

Pacific Forest Health Workshop, Suva, 31 March- 3 April 2003

ACIAR Project FST/2001/045 : Development of Forest Health Surveillance Systems for South Pacific Countries and Australia

COUNTRY REPORT – VANUATU

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1. INTRODUCTION

1.1 FOREST AREA

An inventory of forests was conducted from 1990 to 1993. It was found that around 70% of Vanuatu is covered by woody vegetation, half of which is closed forests and the remainder discontinuous scrub and thicket. Of this, only 10% is primary forest. The estimated commercially exploitable forest is about 35% of forest cover. This data, one could say, is fast changing. Vanuatu is utilizing more forests than what it is being planted. Some landowners are not keen on replanting and have used their logged forests areas for alternative activities like the rearing of cattle. Timber volumes in the forest are much lower than Papua New Guinea and are frequently 10-20m³/ha. Therefore the existing forest on moderate terrain is in high competition between logging companies, commercial and domestic agriculture in the local communities. The Vanuatu department of forest is working hard to administer both the volume harvested as well as refining harvesting techniques. In recent years timber harvesting in Vanuatu has been below the national total sustainable yield levels (68,000m³/year).

The sustainable management of forests in Vanuatu is complicated, among other things, by the fact that there is no government-owned forestland. Land is inalienable under the Constitution and landowners have the right to manage their land as they see fit. None of the timber exported to date is from State-owned plantations or land. The trees grown on current and formerly leased land for research purposes should be ready for harvest in 20 years or less. The species include *Cordia alliodora*, *Endospermum medullosum* whitewood, and *Pinus caribbea*. There is immense pressure on some of these timber species on the larger islands where timber harvesting concentrates. In 1998 for instance

92% of logs harvested were just of two species, *Endospermum medullosum* (whitewood) and *Antiaris toxicaria* (milk tree). Currently there are in excess of 1,000 hectares planted. A few investors including some landowners have grown timber too, a practice that is very encouraging and needs more support.

1.2 POLICY AND MANGAGEMENT OBJECTIVES

The Department of Forests is mandated to manage the forest resources. The Government of Vanuatu adopted a National Forest Policy in 1998. The Policy funnels the work of the Department of Forests and notifies other stakeholders of the objectives, policies and strategies for action in the sustainable management and conservation of forests countrywide. The Policy covers forest management, environment and conservation, landowners and communities, forest industries, afforestation and extension, forest research, forestry training and education, forest administration and forest revenue. The policy also offers specific regional policies for the main islands of Vanuatu. The national goal for the forest sector at present is to ensure the sustainable management of Vanuatu's forests to achieve greater social and economic benefits for current and future generations. All other objectives for forest management and conservation are directed towards this single goal.

1.3 MAJOR FOREST TYPES

Major areas of native forest occur on the larger islands of Santo, Malekula, Erromango and Efate with smaller areas on the islands. Vanuatu has a total of 205,307 ha of mid-height forest and 234,089 ha of low forest throughout the country. The details of the various vegetation classes found in Vanuatu are given in table 1.

Table 1:Vegetation cover of Vanuatu

Vegetation type	Area (ha)	Percentage of land area
Mid-height 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)*.

The plantation areas in Vanuatu are shown in Table 2. The local supply plantations are located throughout Vanuatu and range in age from 12 to 25 years. In the National Forest Policy, Vanuatu aims to establish 20,000ha of plantations over the next 20 years. Negotiations are continuing with several companies to encourage investment in commercial timber plantations. Some discussions have also been held lately about the possibility for engagement in wood-energy plantations.

Table 2:Area of plantations within Vanuatu

Type of Plantation	Area (ha)
Local Supply Plantations	1160
Aneityum Pine Plantation	890
Ipota Industrial Plantation	260
IFP Research Plantations	350
Melcoffee Whitewood Plantation	250
Total	2910

Source: *Vanuatu National Resource Inventory System (VANRIS)*.

2. MAJOR FOREST HEALTH PROBLEMS

2.1 INSECTS

In the native forests, there is very little available information regarding the specific problems caused by insects. Although Vanuatu has a research demonstration plot for plantation species, specific information is still unattainable due to lack of resources,

experts and guided research into forest health problems. Generally the most common insects are the various species of caterpillars and fruit flies. A moth (*Acathifaga vitiensis*) feeds on the seeds of *Agathis macrophylla* and *Endospermum medullosum*. A weevil that is yet to be identified, feeds on the seedlings of *Endospermum medullosum*.

Sycecurytoma species is a wasp that destroys the juvenile seeds of *Endospermum medullosum*.

Omiodes diemenalis is a polyphagous insect and is found to affect the leaves of various leguminous plants and especially the *Calophyllum* species as well as other species. The young leaves are spun together and larger leaves are rolled beginning at the tip. The larva feeds inside the rolled –up leaves therefore leaving the final-instar larvae to reduce the leaves to a skeleton.

Terminalia catappa is affected by *Selenothrips rubrocinctus*, which is highly polyphagous. It breeds and feeds mostly on the leaves and affects inflorescence and fruits/pods. *Pinnaspis strachani*, a similar insect affects the stems, leaves, fruit/pods and sometimes the whole *Terminalia* and other tree species such as *Mangifera*, *citrus*, *Prunus*, and *Acacia*. *Eudocima fullonia* feeds on a wide range of fruits including *Pometia Pinata* affecting the fruits leaving them to rot.

Aspidious destructor, a highly polyphagous insect causes scale and yellow spots where the larvae and adults settle, therefore leaving the entire leaf to turn from yellow to brown until it gradually falls. It affects *Myristica fragrans* and coconut palms by damaging leaves, stems, growing points and the fruits.

2.2 DISEASES

Cordicium sala monicolor is a common fungus that mainly affects the branches of trees by causing them to rot. *Phyllunus noxious*, a fungus, causes what is commonly known as pink disease, which rots the roots of species in the native forests and it is common in forest areas where there are always plenty of rainfall. It is also believed to affect *Cordia* species. The extent to which these diseases affect the forest could not be measured due to

lack of expertise and research. There is undoubtedly more that could be learnt about forest diseases. Vanuatu needs expertise in the area of entomology and other related areas.

2.3 ABIOTIC FACTORS

Forest fires, cyclones, earthquake, tidal waves and nutrient deficiencies do occur in Vanuatu but the damages they expound on the forest have not been evaluated or measured. Forest fire is a problem in Vanuatu, particularly during droughts. Again, there is little record on the occurrence and impacts of this disaster. Recently three areas of less than twenty hectares of native forest got fire on the island of Efate. This fire was manmade. Fires on other islands are seldom reported or assessed.

Cyclones are frequent in Vanuatu. They affect timber quality in natural forests by splitting and breaking trees and canopy, breaking off branches, and sometimes uprooting the whole trees. There have been several cyclones occurrences over the last two decades. Earthquakes are frequent, but surveys on the damages caused to forests were never carried out.

3. RESOURCES AVAILABLE FOR FOREST PROTECTION

Forest health surveillance requires an integrated and multi-sectoral approach. There are human resources available in the Vanuatu department of Forests and line agencies like the Department of Quarantine, Disaster Management Office and the Environment Unit. There are however no specialists, such as forest entomologists and pathologists. There is a lack of integrated forest protection program, one that would require the input of the responsible sectors and stakeholders. For instance, fire falls within the domain of the Vanuatu Fire Services but to date much of the focus of this agency has been on tackling urban fires and protecting properties.

The Vanuatu department of Forests does not have any Laboratory at present. The Department of Quarantine has equipment as well as an existing pest management program in place. The Quarantine Department works on timber fumigation but nothing is

done on the surveillance of forest pest and diseases on commercial and non-commercial tree species. Their focus is however, based on vegetable and root crops and very few edible fruit tree species, namely citrus and *quajava* (guava).

4. CURRENT FOREST HEALTH SURVEILLANCE ACTIVITIES

There is no forest health surveillance program in place but the industrial forest demonstration trials on plantations also involve attempts, given limited resources, to identify common pests and diseases that pose threats to the forest.

5. QUARANTINE MEASURES

The Vanuatu Plant Protection Act of 1997 mandates the Department of Quarantine to deal with the export and import of raw plant materials to and from Vanuatu. The Department of Quarantine is yet to intercept serious pests and diseases. The Forest Act and National Forest Policy do not specifically provide measures relating to quarantine.

6. KEY REFERENCES ON FOREST HEALTH

Vanuatu has no specific references on forest health issues. Nevertheless, some useful information on the subject can be obtained from the Department of Quarantine and Horticulture of Vanuatu. The Department of Forests may also be contacted.

7. LIST OF ESTABLISHED PESTS AND DISEASES

Species	Common Name	Main Hosts	Type of Damage
Insects			
<i>Acathifaga vitiensis</i>	Moth	<i>Agathis macrophylla</i>	Fruit infestation
<i>Acathifaga vitiensis</i>	Moth	<i>Endospermum medullosum</i>	Fruit infestation
<i>Sycecurytoma spp</i>	Weevil	<i>Endospermum medullosum</i>	Seedling wilt
<i>Ceroplastes rubens</i>	Red wax scale	<i>Pinus caribea</i>	Defoliation
<i>Aspidiotus destructor</i>	Coconut scale	<i>Myristica fragrans, Cocos nucifera</i>	Defoliation
<i>Ceroplastes rubens</i>	Red wax scale	<i>Myristica fragrans</i>	Defoliation
<i>Leptocorisa acuta</i>	Rice seed bug	<i>Myristica fragrans</i>	Defoliation
<i>Tribolium castaneum</i>	Red flour beetle	<i>Myristica fragrans</i>	Defoliation
<i>Selonthrips rubrocinctus</i>	Red banded thrips	<i>Terminalia catappa</i>	Defoliation
<i>Pinnaspis strachani</i>	Lesser snow scale	<i>Terminalia fatappa</i>	Defoliation
<i>Adoretus versutus</i>	Rose beetle	<i>Terminalia catappa</i>	Defoliation
<i>Heliothrip haemorrhoidalis</i>	Black tea thrips	<i>Terminalia catappa</i>	Defoliation
<i>Bactrocera quadrisetosa</i>	Fruitfly	<i>Pometia pinnata</i>	Infested fruits
<i>Adoretus versus harold</i>	Rose beetle	<i>Pometia pinnata</i>	Defoliation
<i>Eudocima fullonia</i>	Fruit piercing moth	<i>Pometia pinnata</i>	Shoot blight and seedling wilt
<i>Omiodes diemenalis</i>	Soybean leaf folder	<i>Calophyllum spp</i>	Defoliation