Forestry Department
Food and Agriculture Organization of the United Nations

GLOBAL FOREST RESOURCES ASSESSMENT

COUNTRY REPORTS

NIGERIA

FRA2005/196
Rome, 2005

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:

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

E-mail: Mette.LoycheWilkie@fao.org

Readers can also use the following e-mail address: fra@fao.org

Report preparation and contact person

This report has been prepared by:

Name Mr **J.B. Adesina**
Title:
Organization:
Address: P.M.B 468
Abuja
Nigeria
Tel/Fax: 09-52344119
Email: jabesina@yahoo.com

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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 *in situ*. 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 *in situ*; 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
Olufemi A. Olaleye and Ameh, C. E. 1999. Forest Resource Situation Assessment of Nigeria EC-FAO PARTNERSHIP PROGRAMME (1998-2002);Tropical forestry Budget line B7-6201/97-15/VIII/FOR,Abuja, Nigeria	M	Forest cover	1977 1994	

1.2.2 Classification and definitions

National class	Definition
Intensive (crop) Agriculture	No definition
Extensive (grazing) Agriculture	No definition
Dominantly Shrub/Grasses	Comprise mixed combrekaceous wood/and typical of sudden savanna
Dominantly Trees/Woodlands/Shrubs	Savanna woodland where trees and shrubs form a family closed canopy.
Floodplain Agriculture	No definition
Disturbed Forest	Characterized by arrears of native forest as in above class but consists of open canopies that are as a result of human disturbance.
Gullies	No definition
Forested Freshwater Swamp	No definition
Undisturbed Forest	High forest consisting of ever green hydrophytic plants of great specie diversity characteristically stratified into three layers where the emergent layer (trees of 40-60m) high comprise tale trees that do not necessarily form continuous canopy.
Dominantly Grasses	No definition
Discontinuous Grassland	No definition
Mangrove Forest	This occurs on the muddy banks of Greeks and in tided channels in the upper portion of the zone of saturator influence where the water is brackish.
Shrub/Sedge/Graminoid Freshwater Marsh/Swamp	No definition
Extensive Agriculture with Denuded Areas	No definition
Grassland	No definition
Natural Waterbodies	No definition
Montane Forest	Also known as " Mist Forest" is commonly found on high attitudes of above 1000m characterized by broken canopies associated with massive profusions of various kinds of epiphytes
Urban (major+minor)	No definition
Riparian Forest	Characterized by its location adjacent to water course and its dense closed canopy.
Sand Dunes	No definition
Montane Grassland	No definition
Reservoir	No definition
Rock Outcrop	No definition
Agricultural Tree Crop Plantation	No definition
Forest Plantation	Artificial forest plantation of the both exotic and indigenous species such as teak and Gmelina which are massive.
Teak/Gmelina Plantation	No definition
Irrigation Project	No definition
Graminoid/Sedge Freshwater Marsh	No definition
Saltmarsh.Tidal Flat	No definition
Rainfed Arable Crops	No definition
Alluvial	No definition
Livestock Project	No definition
Mining Areas	No definition
Canal	

1.2.3 Original data

Vegetation and Land use Classes for 1977 (1976-78) and 1994 (1993-95)

National classes	1977	1994	
	Area(km2)	Area(km2)	Group
Intensive (crop) Agriculture	322 794	365 491	Other land
Extensive (grazing) Agriculture	166 326	187 236	Other land
Dominantly Shrub/Grasses	113 880	81 694	Forest / OWL
Dominantly Trees/Woodlands/Shrubs	151 293	81 386	Forest / OWL
Floodplain Agriculture	9 451	20 918	Other land
Disturbed Forest	14 573	18 990	Forest
Gullies	122	18 517	Other land
Forested Freshwater Swamp	18 316	16 499	Forest
Undisturbed Forest	25 951	12 114	Forest
Dominantly Grasses	12 549	11 983	Other land
Discontinuous Grassland	6 137	11 248	Other land
Mangrove Forest	9 994	9 977	Forest
Shrub/Sedge/Graminoid Freshwater Marsh/Swamp	16 899	9 248	OWL/O.L
Extensive Agriculture with Denuded Areas	3 518	9 206	Other land
Grassland	1 034	7 989	Other land
Natural Waterbodies	6 591	7 851	Inland water
Montane Forest	6 762	6 759	Forest
Urban (major+minor)	2 083	5 444	Other land
Riparian Forest	7 402	5 254	Forest
Sand Dunes	812	4 829	Other land
Montane Grassland	1 739	3 112	Other land
Reservoir	1 327	2 888	Inland water
Rock Outcrop	1 424	2 632	Other land
Agricultural Tree Crop Plantation	830	1 641	Other land
Forest Plantation	997	1 573	Forest
Teak/Gmelina Plantation	628	1 156	Forest
Irrigation Project	147	988	Other land
Graminoid/Sedge Freshwater Marsh	4 882	871	Other land
Saltmarsh.Tidal Flat	4	545	Other land
Rainfed Arable Crops	16	485	Other land
Alluvial	487	269	Other land
Livestock Project	52	139	Other land
Mining Areas	0	62	Other land
Canal	2	29	Other land
Total land area	**909 022**	**909 023**	

1.3 Analysis and processing of national data

A first conversion of km2 to 1000 hectares and a grouping of the other land and inland water classes give the following base table for further analysis. The forest and OWL classes are maintained without grouping as the intermediate results will also be used for the tables T2-T4. The class “Agricultural Tree Crop Plantations” was also maintained as it constitutes a basis for estimating the FRA category Other land with tree cover.

National classes (groups)	1977	1994
	1000 ha	1000 ha
Dominantly Shrub/Grasses	11 388	8 169
Dominantly Trees/Woodlands/Shrubs	15 129	8 139
Disturbed Forest	1 457	1 899
Forested Freshwater Swamp	1 832	1 650
Undisturbed Forest	2 595	1 211
Mangrove Forest	999	998
Shrub/Sedge/Graminoid Freshwater Marsh/Swamp	1 690	925
Montane Forest	676	676
Riparian Forest	740	525
Forest Plantation	100	157
Teak/Gmelina Plantation	63	116
Agricultural Tree Crop Plantation	83	164
Inland water (Natural Waterbodies + reservoirs)	792	1 074
Other land (the remaining classes)	53 358	65 199
Total country area	**90 902**	**90 902**

1.3.1 Calibration

Total Country area (FAOSTAT)	92 377
Total land area (FAOSTAT)	91 077
Inland water (calculated from FAOSTAT)	1 300

	1977	1994
Calibration factor based on land area	1.010726842	1.013899836

Calibrated national data will then be as follows

	1977	1994
	1000 ha	1000 ha
Dominantly Shrub/Grasses	11 510	8 283
Dominantly Trees/Woodlands/Shrubs	15 292	8 252
Disturbed Forest	1 473	1 925
Forested Freshwater Swamp	1 851	1 673
Undisturbed Forest	2 623	1 228
Mangrove Forest	1 010	1 012
Shrub/Sedge/Graminoid Freshwater Marsh/Swamp	1 708	938
Montane Forest	683	685
Riparian Forest	748	533
Forest Plantation	101	159
Teak/Gmelina Plantation	63	117
Agricultural Tree Crop Plantation	84	166
Other land	53 930	66 106
Inland water (from FAOSTAT)	1 300	1 300
Total country area	**92 377**	**92 377**

1.3.2 Estimation and forecasting

Estimation and forecasting to the FRA 2005 reporting years were done based on the calibrated national data and resulted in the following table:

	1990	**2000**	**2005**
	1000 ha	**1000 ha**	**1000 ha**
Dominantly Shrub/Grasses	9 042	7 144	6 195
Dominantly Trees/Woodlands/Shrubs	9 908	5 767	3 697
Disturbed Forest	1 819	2 085	2 218
Forested Freshwater Swamp	1 715	1 610	1 557
Undisturbed Forest	1 556	736	326
Mangrove Forest	1 011	1 012	1 013
Shrub/Sedge/Graminoid Freshwater Marsh/Swamp	1 119	666	439
Montane Forest	685	686	686
Riparian Forest	583	457	393
Forest Plantation	146	180	197
Teak/Gmelina Plantation	105	136	152
Agricultural Tree Crop Plantation	147	195	220
Other land	63 241	70 403	73 984
Inland water	1 300	1 300	1 300
Total country area	**92 377**	**92 377**	**92 377**

1.4 Reclassification into FRA 2005 classes

The following reclassification matrix was used in order to reclassify the national classes into FRA 2005 categories. The result of the reclassification is introduced directly in the final reporting table.

	Reclassification matrix				
	Forest	**OWL**	**OL**	**OLwTC**	**Water**
Dominantly Shrub/Grasses	34%	66%			
Dominantly Trees/Woodlands/Shrubs	66%	34%			
Disturbed Forest	100%				
Forested Freshwater Swamp	100%				
Undisturbed Forest	100%				
Mangrove Forest	100%				
Shrub/Sedge/Graminoid Freshwater Marsh/Swamp		34%	66%		
Montane Forest	100%				
Riparian Forest	100%				
Forest Plantation	100%				
Teak/Gmelina Plantation	100%				
Agricultural Tree Crop Plantation			100%	100%	
Other land			100%		
Inland water					100%

1.5 Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	**2000**	**2005**
Forest	17 234	13 137	11 089
Other wooded land	9 717	6 902	5 495
Other land	64 126	71 038	74 493
...of which with tree cover [1)]	147	195	220
Inland water bodies	1 300	1 300	1 300
TOTAL	**92 377**	**92 377**	**92 377**

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 Data sources

See table T1

2.2.2 Original data

All lands in Nigeria belong to the Government and are held in trust for the people. Individuals or private organizations occupy land only on lease for a number of years usually 99 years. Only what the occupiers put on the land that belongs to the occupiers. The authority to occupy lands may be withdrawn at time by government with compensation paid to the owner that may have property on the land.

2.3 Data for National reporting table T2

FRA 2005 Categories	Area (1000 hectares)			
	Forest		Other wooded land	
	1990	2000	1990	2000
Private ownership				
Public ownership	17 234	13 137	9 717	6 902
Other ownership				
TOTAL	**17 234**	**13 137**	**9 717**	**6 902**

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	L	Protected Area		
Olufemi A. Olaleye and Ameh, C. E. 1999. Forest Resource Situation Assessment of Nigeria EC-FAO PARTNERSHIP PROGRAMME (1998-2002);Tropical forestry Budget line B7-6201/97-15/VIII/FOR,Abuja, Nigeria	M	Forest cover Plantation area	1977 1994	

3.2.2 Original data

Protected areas from Source 1: 2003

Category	Area in 1000 ha
Nature Reserves, Wilderness Areas, and National Parks (categories I and II) [1)]	2 509
Natural Monuments, Species Management, Areas and Protected Landscapes and Seascapes (categories III, IV and V)	745
Areas Managed for Sustainable Use and unclassified areas (categories VI and other)	2 248
Total Area Protected (all categories)	**5 502**

[1)] It is assumed that crown cover is above 10%. See High Forest timber volume under national parks and reserves. It excludes the area designated primarily for production purpose and which are included under High forest below.

Production Areas:

It is assumed that High Forests areas and plantation have been designated primary function of production.

a) Plantation Area from T1 and source 2

	Area in 1000 ha		
Category	**1990**	**2000**	**2005**
Forest Plantation	146	180	197
Teak/Gmelina Plantation	105	136	152
Total	**251**	**316**	**349**

b) Production Areas from High Forest area by categories

Reference year: 1998

Forest Land Designation	Forest Type	Area (ha)	Gross Volume (m3)
Forest Reserve	Freshwater swamp	224 369	23 353 102
	Lowland rain	757 740	98 599 957
	Riparian	2 547	169 101
Free Area	Freshwater swamp	1 424 739	150 814 914
	Lowland rain	912 094	109 544 813
	Mangrove	5 314	443 860
	Riparian	80 368	4 526 678
Game Reserve	Lowland rain	12 365	1 633 706
	Riparian	5 492	386 513
National Park	Lowland rain	369 412	46 878 597
Total		**3 794 440**	

3.3 Analysis and processing of national data

If we consider the 1998 data on high forests valid for year 2000, we get the following table:

	2000
Forest plantations (production)	316
High Forest (Production)	3 794
Natural reserves etc. (Cat. I and II)	5 502
Remaining (difference)	3 525
Total Forest	**13 137**

3.3.1 Estimation and forecasting

The Conservation area is assumed to be constant for all three reporting years. Total area of forest and of forest plantations are taken from table T1. The area of "High Forest" and "Remaining" is estimated by applying their relative proportions in 2000 to the difference [Total forest area – forest plantations – Natural Reserves].

3.4 Reclassification into FRA 2005 classes

Forest

National classes	**Production**	**Conservation**	**No or unknown**
Nature Reserves, Wilderness Areas, and National Parks (categories I and II)		100%	
High Forests	100%		
Plantations	100%		
Remaining			100%

	Area in hectares		
FRA 2005 Categories	**1990**	**2000**	**2005**
Production	6 203	4 110	3 065
Conservation (1)	5 502	5 502	5 502
No/unknown designation	5 529	3 525	2 522
Total forest area	**17 234**	**13 137**	**11 089**

Notes: 1. Assume the area excludes area designated primarily for production purpose

Other wooded land

Protected area under OWL

No definition was available so this is an assumption

Category	Area in 1000ha
Natural Monuments, Species Management, Areas and Protected Landscapes and Seascapes (categories III, IV and V)	745
Areas Managed for Sustainable Use and unclassified areas (categories VI and other)	2 248
Total	**2 993**

OWL under unknown designation

This area is obtained by subtracting OWL under conservation from the total forest area obtained from T1

	Area in 1000 hectares		
	1990	**2000**	**2005**
Unknown	6 724	3 909	2 502

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	6 203	4 110	3 065			
Protection of soil and water	0	0	0			
Conservation of biodiversity	5 502	5 502	5 502			
Social services	0	0	0			
Multiple purpose	0	0	0	not appl.	not appl.	not appl.
No or unknown function	5 529	3 525	2 522	not appl.	not appl.	not appl.
Total - Forest	**17 234**	**13 137**	**11 089**	**not appl.**	**not appl.**	**not appl.**
Other wooded land						
Production	0	0	0			
Protection of soil and water	0	0	0			
Conservation of biodiversity	2 993	2 993	2 993			
Social services	0	0	0			
Multiple purpose	0	0	0	not appl.	not appl.	not appl.
No or unknown function	6 724	3 909	2 502	not appl.	not appl.	not appl.
Total – Other wooded land	**9 717**	**6 902**	**5 495**	**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

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Olufemi A. Olaleye and Ameh, C. E. 1999. Forest Resource Situation Assessment of Nigeria EC-FAO PARTNERSHIP PROGRAMME (1998-2002);Tropical forestry Budget line B7-6201/97-15/VIII/FOR,Abuja, Nigeria	M	Forest cover	1977 1994	

4.2.2 Classification and definitions

National class	Definition
(i) Undisturbed Forest	High forest consisting of ever green hydrophytic plants of great specie diversity characteristically stratified into three layers where the emergent layer (trees of 40-60m) high comprise tale trees that do not necessarily form continuous canopy.
(ii) Disturbed Forest	Characterized by arrears of native forest as in above class but consists of open canopies that are as a result of human disturbance.
(iii) Riparian Forest	Characterized by its location adjacent to water course and its dense closed canopy.
(iv) Montane Forest	Also known as " Mist Forest" is commonly found on high attitudes of above 1000m characterized by broken canopies associated with massive profusions of various kinds of epiphytes.

(v) Mangrove Forest	This occurs on the muddy banks of Greeks and in tided channels in the upper portion of the zone of saturator influence where the water is brackish.
(vi) Plantation Forest	Artificial forest plantation of the both exotic and indigenous species such as teak and Gmelina which are massive.
(b) Dominantly Trees/Woodlands/Shrubs	Savanna woodland where trees and shrubs form a family closed canopy.
(c) Dominantly shrubs and dense grasses with minor tree component	Comprise mixed combrekaceous wood/and typical of sudden savanna

4.2.3 Original data

Table T1 was used as an input to this table

National classes	**Calibrated area in 1000 ha**		
	1990	**2000**	**2005**
Dominantly Shrub/Grasses (1)	3 074	2 429	2 106
Dominantly Trees/Woodlands/Shrubs (2)	6 539	3 806	2 440
Disturbed Forest	1 819	2 085	2 218
Forested Freshwater Swamp	1 715	1 610	1 557
Undisturbed Forest	1 556	736	326
Mangrove Forest	1 011	1 012	1 013
Montane Forest	685	686	686
Riparian Forest	583	457	393
Forest Plantation	146	180	197
Teak/Gmelina Plantation	105	136	152
Total Forest area	**17 234**	**13 137**	**11 089**

Notes:
1= 34% of total area of the vegetation class
2: 66% of the total area of the vegetation class

4.3 Reclassification into FRA 2005 classes

Undisturbed forest= Primary
Plantation forest and teak plantations= Productive plantations
Remaining forests = Modified natural
All Other wooded land is considered as Modified natural

4.4 Data for National reporting table T4

FRA 2005 Categories	**Area (1000 hectares)**					
	Forest			**Other wooded land**		
	1990	**2000**	**2005**	**1990**	**2000**	**2005**
Primary	1 556	736	326	0	0	0
Modified natural	15 427	12 085	10 414	9 717	6 902	5 495
Semi-natural	0	0	0	0	0	
Productive plantation	251	316	349	0	0	0
Protective plantation	0	0	0	0	0	0
TOTAL	**17 234**	**13 137**	**11 089**	**9 717**	**6 902**	**5 495**

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

5.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Olufemi A. Olaleye and Ameh, C. E. 1999. Forest Resource Situation Assessment of Nigeria EC-FAO PARTNERSHIP PROGRAMME (1998-2002);Tropical forestry Budget line B7-6201/97-15/VIII/FOR,Abuja, Nigeria	M	Growing stock for production area and plantations	1977 1994	

5.2.2 Original data

High forest gross timber volumes (excluding bark) by forest designation and forest type.

1998

Forest Land Designation	Forest Type	Area	Gross Volume under bark
		(ha)	(m3)
Forest Reserve	Freshwater swamp	224 369	23 353 102
	Lowland rain	757 740	98 599 957
	Riparian	2 547	169 101
Free Area	Freshwater swamp	1 424 739	150 814 914
	Lowland rain	912 094	109 544 813
	Mangrove	5 314	443 860
	Riparian	80 368	4 526 678
Game Reserve	Lowland rain	12 365	1 633 706
	Riparian	5 492	386 513
National Park	Lowland rain	369 412	46 878 597
Total		**3 794 440**	**436 351 241**
Average Vol/ha			**115**

Standing Volume of forest plantations derived from Inventory.

1998

STATE	AREA (ha)	Under bark Volume (m3)
1. Lagos	1 049	281 869
2. Ogun	40 147	16 830 603
3. Oyo	6 743	2 169 967
4. Osun	9 259	2 625 817
5. Ondo & Ekiti	23 574	8 321 814
6. Edo	21 522	10 609 067
7. Delta	4 014	1 291 681
8. Rivers & Bayelsa	0	0
9. Cross. Rivers	14 364	7 716 584
10. Akwa-Ibom	2 229	659 413
11. Imo	1 252	692 197
12. Abia	3 714	2 007 058
13. Anambra	3 827	1 896 140
14. Enugu/Ebonyi	13 750	7 598 434
15. Benue	2 226	3 023 116
16. Kwara	9 720	4 708 102
17. Kogi	5 503	1 794 826
18. Niger	5 619	2 496 654
19. Kebbi	891	289 821
20. Kaduna	5 866	1 973 468
21. Kano	1761	484 782
22. lateau/Nasarawa	6938	2 465 098
23. Adamawa	1249	370 328
24. Taraba	1394	398 131
Total	**186611**	**80 704 970**
Average (m3/ha)		**432**

5.3 Analysis and processing of national data

5.3.1 Estimation and forecasting

The forest area from T1 is used as an input

Category	m3/ha	Area in 1000 ha 1990	2000	2005
Natural forest	115	16 983	12 821	10 740
Plantation	432	251	316	349
TOTAL		**17 234**	**13 137**	**11 089**

.Multiplying area by average vol/ha gives the following:

	Growing stock in million cubic meters 1990	2000	2005
Natural Forest	1 953	1 474	1 235
Plantation	108	137	151
Total	**2 061**	**1 611**	**1 386**

Commercial growing stock is assumed to be the total growing stock of plantations

5.4 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	2 061	1 611	1 386	ID	ID	ID
Commercial growing stock	108	137	151	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		
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

Data from table T5 were used as input to the biomass calculations.

	Growing stock in million cubic meters		
	1990	**2000**	**2005**
Natural Forest	1 953	1 474	1 235
Plantation	108	137	151
Total	**2 061**	**1 611**	**1 386**

6.3 Analysis and processing of national data

The following conversion factors were used:

	Basic Density (ton/m3)	BEF	R/S ratio	D/L ratio
Forests	0.58	2.97	0.24	0.14
Plantations	0.58	1.52	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	3 459	2 660	2 261	ID	ID	ID
Below-ground biomass	830	638	543	ID	ID	ID
Dead wood biomass	601	462	392	ID	ID	ID
TOTAL	**4 890**	**3 760**	**3 195**	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, fumic, 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

Data from table T6 were used and a conversion factor of 50% was applied.

7.3 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	1 730	1 330	1 130			
Carbon in below-ground biomass	415	319	271			
Sub-total: Carbon in living biomass	**2 145**	**1 649**	**1 402**			
Carbon in dead wood	300	231	196			
Carbon in litter						
Sub-total: Carbon in dead wood and litter						
Soil carbon to a depth of _____ cm						
TOTAL CARBON	**2 445**	**1 880**	**1 598**			

8 Table T8 – Disturbances affecting health and vitality

No data are available for this reporting table

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
NATHANIEL, IMEH T. AND NATHANIEL ADEBOBOLA.* The effects of poverty in conservation of biodiversity : The Nigeria Experience. Laboratory of Hydrobiology, Department of Zoology, Obafemi Awolowo University Ile-Ife and Department of Biological Sciences University of Ilorin, Nigeria	M		2000	
www.iucn.org	M	CR, EN, VU species	2000	All Plant species are included

9.2.2 Original data

Forestry experts have reported that about 65 of Nigeria's 560 Species of trees are now faced with extinction while many others are at different stages of risk. Every year a considerable part of the nation's forest resources are destroyed through industrialisation, commerce, agriculture and the activities of rural dwellers, thereby disturbing the balance that nature maintains with

9.3 Data for National reporting table T9

FRA 2005 Categories	Number of species (year 2000)
Native tree species	560
Critically endangered tree species(1)	16
Endangered tree species(1)	18
Vulnerable tree species (1)	138

Note: All plant species are included. See Annex for a list of species.

10 Table T10 – Growing stock composition

No data are available for this reporting table

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
FAOSTAT	L	Industrial Round wood Wood fuel	1988-1992 1998-2002	

11.2.2 Original data

Year	Wood Removal under bark in cubic meters	
	Industrial Roundwood	Wood Fuel
1988	7 868 000	50 645 764
1989	7 868 000	50 786 024
1990	8 263 000	50 916 960
1991	8 263 000	51 733 968
1992	8 263 000	52 854 280
Average 1990	**4 052 500**	**51 387 399**
1998	9 418 000	58 417 792
1999	9 418 000	58 873 676
2000	9 418 000	59 348 652
2001	9 418 000	59 697 552
2002	9 418 000	60 064 328
Average 2000	**9 418 000**	**59 280 400**

11.3 Analysis and processing of national data

11.3.1 Estimation and forecasting

Applying a bark correction factor (1.15) and a linear extrapolation for the 2005 year forecast gives the following:

	Wood Remove over bark in cubic meters		
FRA 2005 categories	**1990**	**2000**	**2005**
Industrial Roundwood	4 660 375	10 830 700	13 915 862
Wood Fuel	59 095 509	68 172 460	72 710 935
Total	**63 755 884**	**79 003 160**	**86 626 797**

11.4 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	4 660	10 830	13 916			
Woodfuel	59 096	68 172	72 711			
TOTAL for Country	**63 756**	**79 003**	**86 627**			

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

12.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Expert opinion		Unit price for Wood and WF	1990 2000	

12.2.2 Original data

	Unit price in Naira	
FRA 2005 Categories	**1990**	**2000**
Industrial round wood	585	11320
Wood Fuel	40	650

Exchange rate for 1990: 1$US= 9.001 Naira
Exchange rate for 2000: 1$US= 109.55 Naira

12.3 Analysis and processing of national data

Table T11 is used as input

	Wood Remove over bark in cubic meters		
FRA 2005 categories	**1990**	**2000**	**2005**
Industrial Roundwood	4 660 375	10 830 700	13 915 862
Wood Fuel	59 095 509	68 172 460	72 710 935
Total	**63 755 884**	**79 003 160**	**86 626 797**

Multiplying unit price by volume of wood removal and converting to $US gives the figures presented in the final reporting table.

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	302 891	1 119 156	1 527 288			
Woodfuel	262 618	404 492	475 429			
TOTAL for Country	**565 508**	**1 523 648**	**2 002 718**			

12.5 Comments to National reporting table T12

Because market prices can give better estimates of the value of forest products in Nigeria, market prices were used to calculate the value. The costs of handling from the points of extraction from the forest one subtracted from the market prices used.

There is an assumption that, about 1/4 of the produced industrial wood was exported in 1990 and about 1/8 in 2000 because of the been. All costs were subtracted from the overseas prices collected from the Nigeria export promotion council for the year 1990 and 2000. No export trade in fuel wood.

Also the rate of recovery has been between 40% for export and 60-65% for local markets.

13 Table T13 – Non-wood forest product removal

No data are available for this reporting table

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

No data are available for this reporting table

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
a) FORMACU, Federal Department of Forestry (1996) Nigeria Forestry Action Programme	H	Number of Personal	1996	Data based on national field survey
b) Adedoyin, O.S. (2001). Formulation and Implementation of National forest programmes in Nigeria. Report prepared for FAO	H	Number of personal	2000	Data based on National field survey.

15.2.2 Classification and definitions

National class	Definitions
Federal Dept. of Forestry (FDF)	Personal working with the National Government (Federal Government of Nigeria)
State Forestry Department (SFD)	Personal working with the state government (forestry sub-sector)
Forestry Research Institute of Nigeria(FRIN) & University	

15.2.3 Original data

	1990	2000
FDF Employees	1 023	803
SFD Employees	9 424	9 938

15.3 Reclassification into FRA 2005 classes

FDF employees = Provision of services
SFD employees = Primary production of goods

15.4 Data for National reporting table T15

FRA 2005 Categories	Employment (1000 person-years)	
	1990	2000
Primary production of goods	9.4	9.9
Provision of services	1.0	0.8
Unspecified forestry activities		
TOTAL	**10.4**	**10.7**

Annex: Plant species from the IUCN Red List

Critically Endangered	
1	Acioa dichotoma
2	Acioa eketensis
3	Afrothismia winkleri
4	Autranella congolensis
5	Bulbophyllum filiforme
6	Cassipourea eketensis
7	Chassalia laikomensis
8	Cola nigerica
9	Dombeya ledermannii
10	Eugenia gilgii
11	Hymenostegia talbotii
12	Liparis goodyeroides
13	Napoleonaea lutea
14	Napoleonaea reptans
15	Psychotria moseskemei
16	Saxicolella marginalis
Endangered	
1	Berlinia hollandii
2	Cola philipi-jonesii
3	Cryptosepalum diphyllum
4	Dielsantha galeopsoides
5	Diospyros crassiflora
6	Floscopa mannii
7	Gossweilerodendron balsamiferum
8	Ixora degemensis
9	Neolemonniera clitandrifolia
10	Pericopsis elata
11	Polystachya cooperi
12	Pteleopsis habeensis
13	Sabicea xanthotricha
14	Sclerochiton preussii
15	Soyauxia talbotii
16	Swartzia fistuloides
17	Talbotiella eketensis
18	Tieghemella heckelii
Vulnerable	
1	Acanthopale decempedalis
2	Achyranthes talbotii
3	Afrofittonia silvestris
4	Afzelia africana
5	Afzelia bipindensis
6	Afzelia pachyloba
7	Albizia ferruginea
8	Allexis cauliflora
9	Allexis obanensis
10	Allophylus bullatus
11	Aneilema silvaticum
12	Angraecum pyriforme
13	Angylocalyx talbotii
14	Anopyxis klaineana

15	Anthocleista microphylla
16	Anthocleista scandens
17	Anthonotha nigerica
18	Anthonotha obanensis
19	Antrocaryon micraster
20	Baillonella toxisperma
21	Baphia dewildeana
22	Baphia latiloi
23	Baphia obanensis
24	Begonia oxyanthera
25	Begonia preussii
26	Begonia pseudoviola
27	Begonia schaeferi
28	Belonophora talbotii
29	Berlinia coriacea
30	Brachystegia kennedyi
31	Brachystegia nigerica
32	Brachystephanus longiflorus
33	Brillantaisia lancifolia
34	Bulbophyllum nigericum
35	Calpocalyx cauliflorus
36	Chazaliella obanensis
37	Cleistopholis staudtii
38	Cola gigas
39	Cola glabra
40	Cola hypochrysea
41	Cordia platythyrsa
42	Craibia atlantica
43	Crassocephalum bauchiense
44	Crateranthus talbotii
45	Crotalaria bamendae
46	Crotalaria ledermannii
47	Crotonogyne strigosa
48	Cuviera talbotii
49	Daniellia oblonga
50	Deinbollia insignis
51	Deinbollia maxima
52	Deinbollia saligna
53	Dennettia tripetala
54	Desmostachys vogelii
55	Diospyros barteri
56	Disperis mildbraedii
57	Dorstenia prorepens
58	Dracaena viridiflora
59	Drypetes molundana
60	Drypetes obanensis
61	Drypetes preussii
62	Drypetes staudtii
63	Encephalartos barteri
64	Entandrophragma angolense
65	Entandrophragma candollei
66	Entandrophragma cylindricum
67	Entandrophragma utile
68	Eribroma oblonga
69	Eriocaulon asteroides
70	Eriocaulon bamendae
71	Garcinia brevipedicellata
72	Garcinia staudtii

73	Guarea cedrata
74	Guarea thompsonii
75	Guibourtia ehie
76	Habenaria nigrescens
77	Hallea ledermannii
78	Hallea stipulosa
79	Haplormosia monophylla
80	Homalium dalzielii
81	Hymenostegia aubrevillei
82	Hymenostegia bakeriana
83	Ixora foliosa
84	Ixora nigerica
85	Jollydora glandulosa
86	Justicia camerunensis
87	Justicia orbicularis
88	Khaya anthotheca
89	Khaya grandifoliola
90	Khaya ivorensis
91	Khaya senegalensis
92	Loesenera talbotii
93	Lophira alata
94	Lovoa trichilioides
95	Macaranga paxii
96	Memecylon candidum
97	Mikaniopsis maitlandii
98	Millettia conraui
99	Millettia macrophylla
100	Monodora unwinii
101	Napoleonaea egertonii
102	Nauclea diderrichii
103	Nesogordonia papaverifera
104	Nodonema lineatum
105	Nothospondias staudtii
106	Oricia lecomteana
107	Pachypodanthium barteri
108	Pararistolochia goldieana
109	Pentas ledermannii
110	Piptostigma giganteum
111	Pseudagrostistachys africana
112	Pseuderanthemum dispersum
113	Pseudosabicea pedicellata
114	Psychotria podocarpa
115	Pterygota bequaertii
116	Pterygota macrocarpa
117	Quassia sanguinea
118	Raphia regalis
119	Rhabdotosperma ledermannii
120	Rhodognaphalon breviscupe
121	Robynsia glabrata
122	Rutidea nigerica
123	Scaphopetalum parvifolium
124	Schefflera mannii
125	Synsepalum glycydorum
126	Tapinanthus preussii
127	Terminalia ivorensis
128	Tricalysia talbotii
129	Trichoscypha mannii
130	Trichostachys interrupta

131	Turraeanthus africanus
132	Uvariastrum zenkeri
133	Uvariodendron occidentale
134	Vernonia bamendae
135	Vitellaria paradoxa
136	Warneckea memecyloides
137	Xylopia africana
138	Xylopia talbotii