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**Food and Agriculture Organization of the United Nations**

**GLOBAL FOREST RESOURCES  
ASSESSMENT**

**COUNTRY REPORTS**

**VANUATU**

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## The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. This country report forms part of the Global Forest Resources Assessment 2005 (FRA 2005), which is the most comprehensive assessment to date. More than 800 people have been involved, including 172 national correspondents and their colleagues, an Advisory Group, international experts, FAO staff, consultants and volunteers. Information has been collated from 229 countries and territories for three points in time: 1990, 2000 and 2005.

The reporting framework for FRA 2005 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes more than 40 variables related to the extent, condition, uses and values of forest resources. More information on the FRA 2005 process and the results - including all the country reports - is available on the FRA 2005 Web site ([www.fao.org/forestry/fra2005](http://www.fao.org/forestry/fra2005)).

The Global Forest Resources Assessment process is coordinated by the Forestry Department at FAO headquarters in Rome. The contact person for matters related to FRA 2005 is:

Mette Løyche Wilkie  
Senior Forestry Officer  
FAO Forestry Department  
Viale delle Terme di Caracalla  
Rome 00100, Italy

E-mail: [Mette.LoycheWilkie@fao.org](mailto:Mette.LoycheWilkie@fao.org)

Readers can also use the following e-mail address: [fra@fao.org](mailto:fra@fao.org)

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The Global Forest Resources Assessment 2005 Country Report Series is designed to document and make available the information forming the basis for the FRA 2005 reports. The Country Reports have been compiled by officially nominated country correspondents in collaboration with FAO staff. Prior to finalisation, these reports were subject to validation by forestry authorities in the respective countries.

## **Report preparation and contact persons**

### **This report was prepared by:**

Mr. Rexon M Virnamangga  
Senior Forest Officer Planning  
Tel: 00678-23856 and 00678-23171  
Fax: 00678-25051  
E-mail: [forestry@vanuatu.gov.vu](mailto:forestry@vanuatu.gov.vu)

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# 1 Table T1 – Extent of Forest and Other wooded land

## 1.1 FRA 2005 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds <i>in situ</i> . It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified as “Forest”, spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds <i>in situ</i> ; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as “Forest” or “Other wooded land”.
Other land with tree cover (Subordinated to “Other land”)	Land classified as “Other land”, spanning more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.

## 1.2 National data

### 1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable (s)	Year (s)	Additional comments
Baldwin P. Hidson J.Siebuht J. Pedro F. 1993. Forest Resources of Vanuatu	H	Forest, OWL, Other Land	1992	A summary of the forest resources of Vanuatu
FAOSTAT <a href="http://apps.fao.org/faostat/form?collection=LandUse&amp;Domain=Land&amp;servlet=1&amp;hasbulk=0&amp;version=ext&amp;language=EN">http://apps.fao.org/faostat/form?collection=LandUse&amp;Domain=Land&amp;servlet=1&amp;hasbulk=0&amp;version=ext&amp;language=EN</a>	H	Land area, Inland water, Total area	2000	

### 1.2.2 Classification and definitions

National Class	Definition
<b>Midheight forest (20-30m)</b>	Midheight forest with emergents (Fme) Midheight forest with Agathis- Calophyllum (FgCI) Midheight forest with Calophyllum (FmeCI) Midheight forest with Calophyllum-Agathis (FmeCIAg) Midheight forest with Klainhovia hospital (FmKh) Midheight forest with small to medium crowns (Fmm1) Midheight forest with small to medium crowns; medium dense remnants (Fmm2) Midheight forest with small to medium crowns; sparse remnants (Fmm3) Midheight forest with an open canopy (Fmo) Midheight forest with an open canopy (Fmo) Midheight forest with an open canopy; dense remnants (Fmo1) Midheight forest with an open canopy; medium dense remnants (Fmmo3) Midheight forest with an open canopy, with Calophyllum; local Agathis (FmoCI) Midheight forest, moderate open canopy, with emergents (Fmoe) Midheight forest with small crowns (Fms) Midheight forest with Metrosideros- Wwinmannia (FmW)

<b>Low forest (10-20m)</b>	<p>Low Forest (FI)  Low Forest with <i>Acacia spirorbis</i> (FIAs)  Low Forest with <i>Barringtonia asiatica</i> (FIBa)  Low Forest dominated by <i>Casuarina equisetifolia</i> (FICe)  Low Forest with <i>Calophyllum neo-ebrudicum</i> (FICI)  Low Forest with <i>Metrosideros</i> (FIM)  Low Forest with <i>Metrosideros-Weinmannia</i> (FIMx)  Low Forest with a high proportion of deciduous trees (Fid)  Low Forest with emergents (Fle)  Low Forest with <i>Kleinhovia hospital</i> (FIKh)  Low Forest with medium crowns (Flo)  Low Forest with an open canopy, dominated by <i>Acacia spirorbis</i> (FloAs)  Low Forest with small crowns (Fls)  Low Forest with; swampy (Flsw)</p>
<b>Woodland (&lt;10m)</b>	Woodland dominated by <i>Acacia spirorbis</i> (Was)
<b>Thickets (3-8m)</b>	<p>Ticket of unspecified composition (T)  Thicket with <i>Agathis-Calophyllum</i> (Tag)  Ticket dominated by <i>Acacia spirorbis</i> (TAs)  Ticket dominated by <i>Acacia spirorbis</i> and <i>Casuarina equisetifolia</i> (TAsCe)  Ticket dominated by <i>Hibiscus tiliaceus</i> (TB)  Ticket containing <i>Hibiscus tiliaceus</i> and palms (TBPI)  Ticket dominated by <i>Casuarina equisetifolia</i> (Tce)  Ticket dominated by tree ferns (TF)  Ticket dominated by tree ferns and <i>Casuarina equisetifolia</i> (TFce)  Ticket dominated by tree ferns and palms (TFPI)  Ticket dominated by <i>Leucaena</i> (TL)  Ticket dominated by <i>Leucaena</i> and <i>Acacia spirorbis</i> (TLAs)  Ticket of <i>Leucaena</i> and mixed species (TLMx)  Ticket with <i>Metrosideros-Weimannia</i> (TMW)  Ticket with <i>Metrosideros</i> and <i>Pandanus</i> (TMP)  Ticket of mixed species (TMx)  Ticket of mixed species and palms (TMxPI)  Ticket dominated by <i>Pandanus</i> and tree ferns (TPF)  Ticket dominated by <i>Pandanus</i> (TP)  Ticket dominated by <i>Psidium goyava</i> (TPg)  Ticket dominated by palms and <i>Casuarina equisetifolia</i> (TPICE)</p>
<b>Scrub (&lt;3m)</b>	<p>Scrub of unspecified composition (S)  Low scrub of <i>Vaccinium-Cyperaceae</i> (SV)</p>
<b>Grassland</b>	<p>Grassland and/ or herbaceous communities (G)  Tall grassland (Gt)</p>
<b>Swamp communities</b>	<p>Swamps community complex (Sw)  Herbaceous swamp (Swg)  Woody swamp (Sww)  Sago swamp (SwMs)</p>
<b>Mangroves</b>	Mangroves communities (M)
<b>Bare ground/human made</b>	Man made or bare ground

### 1.2.3 Original data

Reference year 1992

Vegetation type	Area (ha)
Midheight forest (20-30m)	205307
Low forest (10-20m)	234089
Woodland (<10m)	386
Thickets (3-8m)	433941
Scrub (<3m)	45018
Grassland	51128
Swamp communities	2261
Mangroves	2519
Bare ground/human made	252256
<b>Total land area</b>	<b>1226905</b>

## 1.3 Analysis and processing of national data

### 1.3.1 Calibration

The national total land area does not correspond to the official FAOSTAT figures, so a calibration factor of 1.0065 has been applied.

Source	Total land area
National data	1226905
FAOSTAT	1219000
Calibration factor	1.00648

Calibrated national data

Vegetation type	Area (1000 ha)
Midheight forest (20-30m)	204.0
Low forest (10-20m)	232.6
Woodland (<10m)	0.4
Thickets (3-8m)	431.1
Scrub (<3m)	44.7
Grassland	50.9
Swamp communities	2.2
Mangroves	2.5
Bare ground/human made	250.6
<b>Total land area</b>	<b>1219</b>

### 1.3.2 Estimation and forecasting

Not applicable, data are only available for one point in time.

#### 1.4 Reclassification into FRA 2005 classes

National Class	Forest	OWL	Other land	OLWTC
Midheight forest	100%			
Low forest	100%			
Woodland	100%			
Thickets		100%		
Scrub		100%		
Grassland			100%	
Swamp			100%	
Mangroves	100%			
Man made			100%	

#### 1.5 Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Forest	440	440	440
Other wooded land	476	476	476
Other land	304	304	304
...of which with tree cover	NDA	NDA	NDA
Inland water bodies	0	0	0
<b>TOTAL</b>	<b>1220</b>	<b>1220</b>	<b>1220</b>

#### 1.6 Comments to National reporting table T1

Due to the fact that only one national forest inventory has been carried out in Vanuatu it is not possible to make trend estimates.



## 2 Table T9 – Diversity of tree species

### 2.1 FRA 2005 Categories and definitions

Category	Definition
Number of native tree species	The total number of native tree species that have been identified within the country.
Number of critically endangered tree species	The number of native tree species that are classified as “Critically endangered” in the IUCN red list.
Number of endangered tree species	The number of native tree species that are classified as “Endangered” in the IUCN red list.
Number of vulnerable tree species	The number of native tree species that are classified as “Vulnerable” in the IUCN red list.

### 2.2 National data

#### 2.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
IUCN <a href="http://www.fao.org/forestry/site/20747/en">Http://www.fao.org/forestry/site/20747/en</a>	H	Vulnerable species, Endangered species, Critically endangered species	2000	

#### 2.2.2 Original data

##### Critically endangered species in the IUCN Red List

1. *Carpoxyton macrospermum*

##### Endangered species in the IUCN Red List

1. *Cyphosperma voutmelensis*
2. *Veitchia montgomeryana*

##### Vulnerable species in the IUCN Red list

1. *Agathis silbae*
2. *Intsia bijuga*
3. *Palaquium neo-ebudicum*
4. *Pterocarpus indicus*
5. *Cycas seemannii*

### 2.3 Data for National reporting table T9

FRA 2005 Categories	Number of species (year 2000)
Native tree species	NDA
Critically endangered tree species	1
Endangered tree species	2
Vulnerable tree species	5

## 2.4 Comments to National reporting table T9

### Critically endangered species in the IUCN Red List

#### 1. *Carpoxylon macrospermum*

Aneityum, Tanna and Futuna. Approximately 40 individuals exist in the wild and another 120 mature trees are cultivated around villages. Regeneration is moderate.

### Endangered species in the IUCN Red List

#### 1. *Cyphosperma voutmelensis*

It is restricted to the Cumberland Peninsula and Espírito Santo. Less than 100 mature individuals are known.

#### 2. *Veitchia montgomeryana*

Is confined to Efaté Island. Only small subpopulations remain.

### Vulnerable species

#### 1. *Agathis silbae*

The Forestry Department in Vanuatu recognise this species as a synonym of *A. macrophylla*, which in turn is synonymous with *A. vitiensis*. The taxon encompassing *A. silbae* according to the SSC Conifer Specialist Group is confined to the island of Santo.

#### 2. *Intsia bijuga* (Borneo Teak)

#### 3. *Palaquium neo-ebudicum*

#### 4. *Pterocarpus indicus* (Burmese Rosewood or Red Sandalwood)

#### 5. *Cycas seemannii*

### 3 Table T11 – Wood removal

#### 3.1 FRA 2005 Categories and definitions

Category	Definition
Industrial wood removal	The wood removed (volume of roundwood over bark) for production of goods and services other than energy production (woodfuel).
Woodfuel removal	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

#### 3.2 National data

##### 3.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAOSTAT <a href="http://apps.fao.org/faostat/form?collection=LandUse&amp;Domain=Land&amp;service=I&amp;hasbulk=0&amp;version=ext&amp;language=EN">http://apps.fao.org/faostat/form?collection=LandUse&amp;Domain=Land&amp;service=I&amp;hasbulk=0&amp;version=ext&amp;language=EN</a>	M	-Industrial roundwood production,  -Wood fuel production	1988-1992 1998-2003  1988-1992 1998-2003	

##### 3.2.2 Classification and definitions

No definitions available.

##### 3.2.3 Original data

Industrial roundwood production (m<sup>3</sup> under bark)

1988	1989	1990	1991	1992	
39200	39200	39200	39200	39200	
1998	1999	2000	2001	2002	2003
33800	41000	40000	28000	28000	28000

Wood fuel production (m<sup>3</sup> under bark)

1988	1989	1990	1991	1992	
24000	24000	24000	24000	24000	
1998	1999	2000	2001	2002	2003
24000	91000	91000	91000	91000	91000

FAOSTAT gives values under bark. To get the volume over bark, these values are multiplied by 1.15. The resulting original data are given below:

**Industrial roundwood production (1000m<sup>3</sup> over bark)**

1988	1989	1990	1991	1992	
45	45	45	45	45	
1998	1999	2000	2001	2002	2003
39	47	47	47	47	47

**Wood fuel production (1000m<sup>3</sup> over bark)**

1988	1989	1990	1991	1992	
28	28	28	28	28	
1998	1999	2000	2001	2002	2003
28	105	105	105	105	105

### 3.3 Analysis and processing of national data

#### 3.3.1 Estimation and forecasting

The average yearly data from 1988-1992 was used as the estimate for 1990 and the average yearly data from 1998-2002 was used as the estimate for 2000. The original data for 2003 was used as the estimate for 2005.

#### 3.4 Reclassification into FRA 2005 classes

Industrial roundwood -----→ 100% industrial wood removal.

Woodfuel production -----→ 100% woodfuel removal

#### 3.5 Data for National reporting table T11

FRA 2005 Categories	Volume in 1000 cubic meters of roundwood over bark					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Industrial roundwood	45	45	47			
Woodfuel	28	90	105			
<b>TOTAL for Country</b>	<b>73</b>	<b>135</b>	<b>152</b>	<b>NDA</b>	<b>NDA</b>	<b>NDA</b>