

Heads of Forestry Meeting, Nadi Fiji, 8 – 12 May 2000

VANUATU COUNTRY REPORT **Prepared by the Department of Forests, Vanuatu**

1 Status of forest and trees sector in national context

Forestry is an important sector to the Vanuatu government and also to the rural communities, as in many cases it is one of their main sources of cash income. In addition to the commercial forestry operations, the forests provide a wide range of products into the subsistence lifestyle of most of the ni-Vanuatu people. The main benefits of the commercial forestry operations in Vanuatu are spread between the landowners, the people who work for the timber companies, the timber companies and the government.

For the above reasons, the Government of Vanuatu is strongly committed to ensuring that its forests are managed on a sustainable basis.

In 1999, the landowners were paid about Vt 36 million (US\$280,000) in royalties for 40,000 m³ logs. It is estimated that the forestry workers were paid around Vt 120 million in wages and the government collected about Vt 35 million in fees and taxes. Over 500 people are estimated to be formally employed in forest operations and fixed sawmills and wood processing industries. Several hundred more are estimated to be involved on full or part-time basis with mobile sawmills.

The forestry sector contributes significantly to the export earnings of the country, usually ranked second or third of the commodities behind copra and kava. The value of forest products exported has been increasing dramatically and has more than doubled in the past 5 years from Vt 255 million to Vt 536 million (US\$4.1m) in 1999. This represented around 13% of the country's total export earnings in 1999.

However, there is generally a low level of understanding of forestry issues and contributions of the forestry sector by politicians, policy makers, urban and business community. Rural people have an appreciation of income potential in areas where forestry operations occur but are not familiar with the complexity of management or legislation due to generally low levels of education. The development of the National Forest Policy in 1997 was very useful to raise awareness of the importance of the forestry sector with many stakeholders.

The National Forest Policy outlines the major stakeholders in the forest sector as National Government, Department of Forests, Provincial Governments, Customary Chiefs, Landowners and Communities, Forest Industry, and Non-Government Organisations.

The policy describes the role of the national government is to establish forest policy and determine how the forests should be managed. The Government will enact forestry legislation and issue timber and sandalwood licences for forestry enterprises. It shall ensure the provision of adequate resources (ie. trained staff, funds) to implement the National Forest Policy. The Department of Forests will implement the National Forest Policy and the forestry legislation. It will promote the sustainable management of forest resources for both timber and non-timber benefits. It will approve utilisation operations agreements and ensure that the Code of Logging Practice is implemented. It will collect information about forest resources, conduct forest research and facilitate the development of commercial plantations and agroforestry systems. It will provide advice on forest conservation, protected areas and National Parks.

The main issues to be faced in the forestry sector in the short term (next 3 years) include:

- the implementation of the Code of Logging Practice
- the training of forest operators and timber processing workers
- the securing of land and investors for plantation development
- implementing silvicultural guidelines and reduced impact logging for native forest harvesting
- the development of export markets for value added forest products
- implementing improved control and management of mobile sawmills
- the identification and protection of important conservation sites
- implementing the Biodiversity Trust fund for conservation reserves

The main issues to be faced in the forestry sector in the medium term (3-8 years) include:

- improved silvicultural knowledge for the commercial species
- development of forest management plans
- develop estimates of the sustainable yield of sandalwood
- reduced concentration of logging on main islands - diversify operations
- increased involvement of landowners in planning and managing logging operations
- encourage landowners to maintain forested areas as forest to develop a permanent forest estate
- encourage landowners to replant commercial tree species for future harvesting
- identify potential non-wood forest products and encourage landowners to plant or protect these non-wood forest products

2 Organisation and structure of Department of Forests

The responsibility for implementing the government's forest policies and programs rests with the Department of Forests. The Department is located within the Ministry for Agriculture, Quarantine, Forestry and Fisheries and was established as a separate Department in 1988. As at 1 April 2000 the Department had a total of 37 staff. These included 25 technical officers, 5 administration officers and 7 casual daily rated positions. In addition there are 13 vacant positions in the Department. The staff number dropped from 42 in 1998 to 39 now as a result of redundancies, resignation and dismissal. There were 5 redundancies in total from 1998 to 1999, one resignation and one dismissal. Two Australian volunteers have recently joined the Department for 1 year.

This drop in forestry staff numbers is part of a Comprehensive Reform Program and is consistent with a 10-15% reduction for the whole of government. The restructure of the Department basically follows that recommended by an independent review of the Department which was carried out by an AusAID funded consultant in conjunction with the Department of Forests in 1997.

The new structure was adopted last year and at the end of 1999, all the forestry staff were transferred into their new posts with new tasks as listed in the new job descriptions. Most of the staff are new in their positions, as they are slightly different from what they are previously doing. They are now beginning to settle in with their new jobs.

Three staff are currently undertaking training overseas at different institutions within the region. One is currently doing a Forestry degree and another two are studying for a diploma in Forestry.

3 Policy and Legislation

3.1 Constitution

The Constitution of the Republic of Vanuatu (1979) must be the foundation of any Government policy. Forest policy formulation must be guided by Article 7(d), which states that every person, has the fundamental duty to "...protect the Republic of Vanuatu and to safeguard the natural wealth, resources and environment in the interests of the present generation and of future generations."

Article 71 of the Constitution states that "...all land in the Republic belongs to the indigenous custom owners and to their descendants". Custom is the basis for land ownership and use of land in the Republic. Non-indigenous persons cannot own land. Perpetual ownership of land is only for indigenous citizens who have acquired their land in accordance with a recognised system of land tenure i.e. through custom.

3.2 Vanuatu National Forest Policy

The Vanuatu National Forest Policy was developed between 1995 and 1997 funded by FAO and UNDP. Dr. Bob Thistlethwaite prepared a background paper, describing the forest situation in Vanuatu, and a discussion paper outlining a range of possible forest policies for Vanuatu. During 1996, comments on the draft policy papers were sought from relevant government departments and from donors. Drafts received wide public consultation through regional workshops before the forest policy was finalised in April 1997. The Government of Vanuatu Council of Ministers formally endorsed the National Forest Policy in November 1998.

The Policy sets out the principal national goal for the forest sector is to “**ensure the sustainable management of Vanuatu’s forests to achieve greater social and economic benefits for current and future generations**”. All the objectives for forest management, conservation, forest development, industrial utilisation, and all research, extension, training, education and forest administration which support forestry development are directed towards that single goal.

The National Forest Policy covers forest management issues, environment and conservation, landowners and communities, forest industries, afforestation and extension, forestry research, forestry training and education, forest administration, and forest revenue. It has specific island policies and sustainable yield estimates by island.

The National Forest Policy aims to address a range of constraints and issues affecting the forestry sector. These include: absence of comprehensive national and regional land use plans, lack of forest management plans, gross imbalance between utilisation and reforestation/afforestation, resource security for the future, resource knowledge, lack of forest harvesting plans, institutional weaknesses, industry weakness, inconsistencies in bureaucratic procedures, guidelines and procedures for forest businesses to attract and secure local and international investors in the sector, and the funding and management of protected areas.

The policy has been printed in three languages of English, French and Bislama.

The present Forestry Act does not reflect fully the objectives and statements of the National Forest Policy. This is one of the main reasons why the Department is taking steps to address this with the implementation of a project to update the Forestry Act in line with the National Forest Policy.

3.3 Forestry Act and related legislation

3.3.1 Forestry Act

The Laws of the Republic of Vanuatu has a specific chapter [147] covering Forestry. It is arranged into sections relating to the subject areas of forest plantations, utilisation operations, conservation, and protection from fires through to administration, financial and general.

The Forestry Act was enacted in 1982 when the Department was still part of Agriculture. As the Department evolved, there has been a need for amendments and a series of 4 amendments to the Forestry Act were passed during 1996 and 1997. These include the Code of Logging Practice, sandalwood management, suspension of logging operations, mobile saw milling operations, the use of the Forestry Fund and the provisions governing utilisation operations agreements between the companies and the landowners.

Because these amendments were ad-hoc pieces of legislation, the Department made an application to FAO to fund a full review of the Forestry legislation. The review is to update the Forestry Act and bring it into line with the new National Forest Policy. This review is now underway and revised forestry legislation is expected to be submitted to Parliament before the end of 2000.

3.3.2 Subsidiary legislation under the Forestry Act

There are 15 Orders (sometimes called Regulations) which are subsidiary legislation under the Forestry Act. These cover specific issues and some of the most important ones are outlined below:

Ban on export logs (Order No.16 of 1994 – subsequently modified in 1997)

The 1994 amendment stated that no persons may export logs from Vanuatu. This round log export ban has been changed under the amendments in 1997 to allow log export only under specific circumstances. The Council of Ministers must consider if the circumstances warrant export such as the absence of any local market, a demonstrated

higher return to landowners and or the government, or the inability to process a particular species in Vanuatu. If these conditions are met, then up to 20 percent of the licenced volume may be exported as logs or flitches in a year.

Control of Mobile Sawmills (Order No.9 of 1996)

This regulation outlines the registration requirements, licences, conditions and fees and sets a log quota for mobile sawmills on each island. The progressive implementation of the regulations governing the control of mobile sawmills has required significant effort by the Department since the regulations were introduced in early 1997. To date the Department has registered more than 70 of the estimated 100 or so mobile mills existing in Vanuatu. Many of the remaining are thought not to be operating. Several workshops have been run for mobile sawmill operators to assist implementation and compliance with the new government regulations.

Management and Control of Sandalwood Trade and Exports (Order No.3 of 1997)

This regulation outlines the licence requirements, conditions and fees, the purchase register, export of Sandalwood and management charges. It gives the Minister the power to declare a Sandalwood trading season, upon advice from the Director of Forests, by specifying the period Sandalwood can be cut and traded. Sandalwood management charge to be used to monitor Sandalwood operations and encourage replanting of Sandalwood.

Vanuatu Code of Logging Practice (Order No. 26 of 1998)

This regulation introduced the Vanuatu Code of Logging Practice and includes provisions for Code amendment, licencing of forest operators, licence fees, harvesting plans etc.

The Vanuatu Code of Logging Practice was developed during 1995 with the assistance of the Vanuatu Sustainable Forest Utilisation Project. The Forestry Act was amended in October 1997 to provide a legal basis for preparing and amending the Code of Logging Practice and established strong penalties for breaches of the Code. A revised version of the Code was prepared in March 1998 incorporating minor improvements based on experience gained so far. Other important supporting documents were developed in 1997 including improved silvicultural prescriptions using variable diameter species cutting limits for selected forest types, and reduced impact logging (RIL) guidelines.

The Code of Logging Practice Regulations establish requirements for all forest operators to be licensed, for coupe harvesting plans to be approved before logging and for logging completion certificates to be issued before logging machinery is moved. The Forestry Order also defines major and minor breaches of the Code and establishes a series of penalties points for and possible fines for individual breaches.

The Forestry Code of Logging Practice is intended to be fully enforced by the end of 2000. The Department is making considerable effort for this to be materialized. Preparations are in place for all operators to be licensed before they can operate machinery. This is to ensure that all operations are according to the code as stipulated in the COLP.

3.3.3 Other related legislation

International Trade (Flora and Fauna) Act (No. 56 of 1989)

The International Trade (Flora and Fauna) Act (1989) regulates and monitors the exploitation and importation of species listed in CITES appendices.

National Parks Act (No. 7 of 1993)

This act provides for the declaration of national parks and nature reserve, for the protection and preservation of such areas and connected matters. It covers the declaration of national parks and reserves, the establishment of the national parks board, the constitution of the board, meetings and powers of the board, management plans, local management committee, conservation fund, accounts, annual reporting, offences and penalties. There are no National Parks in Vanuatu declared under this legislation as yet. Moves have been made to amend the legislation to allow for more customary landowner participation and active management.

Plant Protection Act (No. 14 of 1997)

Provides for the exclusion and effective management of plant pests and to facilitate exports of plant produce and other related matters. The Act covers quarantine entry, standards and management of plant pests including surveying and pest management programs. It contains the control of plant exports, movement controls, emergency orders in the event of an unexpected serious outbreak of a quarantine pest, codes of practices, powers of disposal, inspection and

quarantine release, offences, and penalties. It will not limit the provision of the Animal Quarantine and Importation Act but amends this Act to exclude all mention of plants. This Act also repeals the Rhinoceros Beetle (Prevention) Act (JR 10 of 1961), the Import of Plants Act (JR 26 of 1964) and the Prevention of Spread of Noxious Weeds Act (JR 8 of 1966).

Draft Comprehensive Environmental Legislation, (proposed 1998)

The purpose of this legislation is to provide for sustainable development in Vanuatu through sound environmental planning and management and the conservation, protection and environmentally sound management of all natural resources. Specifically, the proposed legislation is intended to create a comprehensive legal and institutional framework for environmental impact assessment; disaster contingency planning; pollution control and waste management; the management of dangerous and hazardous substances; the management of natural resources and biodiversity conservation.

3.3.4 Treaties and Legal Instruments

Convention on International Trade of Endangered Species of Flora and Fauna (CITES) (ratified 1989)

Vanuatu is a Party to CITES which controls the export and import of animals or plants, dead or alive, in whole or in part as listed under Appendices I, II and III. The International Trade of Flora and Fauna Act (1989) regulates and monitors the exploitation and importation of species listed in the CITES appendices.

Convention on Biological Diversity (ratified 1993)

The Convention on Biological Diversity expects, as far as possible, each contracting party to establish a system for the protection of in-situ biological diversity and complimentary ex-situ measures for the conservation and research on plants in country of origin of genetic resources.

4 Forest/Tree resources

A National Forest Inventory to identify the forest resources of Vanuatu was completed in 1993. The major areas of commercial forest occur on the larger islands of Santo, Malakula, Erromango and Efate, with smaller areas on the islands of Gaua, Ambae, Ambrym and Tanna. There are a total of 205,000ha of mid height forest and 234,000ha of low forest throughout the country. The details of the various vegetation classes found in Vanuatu are given in Table 1.

The National Forest Inventory estimated the total forest resource at about 13 million m³. However only about 20% of the total forest resource is thought to be commercially available, owing to factors such as steep slopes, dissected landform, low sawlog volumes and cultural reasons. The average commercial sawlog yield is rather low by international standards at around 15 m³ per hectare. The sustainable level of harvest from Vanuatu's forests has been estimated to be in the range of 38,000-68,000m³ of logs per year depending on the assumptions that are used. The National Forest Policy has adopted the sustainable yield figure of 68,000 m³/yr because many of the original assumptions about resource availability do not apply to mobile sawmills. This means that a greater proportion of the total timber resources of Vanuatu can be harvested if a combination of mobile mills and conventional logging are used. Adjusted figures include volumes in areas less than 10 m³/ha, estimates of forest patches within agricultural areas, and a reduced allowance for loss of forest due to population growth. The policy aims to allocate 70% of the available timber resources to large processing plants and 30% to mobile sawmills.

Table 1: Vegetation cover of Vanuatu

Vegetation type	Area (ha)	Percentage of land area
Midheight forest (20-30m)	205,307	16.73
Low forest (10-20m)	234,089	19.08
Woodland (<10m)	386	0.03
Thickets (3-8mm)	433,941	35.37
Scrub (<3m)	45,018	3.67
Grassland	51,128	4.17
Swamp communities	2,261	0.18
Mangroves	2,519	0.21
Bare ground/human made	252,256	20.56
Total land area	1,226,905	100.00

Source: Vanuatu National Resource Inventory System (VANRIS).

Whilst these figures may be close to correct, they are 6 years old and the percentage forest cover has changed significantly after 6 years of logging, gardening, cyclone disturbance and cattle grazing. The DoF considers it is important to revise and update the National Forest Inventory and intends seeking donor support.

Table 2: Area of forestry plantations within Vanuatu

Type of Plantation	Area (ha)
Local Supply Plantations	1,160
Aneityum Pine Plantation	890
Ipota Industrial Plantation	260
Santo IFP Research Plantations	350
Melcoffee Whitewood Plantation	250
Total	2,910

The area of plantations in Vanuatu is shown in Table 2. The Local Supply Plantations are located throughout Vanuatu and range in age from 14 to 22 years. The National Forest Policy aim is to establish 20,000ha of plantations in Vanuatu over the next 20 years and negotiations are continuing with several companies to encourage investment in commercial timber plantations.

Small-scale farmers also did some planting but the number of hectares planted cannot be accurately measured due to the small scale and scattered nature of them. Every year, farmers are supplied with seedlings from the government nurseries. In 1998 and 1999, the Forestry Department supplied 7004 seedlings and 9,608 seedlings respectively to small-scale farmers.

5 Harvesting, processing and timber marketing/trade

Large-scale logging operations are currently concentrated on the islands of Santo and Pentecost. In 1999 there were 11 Timber Licences issued under the Forestry Act, although only 7 of these undertook any significant activity. In 1997 the Department of Forests introduced a revised and increased Timber Licence fee to 100 Vt./ m³ based on the maximum volume licensed. This combined with market downturns and more vigorous collection of money and some cancellation of poor performing licences by the Department of Forests has resulted in reductions in quotas for 1998 and 1999. Licences current in 1999 allow for a maximum possible annual cut of 112,500 m³ of logs, which if actually harvested would be about 65% above the estimated sustainable level of harvest for Vanuatu. Although this does still not conform with the National Forest Policy it is a significant improvement on the past figures which were well above that, and at times up to three times the sustainable limit. All of the timber companies in Vanuatu are operating at a level well below the maximum volume allocated on the Timber Licence.

The draft National Forest Policy has set the sustainable yield for Vanuatu at 68,000 m³ per year. The annual volume of logs cut in Vanuatu from 1990-1995 (as shown in Table 3) has always been below the sustainable level on a national basis.

Vanuatu has a small number of medium sized fixed mills with around 7 active Timber Licensees. Since 1997 until now, the two largest mills, Santo Veneers and Melcoffee sawmills processed almost 90% of the harvested wood volume mainly into sawn timber and small quantities of mouldings. In 1997 Melcoffee sawmills invested in new value-adding processing technology for finger-jointing and laminating boards which improves recovery and value. Recent trials have produced encouraging results with even with young plantation grown Whitewood being successfully processed.

5.1 Mobile (small-scale) sawmilling

Mobile saw milling operations occur throughout the country and are increasing in popularity. However, until 1997 none of these operations were carried out under a Timber Licence and they did not submit reports to the Department of Forests. New regulations for controlling the use of Mobile Sawmills in Vanuatu were developed and approved by the Minister in 1997. In 1998 and 1999, the Department of Forests has been trying to control the use of sawmills by issuing them with timber licences and enforcing their provisions. In the National Forest Policy about one-third of the sustainable yield is allocated to mobile sawmills. By allowing quotas, the Department hopes to control the mills and also monitor the quota that each mill harvested. This can also assist working towards sustainable management of the forest resources.

Over recent years the number of mobile sawmills in Vanuatu has increased rapidly and there is now an estimated hundred or so throughout the country. The mobile sawmills are small portable mills (sometimes called "walkabout" sawmills) that can be taken to the forest and even up to the stump to cut up the tree. They have very low production capacity and produce moderate quality timber but have the significant advantages of employment and income opportunities for local communities and minimum environmental disturbance. By developing the mobile sawmill legislation and licensing systems, the Department can now control the mills and their operations. So far around 70 of the estimated hundred or so mobile mills have been registered by the Department. Many of the remainder are thought not to be operating. The total cubic metres harvest by mobile sawmills is estimated to be between 4,000 m³ and 8,000 m³ per year.

The contribution of the major commercial species of Vanuatu to the total log harvest during recent years is shown in Table 4. Two species dominate recent sales, Whitewood (*Endospermum medullosum*) and Melektree (*Antiaris toxicara*). These are the main species cut by to two biggest sawmills on Santo. The Whitewood has been a high value product sent mainly to Japan but there has been notable success in marketing Melektree to Korea in the past few years. The Asian financial crisis has affected Vanuatu's export sales particularly the Korean Melektree sales in 1998.

The variation in species volume is dependent on not only market forces but also which island logging is occurring. For example the high harvest of Tamanu (*Calophyllum neo-ebudicum*) in 1994 was due to harvesting on Erromango where it is a dominant species. There has been no significant harvesting on Erromango since 1994. Smaller mobile mills cut many other darker coloured hardwood species but reliable records are not available.

Table 3: Annual log production and timber export data

Year	Annual Log Production			Annual Timber Products Exports		
	Exports (m ³)	Domestic (m ³)	Total (m ³)	Log Exports FOB Value Vt million	Volume of Processed Exports (m ³)	Processed Exports FOB Value Vt million
1990	-	19,276	19,276	-	1,939	90.06
1991	-	27,336	27,336	-	1,674	86.02
1992	-	20,355	20,355	-	2,269	146.38
1993	4,014	21,084	25,098	43.14	2,598	224.39
1994	-	43,874	43,874	-	5,107	255.43
1995	-	32,986	32,986	-	4,160	233.93
1996	-	35,854	35,854	-	7,940	362.00
1997	-	37,513	37,513	-	14,938	514.89
1998	-	36,907	36,907	-	12,917 [#]	524.16 [*]
1999	-	40,676	40,676	-	12,219 [@]	536.90 [@]

Notes: Data obtained from DoF files and Statistics Office.
^{*} Includes 33,406 kg of Sandalwood valued at 10,962,000 Vatu
[#] Estimated from sawmillers returns
[@] Data from Santo only (vast majority) does not include Vila exports, as Customs have not provided data yet.

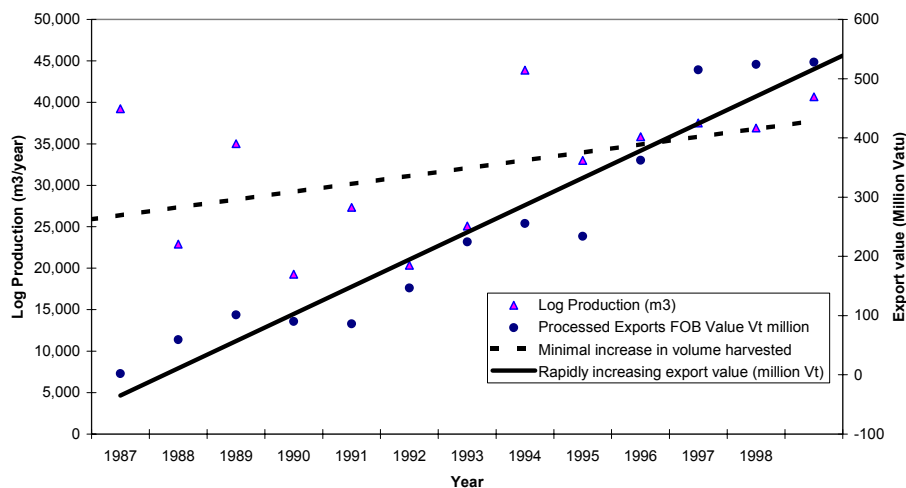


Figure 1: The rapid increase in value of Vanuatu's forest product exports compared to moderate increase in volume harvested.

Table 4: Contributions of the major commercial species to the total log harvest.

Year	Species percentage of total log harvest (%)				
	Black bean	Milktree	Tamanu	Whitewood	Others
1993	2%	23%	12%	61%	2%
1994	7%	17%	22%	47%	7%
1995	10%	21%	<1%	58%	10%
1996	4%	48%	<1%	43%	4%
1997	4%	54%	<1%	32%	9%

(Source: Department of Forests files)

The volume and value of processed forest products exported from Vanuatu (as shown in Table 3) has dramatically increased over recent years as a result of the government implementing a policy of encouraging the establishment of downstream processing facilities in Vanuatu. There are indications that an increasing proportion of the total production of the larger fixed mills is being exported and it is likely that the domestic markets are being met by increased production from mobile mills.

It is important to note that the large increase in value of exports has been achieved with a relatively more moderate increase in the volume harvested which has remained fairly stable over the past few years between 35,000 and 40,000 m³/yr (see Figure 1).

In 1999 the main countries Vanuatu exported timber to include Japan (35% of value), China (29%), Korea (18%), New Caledonia (7%) Taiwan (6%), and Australia (3%). Over 95% of the value of products exported were for sawn timber. Other products such as joinery are higher value per cubic metre but only sold in small quantities.

Table 5 indicates the details of the quantities and values of the various forest products exported from Vanuatu from 1994 to 1999. Due to a decline and eventual cessation of veneer and plywood production sawn timber has increased from 50% of exports in 1995 up to over 90% in 1999. It is anticipated that export earnings from processed forest products will continue to increase as sawmill production capacity is increased and the quality of processed forest products improves.

Implementation of the Code of Logging Practice commenced during 1995. Most of the logging operations in Vanuatu currently do not comply with all of the standards contained in the Code, due mainly to a lack of skilled forest workers. Logging planning in particular requires considerable specialist skills, but even the machine operators and tree fallers will require considerable retraining. Significant training has been provided by the AusAID funded Vanuatu Sustainable Forest Utilisation Project over the past three years and expanded this through 1998 and 1999. It is proposed to develop a competency based assessment system for forest operator licences under the Code during 2000.

Forest Officers have undergone extensive training and are explaining the new Code requirements to forest operators and to issue instructions where harvesting practices don't comply with the Code. The standard of logging plans by most companies has improved.

Table 5: Export of forest products from Vanuatu from 1994 to 1999

YEAR		Sawn timber	Plywood	Veneer	Joinery	Total
1994	Quantity (m ³)	3,626	1,098	206	177	5,107 m ³
	Value (Vt million)	158	57	21	19	255 m Vt
	% of Total Value	62%	22%	8%	8%	100%
1995	Quantity (m ³)	2,538	1,400	164	58	4,160 m ³
	Value (Vt million)	121	78	28	7	234 m Vt
	% of Value	52%	33%	12%	3%	100%
1996	Quantity (m ³)	7,973	56	58	9	8,096 m ³
	Value (Vt million)	323	4	7	2	335 m Vt
	% of Value	96%	1%	2%	1%	100%
1997	Quantity (m ³)	14,794	-	62	82	14,938 m ³
	Value (Vt million)	483	-	5	17	514 m Vt
	% of Value	96%	-	<1%	3%	100%
1998	Quantity (m ³)	12,917 [#]	-	-	2	12,917 m ³
	Value (Vt million)	513	-	-	<1	514 m Vt
	% of Value	99%	-	-	<1%	100%
1999	Quantity (m ³)	12,219 [@]	-	-	N/A	12,219 m ³
	Value (Vt million)	537	-	-	N/A	537 [@] m Vt
	% of Value	100%	-	-	N/A	100%

Source: Statistics Office, Customs and Department of Forests data.

Notes: Exchange rate was approx US\$=130Vatu for most of 1999.

Sandalwood data shown not included here but shown separately in Table 6.

[#] Estimated from sawmillers returns

[@] Data from Santo only (vast majority) does not include Vila exports, as Customs have not provided data yet.

5.2 Sandalwood Management

Sandalwood (*Santalum austro-caledonia*) is an important forest product in Vanuatu. Sandalwood is used for fine carvings or made into incense or oil for perfumes. The majority is of Vanuatu sandalwood exported to Taiwan for processing. The Government of Vanuatu is encouraging domestic processing of sandalwood and in 1998 the first sandalwood distillation was trialed.

At this stage there is very little information available about the sustainable management of Vanuatu sandalwood. In 1997 the government introduced new regulations for controlling the harvest and export of sandalwood. These have significantly improved the management and information on sandalwood harvesting.

Table 6 shows a summary of the recent sandalwood harvesting in Vanuatu. Sandalwood harvesting fluctuates from year to year with 1998 harvest of almost 80 tonnes but 1999 was down to 28 tonnes. Sandalwood represents a very important forest industry for Vanuatu, particularly for small farmers in remote areas where little other income earning opportunities exist such as on Erromango and west coast Santo. In 1999 the DoF recorded 374 separate purchase transactions averaging around 77kg per sale. Some of these people would sell several lots but it indicates the large number of people involved in the field.

A highlight in 1999 was the initial trial operation of a sandalwood oil distillery in Vila by one company that aims to increase production during 2000 and beyond. This has the potential to create jobs and to add more value to the product while still in Vanuatu.

Another important initiative was taken by the DoF in 1999 to implement a minimum cutting limit of 15cm diameter at 50 cm up from the ground so that young sandalwood trees are allowed to grow to maturity before harvesting. This also increases the proportion of heartwood that has the valuable higher oil content and reduces the effort of de-sapping.

Table 6: Sandalwood harvesting summary.

Year	Quantity harvested (Kg)	Royalty to landowners (Vt)	Government charges	Total value (Royalty + GoV charges)
1996	77,000	27,000,000	5,000,000*	32,000,000
1997	32,906	12,020,795	987,180*	13,007,975
1998**	72,356	31,361,600	2,170,680**	33,532,280
1999	28,551	11,400,000	856,530	12,256,530

Notes: * Export tax only as Sandalwood Licensing and Management Charge not introduced until 1998.

** New Sandalwood regulations and charges approved in 1997 and applied from 1998 season.

6 Forest/tree regeneration, plantation establishment

In Vanuatu currently there is virtually no deliberate reforestation undertaken after logging, nor is there any detailed knowledge of the survival and growth of natural regeneration or residual trees after logging. Most forest types in Vanuatu appear to regenerate quite well naturally, but in the past much of the younger trees were destroyed during logging operations.

Because there is no substantial active reforestation program, this does not mean that there is no replanting in the garden sites or where old garden sites. Seedlings distributed by farmers in 1993 to 1999 showed that there is some planting of trees in small quantities. However, the areas planted cannot be worked out due to mortality rate and time taken to work out the areas. In 1999, approximately 9,608 seedlings were distributed to farmers. (See Table 7) In addition some sawmills distribute seedlings to landowners for planting. Table 7 also shows a summary of seedling production and distribution from the two main DoF nurseries at Tagabe in Vila and at the Shark Bay IFP research station.

In 1997 the Vanuatu Sustainable Forest Utilisation Project in conjunction with the Department of Forests set up a Reduced Impact Logging demonstration area on Efate. A significant achievement of this has been the demonstrated reduced environmental impact and much improved regeneration - notably of the commercial species. In addition the area has increased the awareness by landowners of how a good logging operation should look like and how it can be done. It is expected that this area will have significant long-term benefits and it is hoped that further demonstration forests can be set up on other islands in other forest types. However, government funds are limited and so donors are being approached. The Department with the assistance of GTZ are establishing a similar demonstration site in Santo, one of the major islands of Vanuatu to demonstrate the same principles.

The Department of Forests, with the assistance of the Vanuatu Sustainable Forest Utilisation Project, has undertaken some monitoring of the regeneration trials. A series of semi-permanent plots have been established in different silvicultural forest management types on Efate, Erromango, Malakula and Santo. The plots have been measured and will be remeasured after logging. The data has been used to develop a new set of Silvicultural Forest Harvesting types. A document has been prepared and training conducted for Department of Forests staff.

The main constraints faced include: there is no systematic recording of areas harvested each year or of the regeneration system used in each area; the loss of data and records from early regeneration plots; difficulties in ensuring that logging is actually undertaken in areas where regeneration plots have been established; and obtaining a long term commitment from landowners for land to be actively managed for forestry.

Table 7: Summary of seed and nut collection and distribution for 1999.

Common name	Sum of Quantity of seed collected (nuts or kilograms)	Sum of Quantity of seed distributed to Farmers (kilograms)	Sum of Quantity of seed distributed to DoF Nurseries (kilograms)	Number of Seedlings distributed
Bluwota		5		185
Kauri				100
Mahogany				1,950
Morinda				200
Nakavika				10
Namamau	1	2		300
Namariu				70
Nangai				343
Natangura	60			
Natapoa	410			4,850
Navele				50
Noni	1			
Oak (Casurina)	0		0	
Palm	1,000			
Pine				50
Red Nakatambol				200
Sandalwood	34	9	10	
Whitewood	24	3	16	1,300
Grand Total	1,535	14	27	9,608

7 Biodiversity and conservation

The Department of Forests established a Forest Conservation Unit in 1995. The main activities include

- manage the Vanuatu Herbarium
- provide information to landowners on conservation and protected areas
- collect information on potential forest conservation sites (through surveys and village meetings)
- develop conservation strategies for five priority tree species with assistance from the regional SPRIG project
- monitor existing forest protected areas
- promote post-logging forest regeneration through awareness and permanent plots.

The formal concept of conservation, protected areas and National Parks is very new to Vanuatu, although the placing of tabus has been the traditional method used for conserving resources. Conservation and biodiversity issues are covered by the Forest Conservation Unit in conjunction with the Environment Unit, Department of Fisheries and the NGO communities such as FSP, VANGO etc.

Placing of traditional taboos have assisted Vanuatu a lot in conserving forest. However, with the current economic drive and deterioration of traditional cultures, these methods of taboos are losing their importance and reducing their effect in conserving the resources including trees. There are several taboo sites in Vanuatu that were not known to the department.

Existing forest conservation areas in Vanuatu include:

7.1 Kauri Reserve, Erromango

The Erromango Kauri Reserve is an area of 3,205 ha of rainforest with kauri emergents encompassing the upper catchments of the Lampounari and Pongkil rivers. It has some of the best stands of Kauri (*Agathis macrophylla*) left in Vanuatu. The area has been leased by the Department of Forests for a five-year period ending in May 2000. The Department is currently seeking assistance from donor agencies to pay for the rent for another 5 years. The New Zealand Government are currently funding an infrastructure development and alternative income generation project for the communities associated with the Reserve.

7.2 Big Bay Conservation Area, Santo

Managed by village committee with guidance from the Environment Unit in collaboration with SPREP and UNEP. The area covers 2,300 ha of primary rainforest and an additional 2,000 ha of coastal limestone terraces. They have not paid for a lease of the area but are assisting financially with the establishment of small projects such as Eco-tourism and nut cultivation. The Project has been successful in self funding its activities in the Project area.

7.3 Loru Protected Area, Santo

Land owner initiative with the assistance of the Vanuatu Protected Area Initiatives. The area contains 150 ha of primary rainforest and contains an environmental centre set up by the village committee with funding provided by British High Commission. A lease agreement between the chief and the other members of the Loru Protected Area Committee has been negotiated. However, custom law will remain the foundation of the protection plan not statutory laws.

7.4 Nagha mo Pineia Area, Malakula

A landowner initiative covering an area of 1,056 ha of which 600 ha is forest and the rest gardens, reef, and turtle nesting zones. The community have started a small eco-tourism project, with assistance from New Zealand Government. There is no legal protection of the land at present. A local Protected Area By-law was developed with the Malampa Provincial Government, the Department of Forests and interested landowners, but it has never been adopted. However, the Department will remind the province this year to try and adopt the by-law.

There are a number of conservation areas proposed by landowners, which include:

- Middlebush Tanna where there is an interesting area of rare and endemic palm species
- South-west Malakula for mangroves
- East Santo where there are a number of smaller requests for conservation areas
- West-coast Santo where there is an area of endemic kauri forest
- Loh, Torres where there has been request for coconut crab conservation area
- South Erromango for kauri dominated mixed rainforest conservation

There is also a proposal for establishment of a National Park on Efate; negotiations are underway with landowners at present.

Some of the constraints affecting the implementation of forest conservation programs in Vanuatu include the lack of resources, lack of effective coordination between the various organisations involved in conservation programs and the inability to implement the National Parks Act. The initiatives planned include the establishment of an inter-disciplinary/inter-agency Protected Areas Group to coordinate and share information on protected areas, and the establishment of the Vanuatu Biodiversity Conservation Trust Fund. The development of a Biodiversity Strategy and Action Plan for Vanuatu is currently underway by the Environment Unit with assistance from SPREP and the GEF.

8 Research and development

The Research Unit of the Department of Forests is small having only 3 permanent staff. Research priorities have been established in a draft Research strategy prepared in 1997. The Department of Forests relies heavily on externally funded and assisted research. The current research program includes the following:

8.1 Plantation Forestry

Collection of growth data for plantation species using permanent plots mainly at the Santo Research Station. Very little data analysis has been done so far.

8.2 Natural Forest Regeneration

Permanent Sample Plots - monitoring post logging damage and regeneration has been carried on in association with AusAID. A number of sample plots have been established in different forest types, in areas where logging is expected.

8.3 Landowner Extension and Awareness of Reforestation Naturally (LEARN)

The LEARN project has been approved and funded by the European Union to commence in 2000. Key activities include plans to develop methods for post-harvest reforestation of natural forest, for some of the recognised Vanuatu silvicultural types, in participation with landowners. The project aims to:

- Develop methods for post-harvest reforestation of natural forest, for recognised Vanuatu silvicultural types - adapting methodology developed by KGIDP in Papua New Guinea.
- Promotion of post-harvest reforestation of natural forest as an alternative, or to complement other post-harvest development activities.
- Promotion of reforestation of natural forest post-harvest through extension, mobilisation and active community participation.
- Establish a series of natural reforestation areas at recently harvested sites with Department of Forests, industry and landowner participation.
- Maintain established reforestation areas as models in landowner extension and awareness.
- To develop a natural reforestation scheme whereby the Department of Forests will provide landowners forest management charge rebates for areas that are adequately forested two years after logging.
- To package the project for integration into the Department for use by Forestry Officers.

Future research projects should:

- assist the private sector plantation program with silvicultural knowledge of local timber species grown under plantation conditions.
- further the goal of achieving timber sustainability through regeneration studies and monitoring post logging areas, as well as carrying out studies of logging operations.
- take account of the way in which plants and trees serve the needs and possibly enhance the earning capacity of the rural population.

There are a number of serious constraints that affect forest research work in Vanuatu.

Until the late 80's, forest research concentrated heavily upon one species, *Cordia alliodora*. This species did not meet expectations and has been abandoned as a commercial species, leaving the Department with a narrow base of research data. Many of the Research Officers were short-term expatriate staff, resulting in the use of inconsistent approaches and discontinuity in the research program. Many research projects, especially species trials, have been inadequately recorded. Funding is limited.

During 1998 and 1999, the 3 research staff concentrated on the species trials under the SPRIG project and the data collected will be use by the Department in future prediction of growth performance and mean annual increments of these species.

9 Extension and awareness

The Extension Section aims to encourage and facilitate individuals and communities to carry out forestry/agro forestry projects. The Department has an extension forester based in every province. The rural population is showing increasing interest in growing trees for cash crops as well as for traditional requirements. The Department carries out the following extension activities.

9.1 Agroforestry

A number of agroforestry demonstration areas set up and farmers are invited to these areas for field days. Field staff provide technical advice and assist farmers in laying out planting areas. There are some silvopastoral trials that could be further developed.

9.2 Cash crops

Promotion of various nuts and fruits (eg. Canarium, Barringtonia and Tamarindus) and Sandalwood (Santalum) are actively encouraged by the Department of Forests. Sandalwood is a major forest resource that is exported out of Vanuatu and also one that generates revenue to those who trade it including communities. In 1998, sandalwood generated more revenue to communities than large scale logging for timber. One sandalwood buyer has already established a distillation plant in Vila and is producing sandal oil. Another one is preparing his documents to get the plant established. This year, many intending sandalwood buyers have approached the Department but the Department has not issued any new sandalwood licences in an effort to manage the resource. The sustainable management of sandalwood resources is being promoted.

There is growing interest in nuts and other forest products, and the Department provides seeds and advice to landowners for small plantation establishment.

9.3 Community forestry

We are promoting community forestry projects. We have one successful project established on Aneityum and are investigating another one on Erromango.

9.4 Joint venture plantation projects

The Section acts as a point of contact for developers interested in setting up plantation projects. We have undertaken studies into the economics of plantations and the marketing of local timbers. The Department acts as a broker between landowners and investors to secure land for plantation development. A planned consultancy will look at expanding this work to meet the need for increased plantation development.

9.5 Traditional forest products

Increased population pressures have resulted in a scarcity of fuelwood and traditional building materials in many places. The Department supplies seeds and seedlings to farmers and provides advice on species suitable for fuelwood and building materials. We are phasing out the distribution of free seedlings and encouraging and assisting communities to start their own tree nurseries.

9.6 Awareness and information

There is a high level of awareness and concern about environmental and logging issues in some areas, but in general landowners do not have a good understanding of the department's procedures or the Code of Logging Practice. Staff have carried out a number of PRA exercises and participate in various Technical Advisory Groups established by the Land Use Planning Project. We strongly endorse the participatory approach, but have found that often awareness meetings appear to produce the same results and are more cost effective. The Extension Section makes use of published materials, radio programs and theatre in getting messages across. Field staff assist the utilisation officers to explain to landowners their rights and responsibilities in regard to logging and small sawmills. The Department's newsletter Bush Nuis has been a useful way of disseminating information on DoF activities and results.

9.7 Women and Forestry

Under the current Forest Policy, the Government recognises the involvement of women, as well as men, in traditional use of forests, and that specific programmes are needed to involve women in forest issues. A project has been developed that hopes to heighten women's awareness and participation in issues relating to forestry; code of logging practice (COLP), recent forest legislation, Forest Policy issues, tree planting, tree species, nurseries, land use, and conservation with the development of a specific awareness and extension programme relating to women and forestry.

9.8 Other activities

Extension staff are involved in collecting and buying tree seed, erosion control projects, awareness meetings and monitoring small sawmills, where there is no utilisation officer.

There are a number of constraints affecting the delivery of extension programs. With a widely dispersed population with different forestry needs it is hard to be sure that the program is fully effective. The eight extension officers are spread very thinly on the ground. All the Provinces contain several islands. Travel is costly and sometimes services are infrequent, which makes it difficult for staff to visit their areas frequently. The program, which is funded from the reforestation tax, provides operational costs but not capital costs. We have relied on assistance from donors over the last few years.

10 Training

Over the past year there has been a larger amount of training undertaken as a result of the Vanuatu Sustainable Forest Utilisation Project. A range of training has been delivered to three target groups.

10.1 Department of Forests

Technical training in logging planning, aerial photography, community development approaches, revenue management, wood technology and administrative training in supervision of logging, negotiating logging agreements and general administration.

There are three persons undertaking long term training overseas (one person studying for a Forestry Degree in both Australia and NZ, and one Diploma student in PNG). The Department is intending to send more young students for training to replace some of the old Officers. There are two Officers approaching retiring age that the Department must find their replacement.

One major issue that the Department faces is the shortage of staff. The Department cannot send Officers for long term training because this will hinder the work programs.

The major constraint the Department is currently facing is funding. Several years ago, Forestry was given priority by the sponsors and also the National Scholarships Office. Now the focus is given to other sector making it difficult to get scholarships. The Heads of Forestry meeting could consider making some observation and/or recommendation on forestry training to draw this issue to the attention of governments and donors.

10.2 Forest Industry

Technical training in logging planning, the Code of Logging Practice, wood properties, timber seasoning and chainsaw techniques; traineeships have also been established.

10.3 Landowner/Community Groups

Training in community development, forestry awareness and log-scaling.

In addition some Department of Forests staff have participated in training programs on logging planning and research techniques organised by SPFDP and one officer has attended a three months course on forest management planning in Japan.

11 Other agencies/programs in the forest sector

Vanuatu became a member of Asia-Pacific Forestry Commission in August 1999. In May 2000 Vanuatu will attend the APFC session in Queensland for the first time after becoming a member.

The Vanuatu Council of Ministers have approved Vanuatu to join the International Tropical Timber Organisation and we hope to be admitted during 2000. There are a number of benefits from Vanuatu joining ITTO and the goals of ITTO which is to produce a sustainable supply of tropical timber is consistent with the Vanuatu Forestry Department's goals.

The Department of Forests works in a cooperative manner with the following Government agencies that are active in the forest sector.

11.1 Department of Agriculture

Agricultural extension officers work closely with forest extension officers to encourage landowners to undertake alley cropping and agroforestry projects. In areas where no forest officers, Agriculture officers are used by the forest officers to manage Forestry nurseries.

11.2 Land Use Planning Project

A five-year AusAID funded project run in the Department of Lands that is strengthening land use planning and natural resource capabilities at the national, regional and local levels. Its programs involve cooperation between the Local Governments, the Departments of Forests, Fisheries, Agriculture and the Environment Unit and various NGOs. This project is due to end in late 2000.

11.3 Environment Unit

Part of the Ministry of Lands, the unit assists with management of the Big Bay Conservation Area in Santo, runs environmental awareness workshops and provides advice on issues relating to the environment, biodiversity and conservation.

11.4 Cultural Centre

They are involved in collecting information about sites of cultural significance that is used to assess development proposals. They are also involved in mapping the Erromango Kauri Reserve proposal.

11.5 NGO's active in the forestry sector

The Department of Forests maintains a policy of open cooperation with the non-government organisations and collaborates closely with some programs delivered by FSP, VRDTCA and Wan Smol Bag. The following NGOs are active in the forest sector:

11.6 FSP (Foundation of the Peoples of the South Pacific)

Through their Community Environment & Forestry Project, they are involved in supporting environmental awareness programs, offer training for small sawmill operations and marketing the timber.

11.7 NKDT (National Komunity Development Trust)

Their work involves delivering literacy and awareness programs to empower rural communities. This includes supplying information on the environment and logging.

11.8 VRDTCA (Vanuatu Rural Development Rural Training Centres Association)

Developed environmental teaching materials for use in the Rural Training Centres. They are also involved in training rural people in the use of chainsaw-mills.

11.9 Wan Smol Bag Theatre

Deliver and education and awareness program by performing plays throughout Vanuatu, dealing with various environmental topics, including logging, soil conservation, and reforestation naturally.

12 Forest/trees projects in the past five years

12.1 Vanuatu Sustainable Forest Utilisation Project (VSFUP)

This was a five-year project (1995-February 2000) with A\$5.4 million funding from AusAID. The project aims to assist Vanuatu in management planning of its forest resources, minimise the environmental impacts of logging, maximise the returns to government, industry and the landowners and to optimise the participation of ni-Vanuatu in all aspects of forestry. The major achievements include the development of a Code of Logging Practice, Silviculture Prescription, Reduce Impact Logging Guidelines, Draft legislation of timber grading standards, delivery of numerous training programs for departmental staff, industry and landowners and infrastructure development including houses, offices, vehicles, boats and a radio network. Several technical studies have also been undertaken.

12.2 Erromango Kauri reserve infrastructure project

This is a two year project (1998-2000) with US\$50,000 funding from New Zealand ODA. It aims to assist infrastructure development for communities associated with the Reserve. This project has not been completed due to the withdrawal of the volunteers working for the project in late 1999.

12.3 Aneityum community forestry project

This is a two year project (1995 - 1997) with US\$91,000 funding from New Zealand ODA. It aims to establish a commercially viable community forestry project, based on the existing pine plantations on Aneityum. A company has been formed and revenue is paid into a trust fund which is administered locally. Production of timber has commenced using two mobile sawmills and timber is being sold in Efate and southern Vanuatu.

12.4 Aneityum erosion control project

This is a five year project (1996 - 2000) with US\$155,000 funding from New Zealand ODA. It aims to control the spread of erosion and to heighten public awareness of the causes and problems, to prevent, as far as possible, further erosion on the island of Aneityum. Work has started on a series of demonstration areas on sites of active erosion. Theatre and posters have been used to raise public awareness locally.

12.5 Sandalwood inventory

This was a two year project (1996 - 1997) with US\$9,000 funding from New Zealand ODA. It aimed to conduct an inventory of sandalwood (*Santalum austro-caledonicum*) and to assess oil quality and yield. Samples were collected and preliminary analysis done showing wide variation in oil yield from various islands. Inventory has proved difficult due to low stocking rates and has not been able to be progressed.

12.6 Forest conservation and protected areas: monitoring and awareness

This was a small four month project from September 96 with US\$3,500 funding from New Zealand ODA. It aimed to heighten awareness among interested landowners on pros and cons of local protected areas.

12.7 Promotion of post-logging forest regeneration in Vanuatu

This was a small four month project from September 96 with US\$4,400 funding from the United Kingdom. It was a pilot project to promote post-logging forest regeneration, through radio, comic books, workshops and will involve the Wan Smol Bag theatre group.

12.8 Ipota Forestry Project

This was a thirteen year project (1982 - 1995) with US\$90,000 funding from New Zealand ODA. It aimed to establish a renewable resource as a source of revenue and employment for the local population. Some 260 ha of *Cordia alliodora* were established. However there is no obvious market, growth rates are poor and dense natural regeneration is causing problems on some of the area.

12.9 Industrial Forestry Plantations

This was a six-year project (1990 - 1995) with US\$1,960,000 funding from the European Union. It aimed to establish a 525 ha plantation/trial area on a 5,500 ha site on Santo and to lease the remaining area for private forestry development. The donor agency proved to be flexible in allowing the original objectives to change over time, to meet the needs of the Department. Some 325 ha have been planted and the remaining area cleared for planting. Trials and research plots have been established for forestry and agroforestry operations. Several internal research publications and reports have been produced. The 525ha pilot project area is now used as a field research station.

12.10 South Pacific Regional Initiative on Genetic Resources (SPRIG)

The Department of Forests has worked with other regional countries on tree improvement programs for selected commercial species, including the establishment of simple provenance and progeny trials. Several initial studies have been done and reports written. A 6 ha experimental trial of Mahogany provenances and progenies was established in Santo in 1997. Several other trials have been established so far including the first Vanuatu Whitewood (*Endospermum medullosum*) seed collection and provenance trial. Conservation strategies for Sandalwood, *Endospermum* and *Agathis* sp. have been developed.

12.11 Biodiversity Mapping and Training Project

With technical and funding assistance from Environment Australia, the Department is undertaking biodiversity training and species mapping work. This includes developing some preliminary species models based on existing flora and fauna data and new climate and terrain models. Another output will be an improved database including flora information from the Department of Forests and fauna data from the Environment Unit. This is being put together for the first time and will hopefully lead to some improved information on the location of biodiversity gaps for further surveying.

It is expected that the result from these modeling can be used to assist land use planning as well as provide threatened species mapping. In addition it may be useful for preliminary identification of "biodiversity hotspots" that could lead to improved management and identification of potential areas to be managed for conservation.

13 Priority national activities to be implemented

The priority national activities are repeated from last Heads of Forestry meeting, as they are still the dominant issues:

13.1 Implementation of the National Forest Policy

The National Forest Policy has now been adopted as the basis for work the Forestry department. It is now up to the Department to implement the policy and it has formed the basis for the development of the Department of Forests Business Plan for 2000.

The Forestry Legislation is now being updated as part of an FAO funded project to facilitate the implementation of the policy among other issues.

13.2 Code of Logging Practice

The implementation of the Code of Logging Practice is a major undertaking for Vanuatu. There is an enormous amount of work required to ensure that the principles contained in the text of the Code are translated into actions in the forest. The amendments to the Forestry Act have been passed in 1997 and regulations approved in November

1998. Now the Department is making arrangements to train and licence all the forest operators in the country. In particular specialised training will be required for logging planners and logging supervisors as well as for machine operators and chainsaw operators. A cultural change in the way logging operations are carried out is required and this will probably take several years to fully implement. The Department is working towards full compliance with the Code by the end of 2000. With assistance from AusAID, the Department has hired an Industry Training Officer for 2000 after the end of the VSFUP. His task is to work with industry field workers to make sure that all necessary skills and information on the requirements of the code is available to the industry.

Landowners also require training and awareness about the Code of Logging Practice as in some cases they undertake work that is not in accordance with the principles of the Code. This work is done by field Forest Officers and also by some NGO's such as FSP through their Eco-Timber project.

13.3 Forest research

There is an urgent need to undertake research into the silvicultural characteristics of the native species of Vanuatu, both in terms of natural regeneration processes and growth rates as well as establishment and growth under plantation conditions. The research will need to be applied research, involving a landowner awareness program to ensure that the knowledge is spread to those involved in logging.

13.4 Development of Forest Management Plans

There is a need to develop Forest Management Plans to implement the National Forest Policy. These should act as a link between the national policy and the Code of Logging Practice at an operational level.

13.5 Other priority activities include:

Refinement and implementation of land use planning and identification of a permanent forest estate.

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14 Priority regional activities to be implemented

14.1 Development of regional policies on exchange of plant material with potential pharmaceutical properties and intellectual property rights.

There are some plants in the Pacific that have significant potential for medicinal purposes. The true extent of this is not known but our ancestors have been using many plants for years to cure or prevent diseases. However, these plants and the indigenous knowledge are not protected from interested companies or countries that may want to use these plants or patent them. There is an urgent need to develop intellectual property rights so some benefits can be channelled back to the people or location where these plants originates. This would be sensibly developed on a regional basis as the issue is too big or complex for each small country to tackle on our own and the context is similar enough to allow efficiencies in scale.

14.2 Develop regional criteria and indicators and standards for certification

The separate but linked issues of developing Criteria and Indicators for sustainable forest management and growing pressure for Certification of forest products are two of the challenging issues facing forestry development in the Pacific. With the increase demand for certification from the developed countries especially the consumers, PIC have to develop their own standards. PIC cannot depend on the criteria and standards developed by FSC or other organisations because the standard might be too high which might rule out the PICs.

14.3 Development of demonstration forests for Reduced Impact Logging (RIL) and Silvicultural prescriptions

Demonstration forests complement the work proposed above and are very useful for raising awareness of all stakeholders from landowners, industry representatives to politicians. The first demonstration forest in Vanuatu was established in mid 1997 and has proved to be extremely valuable to demonstrate improved regeneration. Several visits to the Forari site in Port Vila Vanuatu as part of the regional training for Reduced Impact Logging techniques

in February 1999 and the Heads of Forestry Consultation in July 1999 has impressed the participants and raised their understanding of the importance of demonstration forests.

14.4 Regional Mangrove research

Vanuatu has around 2,500 ha total terrestrial component of mangroves. Under the National Forest Policy mangrove systems of Vanuatu will be conserved and any utilisation of mangrove species tightly controlled. The Department of Forests has prepared a project proposal for mangrove research but at this stage the project has not received donor funding. It may be opportune to consider it as part of a wider regional approach to mangrove conservation and management. The project aims to research and develop an appropriate management system, in participation with landowners and local communities (and in particular the peoples of the Maskelyne Islands) for the sustained utilisation and conservation of the mangroves. 80% of all Mangrove species in Vanuatu occur in the Maskelyne Islands, Malakula. It will research traditional and non-traditional management practices to identify appropriate methodologies for sustainable utilisation of mangroves in order to achieve greater social and economic benefits for current and future generations.