cambodia
APFSOS/WP/19	Wood Materials from Non-Forest Areas
APFSOS/WP/20	Forest Industry Structure and the Evolution of Trade Flows in the Asia-Pacific Region - Scenarios to 2010
APFSOS/WP/21	Decentralization and Devolution of Forest Management in Asia and the Pacific
APFSOS/WP/22	Commentary on Forest Policy in the Asia-Pacific Region (A Review for Indonesia, Malaysia, New Zealand, Papua-New Guinea, Philippines, Thailand, And Western Samoa
APFSOS/WP/23	Asia Pacific Forestry Sector Outlook: Focus On Coconut Wood
APFSOS/WP/24	Ecotourism And Other Services Derived From Forests In The Asia-Pacific Region: Outlook To 2010
APFSOS/WP/25	Technology Scenarios in the Asia-Pacific Forestry Sector
APFSOS/WP/26	In-Depth Country Report - India
APFSOS/WP/27	People and Forests: Situation and Prospects
APFSOS/WP/28	Non-Wood Forest Products Outlook Study for Asia and The Pacific: Towards 2010

APFSOS/WP/29	Opportunities for Forestry Investment in Asia and the Pacific Through Carbon Offset Initiatives
APFSOS/WP/30	Country Report - The Maldives
APFSOS/WP/31	Country Report - Vietnam
APFSOS/WP/32	Country Report - Nepal
APFSOS/WP/33	Country Report - The Philippines
APFSOS/WP/34	Regional Study on Wood Energy Today and Tomorrow in Asia
APFSOS/WP/35	The Status, Trends and Prospects for Non-Wood and Recycled Fibre Sources in China
APFSOS/WP/36	Outlook, Trends and Options with Special Reference to Legislation, Institutions and Capacity Building (A Review for Bangladesh, Bhutan, China, Myanmar, Japan and Vietnam) (Draft)
APFSOS/WP/37	Perspectives of Environmental Civil Society Organisations on Forestry in the Asia-Pacific Region: Outlook To 2010
APFSOS/WP/38	Country Report - Laos
APFSOS/WP/39	ICIMOD
APFSOS/WP/40(A)	FAO Outlook Study On Wood Based Panels Production, Consumption and Trade in the Asia Pacific Region 1996 to 2010
APFSOS/WP/40(B)	FAO Outlook Study On Wood Based Panels Production, Consumption And Trade In The Asia Pacific Region - 1996 To 2010 - China Section Study On China's Wood-Based Panel Market *Outlook For The Years 2000-2010*
APFSOS/WP/41	Scenarios For Extra- And Inter-Sectoral Developments Of Forestry Outlook Study For Asia And The Pacific
APFSOS/WP/42	Country Report - Forestry Of Mongolia
APFSOS/WP/43	Statistical Profile
APFSOS/WP/44	Urban Forestry
APFSOS/WP/45	Country Report - Indonesia
APFSOS/WP/46	Country Report - Thailand
APFSOS/WP/47	Country Report - Papua New Guinea