



Forestry Department

Food and Agriculture Organization of the United Nations

**GLOBAL FOREST RESOURCES
ASSESSMENT**

COUNTRY REPORTS

LIBERIA

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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).

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:

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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.

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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
Nicolas BAYOL et Jean-François CHEVALIER.. 2004. Current state of the forest cover in Liberia; Forest information critical to decision making study report. World Bank Washington USA	H	Forest Cover	1979 and 2000	The images chosen as reference for 2000 data were the 1999-2002 ortho-rectified set of images

1.2.2 Classification and definitions

National class	Definition
1. Urban areas	No definition
2.1 Predominant rural agricultural domain	The tree is still present in the agricultural landscape: to be found singly, under the form of small forests clusters or along water ways and streams, but agriculture is present all over
2.2 Agricultural area with small forest presence	Presence of original forest more market, small residual forest massifs appear alongside agricultural areas and cover 10 to 20% of the surface area. The remaining forest surfaces are subjected to agricultural pressure and shrink every year.
2.3 Mixed Agricultural and Forest Area	Forest cover 20 to 50% of the surface, but agricultural dynamics is already taking over the forests. Agriculture/forest equilibrium can still be found although with great difficulty without external assistance.
3.1 Agriculture degraded forest	The forest area component always represent over 50% of the surface. Partly occupied with signs of human occupation.

3.2 Open dense forest	This class covers all the forests presenting evidence of harvesting
3.3 Closed dense forests	Not disturbed by recent logging activities. This class also covers old –logged forests
5. Free water	
6. Savanna or bare soil	This class covers areas without vegetation like inselberg, or savannas
7. Coastal ecosystem complex	This class gathers different types of vegetation which can be found on the coast. Ex: Mangroves, forests on sandy coastal barriers islands.
8. Agro-industrial plantation	

1.2.3 Original data

Original data for reference year 1979

National	Area in hectares								Total (2)
	Forests (1)	Extensive shifting cultivation	Intensive shifting cultivation	Other cultivated areas	Plantations, tree crops, small holding	Savanna grass with shifting cultivation	Towns and settlements	Water and Marsh	
1. Urban areas	ns	ns	20823	ns	5053	0	13554	ns	39430
2.1 Predominant rural agricultural domain	15857	30092	297313	3241	21184	ns	ns	ns	367687
2.2 Agricultural area with small forest presence	275987	585088	1827877	13302	27118	17103	ns	2134	2748609
2.3 Mixed Agricultural and Forest Area	366431	415440	378341	n.s	ns	ns	0	ns	1160212
3.1 Agriculture degraded forest	395204	305310	101180	n.s	ns	0	0	ns	801694
3.2 Open dense forest	879294	75412	9877	0	0	0	0	ns	964583
3.3 Closed dense forests	1846147	204749	27946	n.s	ns	ns	0	0	2078842
6. Savanna or bare soil	5391	ns	3329	0	ns	ns	0	ns	8720
7. Coastal ecosystem complex	0	6939	40236		2565	0	ns	11514	49740
8. Agro-industrial plantation	6804	3250	69844		83378	0	0	0	163276
Total	3791115	1626280	2776766	16543	139298	17103	13554	13648	8382793

Notes: Only column 1 and 2 will be used for reclassification

Original data for reference year 2000

National Class	Area in hectares
1. Urban areas	46 047
2.1 Predominant rural agricultural domain	436 747
2.2 Agricultural area with small forest presence	3 042 091
2.3 Mixed Agricultural and Forest Area	1 317 873
3.1 Agriculture degraded forest	949 615
3.2 Open dense forest	1 013 993
3.3 Closed dense forests	2 424 078
6. Savanna or bare soil	13 312
7. Coastal ecosystem complex	161 390
8. Agro-industrial plantation	178 294
Total Land Area	9 583 440

1.3 Analysis and processing of national data**1.3.1 Calibration**a. Reference year 1979

Country land area in ha	8 382 793
FAO/UN STATS in ha	9 632 000
Calibration factor	1.1490204

Results after calibrating data for reference year 1979

National Classes	Calibrated Total area in hectares (2)	...Of which is forest (1)
1. Urban areas	45 306	n.s
2.1 Predominant rural agricultural domain	422 480	18 220
2.2 Agricultural area with small forest presence	3 158 208	317 115
2.3 Mixed Agricultural and Forest Area	1 333 107	421 037
3.1 Agriculture degraded forest	921 163	454 097
3.2 Open dense forest	1 108 326	1 010 327
3.3 Closed dense forests	2 388 632	2 121 261
6. Savanna or bare soil	10 019	6 194
7. Coastal ecosystem complex	57 152	0
8. Agro-industrial plantation	187 607	7 818
Total land area	9 632 000	4 356 068

b. Calibrating data for reference 2000

Country Land area in ha	9 583 440
FAO STATS Land area in ha	9 632 000
Calibration factors	1.005067074

Results after calibrating data for reference year: 2000

National Classes	Calibrated Area in hectares
	2000
1. Urban areas	46 280
2.1 Predominant rural agricultural domain	438 960
2.2 Agricultural area with small forest presence	3 057 506
2.3 Mixed Agricultural and Forest Area	1 324 551
3.1 Agriculture degraded forest	954 427
3.2 Open dense forest	1 019 131
3.3 Closed dense forests	2 436 361
6. Savanna or bare soil	13 379
7. Coastal ecosystem complex	162 208
8. Agro-industrial plantation	179 197
Total land area	9 632 000

1.4 Reclassification into FRA 2005 classes**Reference year 1979**

All the areas listed in column 1 for reference year 1979 are classified as forests. However, for the classes 3.2 and 3.3 (open and closed forest), the total area is classified as forest. The results are as follows:

National Classes	Calibrated area in hectares (2)	...Of which is forest (1)
1. Urban areas	45 306	n.s
2.1 Predominant rural agricultural domain	422 480	18 220
2.2 Agricultural area with small forest presence	3 158 208	317 115
2.3 Mixed Agricultural and Forest Area	1 333 107	421 037
3.1 Agriculture degraded forest	921 163	454 097
3.2 Open dense forest	1 108 326	1 108 326
3.3 Closed dense forests	2 388 632	2 388 632
6. Savanna or bare soil	10 019	6 194
7. Coastal ecosystem complex	57 152	0
8. Agro-industrial plantation	187 607	7 818
Total land area	9 632 000	4 721 438

Notes:

n.s means insignificant

1. Corresponds to column 1 for reference year 1979 (except for class 3.2. and 3.3 which correspond to column 2.
2. Correspond to column 2 for reference year 1979.

The difference between the total area of agro-industrial plantations (187 607) and the forest plantations (7 818) equalling 179 499 ha will be reclassified as other land with tree cover.

Reclassifying data for reference year 2000

National Classes	Forests	OWL	OL	OLWTC
1. Urban areas			100%	
2.1 Predominant rural agricultural domain			100%	
2.2 Agricultural area with small forest presence			100%	
2.3 Mixed Agricultural and Forest Area			100%	
3.1 Agriculture degraded forest			100%	
3.2 Open dense forest	100%			
3.3 Closed dense forests	100%			
6. Savanna or bare soil			100%	
7. Coastal ecosystem complex			100%	
8. Agro-industrial plantation			100%	100%

Results after reclassifying data for reference year 2000

National Classes	Forests	OWL	OL	OLWTC
1. Urban areas	0	0	46 280	0
2.1 Predominant rural agricultural domain	0	0	438 960	0
2.2 Agricultural area with small forest presence	0	0	3 057 506	0
2.3 Mixed Agricultural and Forest Area	0	0	1 324 551	0
3.1 Agriculture degraded forest	0	0	954 427	0
3.2 Open dense forest	1 019 131	0	0	0
3.3 Closed dense forests	2 436 361	0	0	0
6. Savanna or bare soil	0	0	13 379	0
7. Coastal ecosystem complex	0	0	162 208	0
8. Agro-industrial plantation	0	0	179 197	179 197
Total	3 455 492	0	6 176 508	179 197

Summarising data for reference year 1979 and 2000 gives:

FRA 2005 categories	Area in hectares	
	1979	2000
Forests	4 721 438	3 455 492
OWL	0	0
OL	4 910 561	6 176 508
OLWTC	179 499	179 197
Total land area	9 632 000	9 632 000

Notes: There were categories in the 1979 breakdown which could qualify as OWL, however, because this breakdown of land use was not available in 2000, it was decided to rather allocate all the classes to OL as per the definition.

1.4.1 Estimation and forecasting

FRA 2005 categories	Area in hectares		
	1990	2000	2005
Forests	4 058 324	3 455 492	3 154 076
OWL	0	0	0
OL	5 573 676	6 176 508	6 477 924
OLWTC	179 499	179 197	179 126
Total land area	9 632 000	9 632 000	9 632 000

1.5 Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Forest	4 058	3 455	3 154
Other wooded land	0	0	0
Other land	5 574	6 177	6 478
...of which with tree cover ¹⁾	179	179	179
Inland water bodies	1 505	1 505	1 505
TOTAL	11 137	11 137	11 137

- 1) Area of “Other land with tree cover” is included in the area reported under “Other land” and should therefore be excluded when calculating the total area for the country.

2 Table T2 – Ownership of Forest and Other wooded land

2.1 FRA 2005 Categories and definitions

Category	Definition
Private ownership	Land owned by individuals, families, private co-operatives, corporations, industries, religious and educational institutions, pension or investment funds, and other private institutions.
Public ownership	Land owned by the State (national, state and regional governments) or government-owned institutions or corporations or other public bodies including cities, municipalities, villages and communes.
Other ownership	Land that is not classified either as “Public ownership” or as “Private ownership”.

2.2 National data

2.2.1 Original data

Insufficient data

2.3 Analysis and processing of national data

2.4 Data for National reporting table T2

FRA 2005 Categories	Area (1000 hectares)			
	Forest		Other wooded land	
	1990	2000	1990	2000
Private ownership	ID	ID	ID	ID
Public ownership	ID	ID	ID	ID
Other ownership	ID	ID	ID	ID
TOTAL	ID	ID	ID	ID

3 Table T3 – Designated function of Forest and Other wooded land

3.1 FRA 2005 Categories and definitions

Types of designation

Category	Definition
Primary function	A designated function is considered to be primary when it is significantly more important than other functions. This includes areas that are legally or voluntarily set aside for specific purposes.
Total area with function	Total area where a specific function has been designated, regardless whether it is primary or not.

Designation categories

Category / Designated function	Definition
Production	Forest / Other wooded land designated for production and extraction of forest goods, including both wood and non-wood forest products.
Protection of soil and water	Forest / Other wooded land designated for protection of soil and water.
Conservation of biodiversity	Forest / Other wooded land designated for conservation of biological diversity.
Social services	Forest / Other wooded land designated for the provision of social services.
Multiple purpose	Forest / Other wooded land designated to any combination of: production of goods, protection of soil and water, conservation of biodiversity and provision of social services and where none of these alone can be considered as being significantly more important than the others.
No or unknown function	Forest / Other wooded land for which a specific function has not been designated or where designated function is unknown.

3.2 National data

3.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
www.wcmc.org	M	Protected areas	2003	
Nicolas BAYOL et Jean-Francois CHEVALIER.. 2004. Current state of the forest cover in Liberia; Forest information critical to decision making study report. World Bank Washington USA	H	Concession area and plantation area	2000	

3.2.2 Original data

Production areas

a) Concession area

	Initial area(ha)(1990)	Remaining area in ha (2000)
Oriental timber company on 2 concessions	1 273 947	1 219 765
Yekepa logging ind	94 299	80 863

Notes: Initial area is assumed to be valid for 1990 and remaining area valid for 2000

b. Plantations

	1990	2000
Calibrated Plantations area in ha (1)	7 818	7 818

Notes: 1.Area assumed to be constant

Protected areas: 2003

Category	Area in 1000 ha
Nature reserves, wilderness area and national parks	129
Area managed for sustainable use and unclassified area	1523

3.3 Analysis and processing of national data

3.3.1 Estimation and forecasting

National Classes	Area in hectares		
	1990	2000	2005
Oriental timber company on 2 concessions	1 273 947	1 219 765	1 219 765
Yekepa logging industry	94 299	80 863	80 863
plantations	7 818	7 818	7 818
Nature reserves, wilderness area and national parks	129 000	129 000	129 000
Area managed for sustainable use and unclassified area	1 523 000	1 523 000	1 523 000
Others remaining forests	1 030 260	495 046	193 630
Total	4 058 324	3 455 492	3 154 076

3.4 Reclassification into FRA 2005 classes

- Plantation and concession area= Production area. 2000 and 2005 will be assumed to remain constant
- Nature reserves, wilderness area and national parks= Conservation of biodiversity
- Area managed for sustainable use and unclassified area= multiple purpose
- Remaining area= unknown designation
- OWL= Unknown designation

FRA 2005 categories	Area in hectares		
	1990	2000	2005
Production	1 376 064	1 308 446	1 308 446
Conservation	129 000	129 000	129 000
Multiple purpose	1 523 000	1 523 000	1 523 000
Unknown designation	1 030 260	495 046	193 630
Total Forest area	4 058 324	3 455 492	3 154 076

3.5 Data for National reporting table T3

FRA 2005 Categories / Designated function	Area (1000 hectares)					
	Primary function			Total area with function		
	1990	2000	2005	1990	2000	2005
Forest						
Production	1 376	1 308	1 308			
Protection of soil and water						
Conservation of biodiversity	129	129	129			
Social services						
Multiple purpose	1 523	1 523	1 523	not appl.	not appl.	not appl.
No or unknown function	1 030	495	194	not appl.	not appl.	not appl.
Total - Forest	4 058	3 455	3 154	not appl.	not appl.	not appl.
Other wooded land						
Production						
Protection of soil and water						
Conservation of biodiversity						
Social services						
Multiple purpose				not appl.	not appl.	not appl.
No or unknown function				not appl.	not appl.	not appl.
Total – Other wooded land	0	0	0	not appl.	not appl.	not appl.

4 Table T4 – Characteristics of Forest and Other wooded land

4.1 FRA 2005 Categories and definitions

Category	Definition
Primary	Forest / Other wooded land of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Modified natural	Forest / Other wooded land of naturally regenerated native species where there are clearly visible indications of human activities.
Semi-natural	Forest / Other wooded land of native species, established through planting, seeding or assisted natural regeneration.
Productive plantation	Forest / Other wooded land of introduced species, and in some cases native species, established through planting or seeding mainly for production of wood or non wood goods.
Protective plantation	Forest / Other wooded land of native or introduced species, established through planting or seeding mainly for provision of services.

4.2 National data

4.2.1 Data sources

4.2.2 Original data

T1 was used as an input

4.3 Analysis and processing of national data

4.4 Reclassification into FRA 2005 classes

1. Plantation = Productive plantation. They area assumed to be constant since 1979
2. Conservation=Primary forests
2. The rest modified natural

4.5 Data for National reporting table T4

FRA 2005 Categories	Area (1000 hectares)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Primary	129	129	129			
Modified natural	3 921	3 318	3 017			
Semi-natural						
Productive plantation	8	8	8			
Protective plantation						
TOTAL	4 058	3 455	3 154	0	0	0

5 Table T5 – Growing stock

5.1 FRA 2005 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.
Commercial growing stock	The part of the growing stock of species that are considered as commercial or potentially commercial under current market conditions, and with a diameter at breast height of Z cm or more.

5.2 National data

5.3 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Atlanta consult. 1989. Inventaire Forestier de la Guinee Forestiere. Rapport de synthese. Atlanta consult-Industrie- und Unternehmensberatung GmbH)	M	Volume/ha	1989	The inventory provided volume data by sub region and by forests types (dense, medium and open forest), measured over bark from minimum DBH of 20cm

5.3.1 Original data

Country/Area	Total forest 2000	Volume	
		by area	total
	000 ha	m ³ /ha	M m ³
Liberia	3,481	158	701

Area from T1

	1990	2000	2005
Forests area in 1000 ha	4 058	3 455	3 154

5.4 Analysis and processing of national data

Multiplying m³/ha by the total area from T1 gives:

	Growing stock in Mm3		
	1990	2000	2005
Growing stock	641.22	545.97	498.34

Calculating commercial growing stock

T 3 will be used as input

	1990	2000	2005
Production area in 1000 ha from T3	1 376	1 308	1 308

Multiplying volume/ha by the production area gives commercial growing stock

	Growing stock in Mm3		
	1990	2000	2005
Commercial	217.42	206.73	206.73

5.5 Data for National reporting table T5

FRA 2005 Categories	Volume (million cubic meters over bark)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Growing stock	641.22	545.97	498.34	ID	ID	ID
Commercial growing stock	217.42	206.73	206.73	ID	ID	ID

Specification of country threshold values	Unit	Value	Complementary information
1. Minimum diameter at breast height of trees included in Growing stock (X)	cm		
2. Minimum diameter at the top end of stem (Y) for calculation of Growing stock	cm	20cm	
3. Minimum diameter of branches included in Growing stock (W)	cm		
4. Minimum diameter at breast height of trees in Commercial growing stock (Z)	cm		
5. Volume refers to “Above ground” (AG) or “Above stump” (AS)	AG / AS		
6. Have any of the above thresholds (points 1 to 4) changed since 1990	Yes/No		
7. If yes, then attach a separate note giving details of the change	Attachment		

6 Table T6 – Biomass stock

6.1 FRA 2005 Categories and definitions

Category	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass	All living biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood biomass	All non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.

6.2 National data

6.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Atlanta consult. 1989. Inventaire Forestier de la Guinee Forestiere. Rapport de synthese. Atlanta consult-Industrie- und Unternehmensberatung GmbH)	M	Volume/ha	1989	The inventory provided volume data by sub region and by forests types (dense, medium and open forest), measured over bark from minimum DBH of 20cm

6.2.2 Original data

T5 will be used as input.

6.3 Analysis and processing of national data

The following conversion factors were used to give input to the final table

Forests	Vol/ha	WD	Stem Biomass	BEF	RS	DL
	158	0.58	91.6	2.53	0.24	0.14

6.4 Data for National reporting table T6

FRA 2005 Categories	Biomass (million metric tonnes oven-dry weight)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Above-ground biomass	939.73	800.14	730.77	ID	ID	ID
Below-ground biomass	225.54	192.03	175.38	ID	ID	ID
Dead wood biomass	163.14	138.90	126.86	ID	ID	ID
TOTAL	1 328	1 131	1 033	ID	ID	ID

7 Table T7 – Carbon stock

7.1 FRA 2005 Categories and definitions

Category	Definition
Carbon in above-ground biomass	Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all living biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.
Carbon in dead wood biomass	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in litter	Carbon in all non-living biomass with a diameter less than a minimum diameter chose by the country for lying dead (for example 10 cm), in various states of decomposition above the mineral or organic soil. This includes the litter, fomic, and humic layers.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a specified depth chosen by the country and applied consistently through the time series.

7.2 National data

7.2.1 Data sources

7.2.2 Original data

T6 will be used as a conversion factor of 50% used to convert to carbon stock

7.3 Analysis and processing of national data

7.4 Data for National reporting table T7

FRA 2005 Categories	Carbon (Million metric tonnes)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Carbon in above-ground biomass	469.87	400.07	365.38	ID	ID	ID
Carbon in below-ground biomass	112.77	96.02	87.69	ID	ID	ID
Sub-total: Carbon in living biomass	582.63	496.09	453.08	ID	ID	ID
Carbon in dead wood	81.57	69.45	63.43	ID	ID	ID
Carbon in litter						
Sub-total: Carbon in dead wood and litter						
Soil carbon to a depth of _____ cm						
TOTAL CARBON	664.20	565.54	516.51	ID	ID	ID

8 Table T8 – Disturbances affecting health and vitality

8.1 FRA 2005 Categories and definitions

Category	Definition
Disturbance by fire	Disturbance caused by wildfire, independently whether it broke out inside or outside the forest/OWL.
Disturbance by insects	Disturbance caused by insect pests that are detrimental to tree health.
Disturbance by diseases	Disturbance caused by diseases attributable to pathogens, such as a bacteria, fungi, phytoplasma or virus.
Other disturbance	Disturbance caused by other factors than fire, insects or diseases.

8.2 National data

8.2.1 Data sources

8.2.2 Original data

No data available

8.3 Analysis and processing of national data

8.4 Data for National reporting table T8

FRA-2005 Categories	Average annual area affected (1000 hectares)			
	Forests		Other wooded land	
	1990	2000	1990	2000
Disturbance by fire	ID	ID	ID	ID
Disturbance by insects	ID	ID	ID	ID
Disturbance by diseases	ID	ID	ID	ID
Other disturbance	ID	ID	ID	ID

9 Table T9 – Diversity of tree species

9.1 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.

9.2 National data

9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
www.iucn.org	M	CR, EN, VU species	2000	

9.2.2 Classification and definitions

9.2.3 Original data

No original national data available

9.3 Data for National reporting table T9

FRA 2005 Categories	Number of species (year 2000)
Native tree species	ID
Critically endangered tree species	0
Endangered tree species	4
Vulnerable tree species	42

Notes: All trees and shrubs

9.4 Comments to National reporting table T9

Endangered

- 1 Monocyclanthus vignei
- 2 Neolemonniera clitandrifolia
- 3 Placodiscus pseudostipularis
- 4 Tieghemella heckelii

Vulnerable

- 1 Amanoa bracteosa
- 2 Amanoa strobilacea
- 3 Anopyxis klaineana
- 4 Anthonotha vignei
- 5 Berlinia occidentalis
- 6 Brachystephanus nimbae
- 7 Copaifera salikounda
- 8 Cordia platythyrsa
- 9 Cryptosepalum tetraphyllum
- 10 Drypetes afzelii
- 11 Entandrophragma angolense
- 12 Entandrophragma candollei
- 13 Entandrophragma utile
- 14 Eribroma oblonga
- 15 Garcinia kola
- 16 Gilbertiodendron bilineatum
- 17 Guarea cedrata
- 18 Guarea thompsonii
- 19 Guibourtia ehie
- 20 Hallea ledermannii
- 21 Haplormosia monophylla
- 22 Heritiera utilis
- 23 Homalium smythei
- 24 Khaya anthotheca
- 25 Khaya ivorensis
- 26 Loesenera kalantha
- 27 Lophira alata
- 28 Lovoa trichilioides
- 29 Milicia regia
- 30 Millettia warneckei
- 31 Monopetalanthus compactus
- 32 Nauclea diderrichii
- 33 Neostenanthera hamata
- 34 Nesogordonia papaverifera
- 35 Ouratea amplexans
- 36 Phyllanthus profusus
- 37 Piptostigma fugax
- 38 Terminalia ivorensis
- 39 Tetraberlinia tubmaniana
- 40 Trichoscypha cavalliensis
- 41 Trichoscypha mannii
- 42 Uvariadendron occidentale

10 Table T10 – Growing stock composition

10.1 FRA 2005 Categories and definitions

List of species names (scientific and common names) of the ten most common species.

10.2 National data

No data is available

11 Table T11 – Wood removal

11.1 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.

11.2 National data

11.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAO year book	L	Industrial round wood and Wood Fuel	1990 and 2000	

11.2.2 Classification and definitions

11.2.3 Original data

Year	Wood Removal under bark in cubic meters	
	Industrial Round wood	Wood Fuel
1988	1 162 000	3 343 922
1989	1 166 000	3 448 405
1990	1 128 000	3 452 701
1991	747 000	3 342 818
1992	1 035 000	3 118 810
Avg (1990)	1 047 600.00	3 341 331.20
1998	321 000	3 736 394
1999	337 000	4 201 839
2000	337 000	4 725 361
2001	337 000	4 924 930
2002	337 000	5 132 953
Avg (2000)	333 800.00	4 544 295.40

11.3 Analysis and processing of national data

11.3.1 Estimation and forecasting

Multiplying by the average for 1990 and 2000 by 1.15 to convert to over bark and extrapolating to 2005 gives:

FRA 2005 Categories	Wood Removal over bark in cubic meters		
	1990	2000	2005
Industrial Round wood	1 204 740	383 870	
Wood Fuel	3 842 531	5 225 940	5 917 644

11.4 Reclassification into FRA 2005 classes

11.5 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	1 205	384				
Woodfuel	3 843	5 226	5 918			
TOTAL for Country	5 047	5 610	5 918			

12 Table T12 – Value of wood removal

12.1 FRA 2005 Categories and definitions

Category	Definition
Value of industrial wood removal	Value of the wood removed for production of goods and services other than energy production (woodfuel).
Value of woodfuel removal	Value of the wood removed for energy production purposes regardless whether for industrial commercial or domestic use.

12.2 National data

No data is available

12.3 Analysis and processing of national data

12.4 Data for National reporting table T12

FRA 2005 Categories	Value of roundwood removal (1000 USD)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Industrial roundwood	ID	ID	ID	ID	ID	ID
Woodfuel	ID	ID	ID	ID	ID	ID
TOTAL for Country	ID	ID	ID	ID	ID	ID

13 Table T13 – Non-wood forest product removal

13.1 FRA 2005 Categories and definitions

13.2 Data for National reporting table T13

No data is available

14 Table T14 – Value of non-wood forest product removal

14.1 FRA 2005 Categories and definitions

14.2 Data for National reporting table T14

No data is available

15 Table T15 – Employment in forestry

15.1 FRA 2005 Categories and definitions

Category	Definition
Primary production of goods	Employment in activities related to primary production of goods like industrial roundwood woodfuel and non-wood forest products.
Provision of services	Employment in activities directly related to services from forests and woodlands.
Unspecified forestry activities	Employment in unspecified forestry activities.

15.2 National data

15.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Trends and current status of the contribution of the forest sector to national economies”(FAO, 2003)	L	Employment in primary production of goods	1990 and 2000	

15.2.2 Classification and definitions

15.2.3 Original data

No original national data was available

15.3 Analysis and processing of national data

15.4 Data for National reporting table T15

FRA 2005 Categories	Employment (1000 person-years)	
	1990	2000
Primary production of goods	4.7	1.9
Provision of services		
Unspecified forestry activities		
TOTAL	4.7	1.9

16 Thematic reporting tables

If countries would like to submit additional reporting tables these should be included here.
(See the chapter on thematic reporting in the Guidelines for Country Reporting).