

GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

Namibia

Rome, 2014

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Global Forest Resources Assessment (FRA). This country report is prepared as a contribution to the FAO publication, the Global Forest Resources Assessment 2015 (FRA 2015).

The content and the structure are in accordance with the recommendations and guidelines given by FAO in the document Guide for country reporting for FRA 2015 (<http://www.fao.org/3/a-au190e.pdf>). These reports were submitted to FAO as official government documents.

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N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Introductory Text

Place an introductory text on the content of this report

Namibia is a land of contrasts which is endowed by natural resources that provides goods and essential services for her citizens. The country covers an area of 824,000 km². The Forestry sector is managed by the Ministry of Agriculture, Water and Forestry through the Directorate of Forestry in partnership with the forestry stakeholders comprising of 1) local communities; 2) farmers and private sectors; and 3) institutions that provides financial resources. The Directorate of Forestry is divided into two main Divisions. These are: 1) Forest Management Division which is responsible for development of policy and legal framework, protection and management of classified forests, promotion of farm community, and environmental forestry, provision of extension services and maintenance of an efficient sector-wide management information system, and 2) The Forestry Research Division which is responsible for conducting integrated forestry research including indigenous knowledge and dissemination of forestry research information.

As part of Namibia's Community-Based Natural Resource Management (CBNRM) Programme, community forests provide local communities with rights to manage forest resources. These rights include the use of wood and non-wood products for commercial purposes; the issuing of forest-use permits at community level; and the management of grazing areas. These multi-purpose functions of community forests have been recognized in the Namibian Forest Act where specific provisions are made for the integration of non-forest land use, which includes the zoning and management of rangelands, and provides scope for the introduction of integrated land-use management in general.

Regarding the status of forestry information availability in Namibia, a comprehensive national forest inventory has not yet been done for the whole country. The main challenge is manpower and resources. Currently only 4 regions were inventoried out of 13 regions. However, forest inventories have been carried out in selected community forests in most of the regions, but these data do not represent larger areas of the country.

This synthesis represents the country report for Namibia as part of an input to Global Forest Resources Assessment (FRA) 2015.

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Desk Study?

Check "yes" if this survey is a Desk Study, "no" otherwise	
Desk Study?	no

1. What is the area of forest and other wooded land and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

1.1 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 ; 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".
...of which with tree cover (<i>sub-category</i>)	Land considered as "Other land", that is predominantly agricultural or urban lands use and has patches of tree cover that span 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. It includes bothe forest and non-forest tree species.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.
Forest expansion	Expansion of forest on land that, until then, was not defined as forest.
...of which afforestation (<i>sub-category</i>)	Establishment of forest through planting and/or deliberate seeding on land that, until then, was not defined as forest.
...of which natural expansion of forest (<i>sub-category</i>)	Expansion of forests through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture).
Deforestation	The conversion of forest to other land use or the longterm reduction of the tree canopy cover below the minimum 10 percent threshold.
...of which human induced (<i>sub-category</i>)	Human induced conversion of forest to other land use or the permanent reduction of the tree canopy cover below the minimum 10 percent threshold.
Reforestation	Natural regeneration or re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.
...of which artificial reforestation (<i>sub-category</i>)	Re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.

1.2 National data

1.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Holm, D. and Graz, P. 1992. Forest Cover Mapping Northern Namibia Phase I II, Vol I II	Forest Cover	1992	N/A

2	Selanniemi T., et al	Vegetation structural types	1983	Edwards (1983)
3	Forest Policy in Namibia, 2001	Forest Cover	2000	Edwards (1983), main types of vegetation
4	Mendelsohn, J. et al 2002. Atlas of Namibia: A portrait of the Land and its People	Forest Cover	2002	N/A
5	Mendelsohn, J. and Obeid, S. 2005. Forest Woodland of Namibia	Forest Cover	2005	N/A
6	http://www.fao.org/forestry	N/A	N/A	N/A
7	Shikaputo, C. 2008 Extended feasibility study – Tree Planting Project in Southern Part of Oshikoto, Oshana and Omusati Regions .	Afforestation	2008	N/A
8	DoF Annual Reports	Afforestation	2006	N/A

1.2.2 Classification and definitions

National class	Definition
Cultivation within forest	No description by author
Cultivation within savannah	No description by author
Dense Forest	70% crown cover, tree height >5m" /> >70% crown cover, tree height >5m
Dense Savannah	70% shrub cover, <2m" /> > 70% shrub cover, <2m
Medium Forest	5m" /> Crown cover 40-70%, tree height > 5m
Medium savannah	40-70% bush cover, 2-5m
Medium Savannah	< 2m" /> 40-70% shrub cover, < 2m
Open Forest	5m" /> Crown cover 10-40% , tree height >5m
Open savannah	10-40% bush cover, 2-5m
Open savannah	<2m" /> 10-40% shrub cover, <2m
Other land area	No description by author
Very open Forest	5m" /> Crown cover 2-10%, tree height >5m

1.2.3 Original data

Forest area										
Original data from source 1: Reference year 1992										
	Area in hectares									
National Classes	Kavango	Caprivi	Kunene	Ohan gwena	Omusati	Oshana	Oshikoto	Groot fontein	Tsumkwe	Total of rows
Dense Forests	299	202	126	48	0	0	39	55	45	814
Medium Forest	1427	619	236	253	3	0	238	81	294	3 151
Open Forest	1045	502	32	156	0	0	175	100	262	2 272
Very open Forests	241	212	12	53	0	0	183	33	99	833
Dense Savanna	0	0	136	3	1	0	17	52	5	214
Dense savanna	46	2	254	56	43	2	189	196	65	853
Medium savanna	97	0	1243	3	134	17	165	229	131	2 019
Medium savanna	463	3	358	16	283	30	668	820	476	3 117
Open Savanna	31	0	727	0	159	22	75	320	111	1 445
Open savanna	256	6	1382	25	104	27	311	523	225	2 859
Cultivation within forest	113	82	0	0	0	2	145	0	0	342
Cultivation within savanna	81	3	0	0	394	19	170	3	0	670
Other land area	192	352	1152	454	270	392	283	83	270	3 448

Total	4291	1983	5658	1067	1391	511	2658	2495	1983	22 037
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Original data from source 3: Reference year 2000

Land cover description	Area (ha)	%
Shrubland	43 601 971	52.8
Forest	99 820	0.1
Grassland	7 243 681	8.8
Riverine woodland	3 48 001	0.4
Salt pans	540 016	0.7
Shrubland-Woodland mosaic	14 257 827	17.3
Sparse grassland and Shrubland	3 588 579	4.3
Woodland	12 917 440	15.6
Total land area	82 597 335	100%

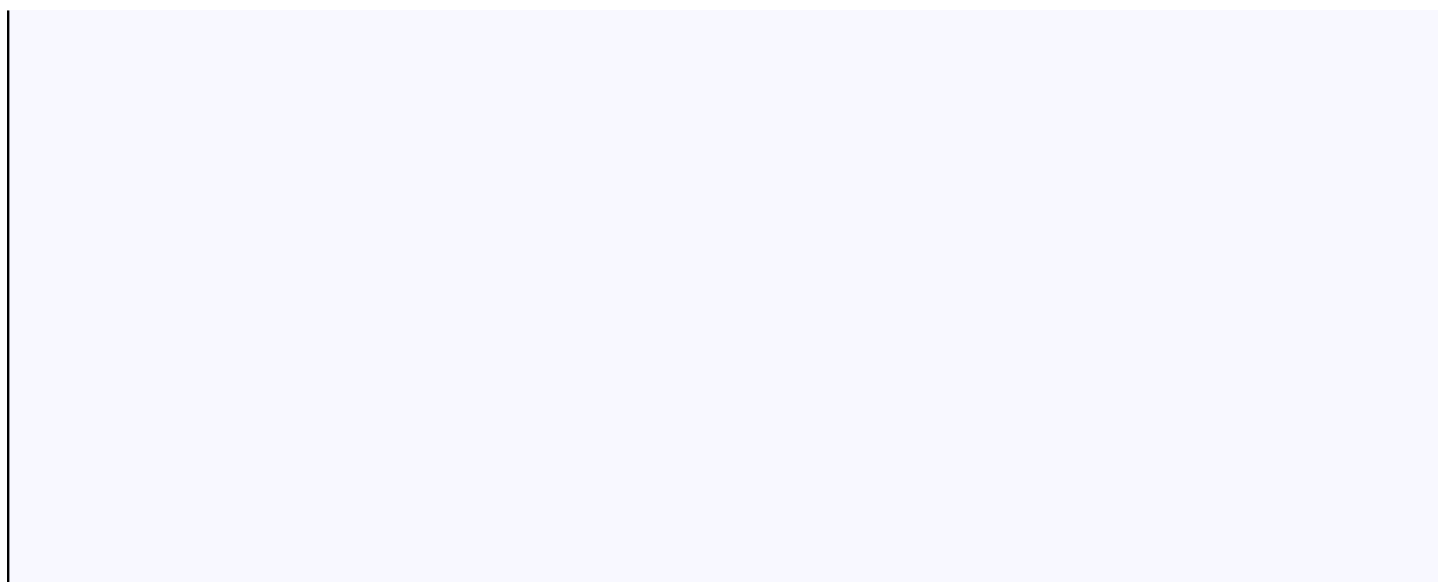
Forest expansion, reforestation

Since 2004, plantation activities are on-going at a low scale and the information is scanty. The data hereby provided by the national correspondent are based on his review and judgement.

1.3 Analysis and processing of national data

1.3.1 Adjustment

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1.3.2 Estimation and forecasting

Forest area					
For 1990, 2005 2010 and 2015, estimation and forecasting are based on linear extrapolation					
FRA Categories	Area in hectares				
	1990	2000	2005	2010	2015
Forest	8 762 496	8 032 903	7 661 499	7 290 095	6 918 691
OWL	9 023 187	8 656 501	8 473 158	8 289 815	8 106 472
OL	64 543 317	65 639 596	66 194 343	66 749 090	67 303 837
Inland water	100 000	100 000	100 000	100 000	100 000
Total country Area	82 429 000	82 429 000	82 429 000	82 429 000	82 429 000

1.3.3 Reclassification

Forest area
<u>Reference year 1992</u>
Reclassification is done before estimation and forecasting because each reference year is analysed and processed separately. It follows the one for FRA, except that “cultivation within forest” has been reclassified as Other

Land with Tree Cover (OLWTC)” since the primary use is agriculture and cultivation within Savannah has been classified as other land for the same reason.

National Classes	Forests	OWL	OL	OLWTC
Dense Forests	100%			
MediumForest	100%			
OpenForest	100%			
Very open Forests		100%		
Dense Savannah		100%		
Dense savannah	35%	65%		
Medium savannah		100%		
Medium savannah	35%	65%		
Open Savannah		100%		
Open savannah	35%	65%		
Cultivation within forest				100%
Cultivation within savannah			100%	
Other land area			100%	

The huge difference between the total land area in source 1 (22 037 00ha) and FAO STAT (82 329 000ha) has been considered as other land since this forest inventory covered only the north central and the north-eastern part of the country , where the majority of the forests are found.

FRA Categories	Area in hectares
Forest	8 627 150
OWL	9 961 850
OL	63 740 000

Total land Area	82 329 000
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Reference year 2000

- Calibration

Calibration	Area in hectares	Calibrating factor
Land area	82 597 335	
Fao	82 329 000	0.996751287

Land cover description	Calibrated area in hectares
Shrubland	43 460 321
Forest	99 496
Grassland	7 220 148
Riverine woodland	346 870
Salt pans	538 262
Shrubland-Woodland mosaic	14 211 507
Sparse grassland and Shrubland	3 576 921
Woodland	12 875 475

Total	82 329 000
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- Reclassification

Note that since there were no definitions of some of these classes, Edward (1983) structural vegetation classes were used to reclassify Shrubland and woodland. An expert opinion was used to reclassify shrubland-woodland mosaic.

National Classes	Forests	OWL	OL
Shrubland			100%
Forest	100%		
Grassland			100%
Riverine woodland (1)	60%	30%	10%
Salt pans			100%
Shrubland-Woodland mosaic		33%	67%
Sparse grassland and shrubland			100%
Woodland(1)	60%	30%	10%

Notes:

1. Expert Estimate. There are three types of woodlands in Namibia: Closed woodland (11-75%), Open woodland (1-10%) and Sparse woodland <1%.

Summary 1992 and 2000 data

FRA Categories	Area in hectares	
	1992	2000

Forest	8 627 150	8 032 903
OWL	8 949 850	8 656 501
OL	64 752 000	65 639 596
Total land Area	82 329 000	82 329 000

1.4 Data

Table 1a













Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
	Forest	8762	8032	7661	7290	6919
	Other wooded land	9023	8656	8473	8290	8107
	Other land	64544	65641	66195	66749	67303
	... of which with tree cover	N/A	N/A	N/A	N/A	N/A
	Inland water bodies	100	100	100	100	100
	TOTAL	82429.00	82429.00	82429.00	82429.00	82429.00

Table 1b

Categories		Annual forest establishment / loss (000 hectares per year)				...of which of introduced species (000 hectares per year)			
		1990	2000	2005	2010	1990	2000	2005	2010
	Forest expansion	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which afforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which natural expansion of forest	N/A	N/A	0.0025	N/A	N/A	N/A	N/A	N/A
	Deforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which human induced	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

	Reforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which artificial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Forest	Tier 2	Tier 1
Other wooded land	Tier 2	Tier 1
Forest expansion	Tier 2	Tier 1
Deforestation	Tier 2	Tier 1
Reforestation	Tier 3	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
<ul style="list-style-type: none"> • Forest • Other wooded land • Afforestation • Reforestation • Natural expansion of forest • Deforestation 	<p>Tier 3 : Data sources: Either recent (less than 10 years ago) National Forest Inventory or remote sensing, with ground truthing, or programme for repeated compatible NFIs</p> <p>Tier 2 : Data sources: Full cover mapping / remote sensing or old NFI (more than 10 years ago)</p> <p>Tier 1 : Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status)</p> <p>Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status)</p> <p>Tier 1 : Other</p>

1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends
Forest	The data used for establishing the trend are not fully comparable, and thus the change rate might be overestimated.	N/A
Other wooded land	Linear extrapolation has been adopted, considering that the trend of OWL reduction remains constant.	N/A
Other land	N/A	N/A
Other land with tree cover	N/A	N/A
Inland water bodies	N/A	N/A
Forest expansion	AfforestationThe afforestation program in Namibia has started after 2003	N/A
Deforestation	N/A	N/A
Reforestation	N/A	N/A

Other general comments to the table

On the current situation, there are several forest plantations or planted woodlots in Namibia. A tree planting project (with native species) is conducted in the Oshikoto, Oshana, Ohangwena and Omusati regions. The project started its activities in 2003 with the objective of assessing the institutional and technical viability of trees planting in saline grassland in the mentioned regions. In total, twenty five areas have been planted since 2003 which covers 250 ha (using about 75 360 of which 17 300 species are local tree species and 10 000 are exotics species). Since the total area planted in the country is small in ha, the data are not suitable for calculations in this report. In the column for introduced species, the species planted is Eucalyptus.

2. What is the area of natural and planted forest and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

2.1 Categories and definitions

Term	Definition
Naturally regenerated forest	Forest predominantly composed of trees established through natural regeneration.
Naturalized introduced species	Other naturally regenerated forest where the tree species are predominantly non-native and do not need human help to reproduce/maintain populations over time.
Introduced species	A species, subspecies or lower taxon occurring <i>outside</i> its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).
Category	Definition
Primary forest	Naturally regenerated forest of native species where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Other naturally regenerated forest	Naturally regenerated forest where there are clearly visible indications of human activities.
...of which of introduced species (<i>sub-category</i>)	Other naturally regenerated forest where the trees are predominantly of introduced species.
...of which naturalized (<i>sub-sub category</i>)	Other naturally regenerated forest where the trees are predominantly of naturalized introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
...of which of introduced species (<i>sub-category</i>)	Planted forest where the planted/seeded trees are predominantly of introduced species.
Mangroves	Area of forest and other wooded land with mangrove vegetation.
...of which planted (<i>sub-category</i>)	Mangroves predominantly composed of trees established through planting.

2.2 National data

2.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Kamwi, J. M. 2001 Inventory report of the Onankali Eucalyptus Plantation.	Forest characteristics	2001	N/A
2	Shikaputo, C. 2013. DoF Annual Report	Tree planting progress report	2012/2013	N/A
3	N/A	N/A	N/A	N/A

4	N/A	N/A	N/A	N/A
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2.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

2.2.3 Original data

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2.3 Analysis and processing of national data

2.3.1 Adjustment

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2.3.2 Estimation and forecasting






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2.3.3 Reclassification

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2.4 Data

Table 2a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Primary forest	0	0	0	0	0
	Other naturally regenerated forest	8763	8032	7661	7290	6919
	... of which of introduced species	N/A	N/A	N/A	N/A	N/A
	... of which naturalized	N/A	N/A	N/A	N/A	N/A
	Planted forest	0	0	0.045	0.2	0.25


	... of which of introduced species	0	0	N/A	N/A	N/A
TOTAL		8763.00	8032.00	7661.04	7290.20	6919.25

Table 2b

Primary forest converted to (000 ha)								
1990-2000			2000-2010			2010-2015		
Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land
0	0	0	0	0	0	0	0	0

Table 2c

Categories	Area (000 hectares)				
	1990	2000	2005	2010	2015
Mangroves (forest and OWL)	0	0	0	0	0
... of which planted	0	0	0	0	0

Tiers

Category	Tier for status	Tier for reported trend
Primary forest	Tier 1	Tier 1
Other naturally regenerated forest	Tier 1	Tier 1
Planted forest	Tier 1	Tier 1
Mangroves	Tier 3	Tier 3

Tier Criteria

Category	Tier for status	Tier for reported trend
Primary forest/Other naturally regenerated forest/Planted forest	<p>Tier 3 : Data sources: Recent (less than 10 years) National Forest Inventory or remote sensing with ground truthing or data provided by official agencies or programme for repeated compatible NFIs</p> <p>Tier 2 : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years)</p> <p>Tier 1 : Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status)</p> <p>Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status)</p> <p>Tier 1 : Other</p>

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
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Primary forest	N/A	N/A
Other naturally regenerating forest	N/A	N/A
Planted forest	No significant plantation activities have been conducted before 2004. Four years ago, efforts have been started to establish new plantations, but the rate is still very low. The result is not yet significant.	N/A
Mangroves	Not applicable to Namibia	N/A

Other general comments to the table

N/A

3. What are the stocks and growth rates of the forests and how have they changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

3.1 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm, excluding branches.
Net Annual Increment (NAI)	Average annual volume of gross increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for "Growing stock".
Above-ground biomass	All living biomass above the soil including stem stump branches bark seeds and foliage.
Below-ground biomass	All 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.
Dead wood	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 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 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	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 the minimum diameter for dead wood (e.g. 10 cm) lying dead in various states of decomposition above the mineral or organic soil.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a soil depth of 30 cm.

3.2 National data

3.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Angombe S T. and Laamanen R. 2002, Inventory Report on the Woody Resources in Oshikoto Region	Growing stock for Oshikoto region	2000	N/A
2	Chakanga M et al. 1998 Forest Inventory Report of Caprivi Region	Average Vol/ha for Caprivi region	2000	N/A
3	Selanniemi T et al. 2000 Inventory Report on the Woody Resources in the Omusati Region	Growing stock for Omusati Region	2000	N/A

4	Selanniemi T et al. 2000 Inventory Report on the Woody Resources in the Oshana Region	Growing stock for Oshana region	2000	N/A
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3.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

3.2.3 Original data

Growing stock									
<u>Original Data, reference year : 2000</u>									
National Classes	Oshikoto region		Omusati Region		Oshana Region		Sum of 3 regions		
	Area	GS	Area	GS	Area	GS	Area	GS	GS
	ha	m ³	ha	m ³	ha	m ³	ha	m ³	m ³ / ha
Forest	15 825	834 800					15 825	834 800	52.75
Closed Woodland	164 545	5 015 200	91 607	667 000	7 683	21 000	263 835	5 703 200	21.62
Thickets	408 108	10 840 000	51 289	412 400			459 397	11 252 400	24.49
Total Forest							739 057	17 790 400	24.07
Open woodland	52 633	510 500	154 692	1 599 000	42 443	376 700	249 768	2 486 200	9.95
Closed Shrubland	19 844	171 700	421 600	210 800	110 330	17 700	551 774	400 200	0.73
Open shrubland			14 260 566	75 581 000			14 260 566	75 581 000	5.30

Bushland	191 096	1 461 100	93 541	372 700	3 624	6 900	288 261	1 840 700	6.39
Total OWL							15 350 369	80 308 100	5.23

Biomass stock

No original data exist. Data on growing stock are used as input and conversion factors applied.

Carbon stock

Question 1 and data on biomass stock have been used as input for the carbon estimations.

3.3 Analysis and processing of national data

3.3.1 Adjustment

3.3.2 Estimation and forecasting

Growing stock

FRA	Vol/ha	Area in hectares				
		1990	2000	2005	2010	2015
Forests	24.07	8 762 496	8 032 903	7 661 499	7 290 095	6 918 691
OWL	5.23	9 023 187	8 656 501	8 473 158	8 289 815	8 106 472

The average volume per hectare for forest and for OWL in 5.2.2 has been applied to the areas of forest and of OWL from Question 1.

Vol/ha in m3	Growing Stock in Million cubic meters				
	1990	2000	2005	2010	2015
Forests	211	193	184	175	166
OWL	47	45	44	43	43

Biomass stock

Conversion factors applied are the following:

	Density (ton/m3)	BEF	R/S ratio
Forest	0.58	3.40	0.27
OWL	0.58	9.00	0.27

Then, the following formula has been applied:

Above ground biomass (AGB) = Growing stock* wood density * BEF

Below ground biomass (BGB) = AGB * 0.24

Wood density = 0.58 Tons /m³

BEF = 1.2

So we get,

Forest	Biomass (million tonnes)				
	1990	2000	2005	2010	2015
Aboveground biomass	423.5	388.2	370.3	352.2	334.1
Belowground biomass	114.3	104.8	99.9	95.1	90.3

OWL	Biomass (million tonnes)				
	1990	2000	2005	2010	2015
Aboveground biomass	246.4	236.4	231.4	226.4	221.4
Belowground biomass	66.5	63.8	62.5	61.1	59.7

Carbon stock

A/- Carbon stock is calculated by multiplying the biomass by 0.47. Carbon stocks of litter and soil have not been estimated.

B/- Carbon in the litter has been estimated, based on the standard factor of 2.8 (Subtropical, broadleaf deciduous), and

- Soil carbon has been estimated, based on the factor of 31 (Tropical, dry with sandy soils).

The biomass/ hectare values are then applied to the forest area values in Question 1 to get the results for the reporting years.

	1990	2000	2005	2010	2015
Forest (1000 hectares)	8 762	8 032	7 661	7 290	6 919
Carbon in litter (1000 tonnes C)	24 534	22 490	21 451	20 412	19 373
Soil carbon (1000 tonnes C)	271 622	248 992	237 491	225 990	214 489

	1990	2000	2005	2010	2015
--	------	------	------	------	------

OWL (1000 hectares)	9 023	8 656	8 473	8 290	8 107
Carbon in litter (1000 tonnes C)	25 264	24 237	23 724	23 212	22 700
Soil carbon (1000 tonnes C)	279 713	268 336	262 663	256 990	251 317

3.3.3 Reclassification

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3.4 Data

Table 3a




Category		Growing stock volume (million m ³ over bark)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Total growing stock	211	193	184	175	166	47	45	44	43	43
	... of which coniferous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which broadleaved	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3b

Category/Species name			Growing stock in forest (million cubic meters)			
Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	N/A	N/A	N/A	N/A	N/A	N/A
2 nd	N/A	N/A	N/A	N/A	N/A	N/A
3 rd	N/A	N/A	N/A	N/A	N/A	N/A
4 th	N/A	N/A	N/A	N/A	N/A	N/A
5 th	N/A	N/A	N/A	N/A	N/A	N/A

6 th	N/A	N/A	N/A	N/A	N/A	N/A
7 th	N/A	N/A	N/A	N/A	N/A	N/A
8 th	N/A	N/A	N/A	N/A	N/A	N/A
9 th	N/A	N/A	N/A	N/A	N/A	N/A
10 th	N/A	N/A	N/A	N/A	N/A	N/A
Remaining			N/A	N/A	N/A	N/A
TOTAL			.00	.00	.00	.00

THE PRE-FILLED VALUES FOR GROWING STOCK REFER TO THE FOLLOWING THRESHOLD VALUES (SEE TABLE BELOW)

Item	Value	Complementary information
Minimum diameter (cm) at breast height of trees included in growing stock (X)	5cm	N/A
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	N/A	N/A
Minimum diameter (cm) of branches included in growing stock (W)	N/A	N/A
Volume refers to above ground (AG) or above stump (AS)	N/A	N/A

PLEASE NOTE THAT THE DEFINITION OF GROWING STOCK HAS CHANGED AND SHOULD BE REPORTED AS GROWING STOCK DBH 10 CM INCLUDING THE STEM FROM GROUND LEVEL UP TO A DIAMETER OF 0 CM, EXCLUDING BRANCHES.

Table 3c




Category		Net annual increment (m ³ per hectare and year)				
		Forest				
		1990	2000	2005	2010	2015
	Net annual increment	N/A	N/A	N/A	N/A	N/A
	... of which coniferous	N/A	N/A	N/A	N/A	N/A
	... of which broadleaved	N/A	N/A	N/A	N/A	N/A

Table 3d

Category	Biomass (million metric tonnes oven-dry weight)	
	Forest	Other wooded land











		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Above ground biomass	423.5	388.2	370.3	352.2	334.1	246.4	236.4	231.4	226.4	221.4
	Below ground biomass	114.3	104.8	99.9	95.1	90.3	66.5	63.8	62.5	61.1	59.7
	Dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		537.80	493.00	470.20	447.30	424.40	312.90	300.20	293.90	287.50	281.10

Table 3e

Category	Carbon (Million metric tonnes)										
	Forest					Other wooded land					
	1990	2000	2005	2010	2015	1990	2000	2005	2010	2015	
	Carbon in above ground biomass	199.05	182.45	174.04	165.53	157.02	115.81	111.11	108.76	106.41	104.06
	Carbon in below ground biomass	53.72	49.26	46.95	44.7	42.45	31.26	29.99	29.38	28.72	28.06
	<i>Subtotal Living biomass</i>	252.77	231.71	220.99	210.23	199.47	147.06	141.09	138.13	135.13	132.12
	Carbon in dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Carbon in litter	24.53	22.49	21.45	20.41	19.37	25.26	24.24	23.72	23.21	22.7
	<i>Subtotal Dead wood and litter</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Soil carbon	271.62	248.99	237.49	225.99	214.49	279.71	268.34	262.66	256.99	251.32
TOTAL		548.92	503.19	479.93	456.63	433.33	452.04	433.68	424.52	415.33	406.14

Tiers

Variable/category	Tier for status	Tier for trend
Total growing stock	Tier 1	Tier 1
Net annual increment	Tier 1	Tier 1

Above ground biomass	Tier 1	Tier 1
Below ground biomass	Tier 1	Tier 1
Dead wood	Tier 1	Tier 1
Carbon in above-ground biomass	Tier 1	Tier 1
Carbon in below ground biomass	Tier 1	Tier 1
Carbon in dead wood and litter	Tier 1	Tier 1
Soil carbon	Tier 1	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
Total growing stock	Tier 3: Data sources Recent 10 years National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI 10 years Domestic volume functions Tier 2: Data sources/registers and statistics modelling or old NFI 10 years or partial field inventory Tier 1: Other data sources	Tier 3: Estimate based on repeated compatible tiers 3 (tier for status) Domestic growth functions Tier 2: Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 tier for status Tier 1: Other
Net annual increment	Tier 3: Scientifically tested national volume and growth functions Tier 2: Selection of volume and growth functions as relevant as possible Tier 1: Other	Tier 3: Confirmation/adjustment of functions used through scientific work Tier 2: Review work done to seek alternative functions Tier: 1 Other
Biomass	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied or other domestic or otherwise nationally relevant biomass studies Tier 2: Application of country specific national or sub-national biomass conversion factors from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> Carbon in above ground biomass Carbon in below ground biomass Carbon in dead wood and litter Soil carbon 	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied Tier 2: Application of country specific national or sub-national biomass conversion factors form from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
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Total growing stock	N/A	N/A
Growing stock of broadleaved coniferous	N/A	N/A
Growing stock composition	N/A	N/A
Net annual increment	N/A	N/A
Above-ground biomass	N/A	N/A
Below-ground biomass	N/A	N/A
Dead wood	N/A	N/A
Carbon in above-ground biomass	N/A	N/A
Carbon in below-ground biomass	N/A	N/A
Carbon in dead wood	N/A	N/A
Carbon in litter	N/A	N/A
Soil carbon	N/A	N/A

Other general comments to the table

N/A

4. What is the status of forest production and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

4.1 Categories and definitions

Term	Definition
Primary designated function	The primary function or management objective assigned to a management unit either by legal prescription documented decision of the landowner/manager or evidence provided by documented studies of forest management practices and customary use.
Non wood forest product (NWFP)	Goods derived from forests that are tangible and physical objects of biological origin other than wood.
Commercial value of NWFP	For the purpose of this table, value is defined as the commercial market value at the forest gate.
Category	Definition
Production forest	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Multiple use forest	Forest area designated for more than one purpose and where none of these alone is considered as the predominant designated function.
Total wood removals	The total of industrial round wood removals and woodfuel removals.
...of which woodfuel	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

4.2 National data

4.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	UNEP-WCMC Conservation Databases www.wcmc.org.uk/cis/	conservation	2009	N/A
2	Proceedings, 2003 Workshop on Tropical Secondary Forest Management in Africa: Reality and Perspectives	Community Forests areas	2003	N/A
3	Cole, D., 2003: The Impact of Certification on the Sustainable Use of Devil's Claw (<i>Harpagophytum procumbens</i>) in Namibia. Final Draft, prepared for the Food and Agriculture Organization for the United Nations, Non-wood Forest Products Program	Devil's Claw production	2003	N/A

4	N/A	N/A	N/A	N/A
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4.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

4.2.3 Original data

Information extracted from the Ministry of Agriculture, Water and Forestry Geographic Information System			
	TYPE	IUCN CATEGORY	AREA, HA
!Gawachab	Conservancy	Unset	13 172
!Khob! Naub	Conservancy	VI	274 740
!Khorab	Conservancy	VI	128 277
#Gaingu	Conservancy	VI	773 067
#Khoadi//H#as	Conservancy	VI	336 428
//Gamaseb	Conservancy	VI	174 775
//Huab	Conservancy	VI	181 732
/Audi	Conservancy	VI	33 476
African Wild Dog	Conservancy	VI	382 410
Anabeb	Conservancy	VI	156 999
Balyerwa	Conservancy	VI	16 322
Berseba	Conservancy	VI	726 168
Bethanie	Conservancy	VI	192 252
Doro!nawas Area1	Conservancy	VI	265 378

Doro!nawas Area2	Conservancy	VI	132 471
Doro!nawas/ Twyfelfontein-Uibasen JMA	Conservancy	VI	15 969
Ehrovipuka	Conservancy	VI	197 981
George Mukoya	Conservancy	VI	48 620
Impalila	Conservancy	VI	7 250
Joseph Mbambangandu	Conservancy	VI	4 291
Kasika	Conservancy	VI	14 659
King Nehale	Conservancy	VI	50 834
Kunene River	Conservancy	VI	276 361
Kwandu	Conservancy	VI	18 952
Marienfluss	Conservancy	VI	303 416
Mashi	Conservancy	VI	29 677
Mayuni	Conservancy	VI	15 057
Muduva Nyangana	Conservancy	VI	61 450
N#a-Jaqna	Conservancy	VI	911 980
Nyae Nyae	Conservancy	VI	899 211
Ohungu	Conservancy	VI	119 569
Okamatipati	Conservancy	VI	309 557
Okangundumba	Conservancy	VI	113 075
Omatendeka	Conservancy	VI	161 938
Ondjou	Conservancy	VI	872 900
Orupembe	Conservancy	VI	356 538
Orupupa	Conservancy	VI	187 975
Oskop	Conservancy	VI	9 565
Otjambangu	Conservancy	VI	34 789
Otjimboyo	Conservancy	VI	44 773

Otjituuo	Conservancy	VI	613 252
Otuzemba	Conservancy	VI	99 086
Ovitoto	Conservancy	VI	62 532
Ozonahi	Conservancy	VI	320 353
Ozondundu	Conservancy	VI	74 535
Puros	Conservancy	VI	356 243
Salambala	Conservancy	VI	92 979
Sanitatas	Conservancy	VI	144 588
Sesfontein	Conservancy	VI	246 518
Shamungwa	Conservancy	VI	5 345
Sheya Shuushona	Conservancy	VI	506 557
Sobbe	Conservancy	VI	33 276
Sorris Sorris	Conservancy	VI	229 021
Tare	Conservancy	VI	27 675
Torra	Conservancy	VI	349 276
Tsiseb	Conservancy	VI	791 251
Twyfelfontein-Uibasen	Conservancy	VI	28 607
Uukolonkadi-Ruacana	Conservancy	VI	299 291
Uukwaluudhi	Conservancy	VI	143 678
Wuparo	Conservancy	VI	14 073
Ai-Ais Hot Springs	Game Park	II	432 197
Bwabwata	Game Park	Unset	633 307
Caprivi	Game Park	VI	582 750
Daan Viljoen	Game Park	II	3 910
Eastern Caprivi	Forest Reserve	Unset	160 000
Etosha	National Park	II	2 215 139

Khaudum	Game Park	II	365 791
Mahango	Game Reserve	II	24 462
Mamili	National Park	II	34 317
Mangetti	Game Reserve	Unset	41 990
Mudumu	National Park	II	72 625
Namib Naukluft	National Park	II	4 976 800
Popa	Game Park	III	1 490
Skeleton Coast	Game Park	II	1639000
Sperrgebiet	National Park	Unset	2 600 000
Waterberg Plateau Park	Game Park	II	39 795
Twyfelfontein	Communal Area Conservancy	Unset	28 600

Community Forest Reserves

Name of the area under management	Total area covered, ha	
<u>Before 2005</u>		
Okongo Community Forest	75 000	
Uukwaludhi Community Forest	148 441	
Ukolonkadhi Community Forest	110 417	
Ongandjera Community Forest	121 826	
Oshampula Community Forest	1 070	
Ohepi Community Forest	5 180	
Ndiyona Community Forest	60 000	
<i>Sub-total</i>	<i>521 934</i>	
<u>After 2005</u>		

Ncumcara community forest	15 217	
Ncaute community forest	12 000	
Ncamangoro community forest	26 322	
Mbeyo community forest	41 079	
Hans kanyinga community forest	27 667	
Cuma community forest	11 500	
Likwaterera community forest	13 800	
Gcwatjinga community forest	32 000	
<i>Sub-total</i>	179 585	
<u>After 2010</u>		
Omundaunglio	22 211	
Ehangano	14 703	
Otjombinde	591 001	
Uukwaluudhi	243 233	
Sheya Shuushona	507 373	
Oshiku-Shiithilonde	86 978	
Amudhilo	5 777	
Ngonga	8 444	
Ngoma	19 258	
Izimwe	4 568	
Lizauli	10 069	
Malengalenga	28 236	
Mayuni	15 232	
Mbara	14 696	
Muyako	12 345	
Sifuha	16 730	

Ambrosius Hainguura	13 090	
Shamungwa	128 933	
Ehirivopuka	198 406	
Okangundumba	113 405	
Omatendeka	162 358	
African Wild Dog	473 244	
N#a Jaqna	630 289	
Okamatapati	309 919	
Ondjou	876 280	
Otjituuo	613 278	
Ozonahi	320 481	
sub-total	5 440 537	
Total	6 142 056	

4.3 Analysis and processing of national data

4.3.1 Adjustment

4.3.2 Estimation and forecasting

Due to lack of other information, it is assumed that all the forests reserves, protected areas listed in 4.2.2 were established before 1990 and that the total area of forest designated for conservation purpose has remained constant. The area of community reserves is assumed to have remained constant for 2000 and 2005 and was zero in 1990.

Regarding the multiple-use forest, in addition to the 996 880 ha of reserves (based on the UNEP-WCMC Database source), it should also be considered the Community forest reserves. In 1990, the latter were not available; but from 2000 to 2005, they represented 521 934 ha, of which 85 % are forest (443 644 ha); after 2005, their area is 701 519, of which 85 % are forest (596 291 ha); after 2010 their area was 6,142,056 ha of which 85% are forest (5,220,747 ha).

FRA Categories	Area in hectares				
	1990	2000	2005	2010	2015
Multi-purpose	996 880	1 440 524	1 440 524	1 593 171	1 593 171

FRA Categories	Area in hectares				
	1990	2000	2005	2010	2015
Conservation	689	689	689	689	689
Multi-purpose	997	1 441	1 441	1 593	1 593
Unknown	7 076	5 902	5 531	5 008	5 008
Total Forest	8 762	8 032	7 661	7 290	7 290

4.3.3 Reclassification

Based on the expert knowledge, estimates have been made, for the different reserves, about the importance of forest area and its function.

Name	IUCN category	Percentage of forest, and	Forest function	
			Conservation	Multipurpose
Ai-Ais Hot Springs	II	15%	100%	
Bwabwata	Unset	60%		100%
Caprivi	VI	80%		100%
Daan Viljoen	II	25%	100%	
Eastern Caprivi	Unset	85%		100%

Etosha	II	15%	100%	
Khaudum	II	60%	100%	
Mahango	II	45%	100%	
Mamili	II	55%	100%	
Mangetti	Unset	35%		100%
Mudumu	II	50%	100%	
Namib Naukluft	II	0%		
Popa	III	5%	100%	
Skeleton Coast	II	0%		
Sperrgebiet	Unset	0%		
Waterberg Plateau Park	II	10%	100%	
Twyfelfontein	Unset	5%	100%	

Note: 1. Not from UNEP-WCMC Database

Name	Total area in ha	Forest area in ha	Forest function	
			Conservation	Multipurpose
			Conservation	Multipurpose
Ai-Ais Hot Springs	432 197.40	64 829.61	64 829.61	
Bwabwata	633 307.09	379 984.25		379 984.25
Caprivi	582 750.00	466 200.00		466 200.00
Daan Viljoen	3 909.50	977.38	977.38	
Eastern Caprivi	160 000.00	136 000.00		136 000.00
Etosha	2 215 139.50	332 270.93	332 270.93	
Khaudum	365 790.70	219 474.42	219 474.42	
Mahango	24 462.00	11 007.90	11 007.90	

Mamili	34 317.00	18 874.35	18 874.35	
Mangetti	41 990.00	14 696.50		14 696.50
Mudumu	72 624.64	36 312.32	36 312.32	
Popa	14.90	0.75	0.75	
Waterberg Plateau Park	39 794.60	3 979.46	3 979.46	
Twyfelfontein	28 600.00	1 430.00	1 430.00	
Total		1 686 037.87	689 157.12	996 880.75

4.4 Data

Table 4a



Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	0	0	0	0	0
	Multiple use forest	997	1441	1441	1593	1600

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
1 st	N/A	N/A	N/A	N/A
2 nd	N/A	N/A	N/A	N/A
3 rd	N/A	N/A	N/A	N/A
4 th	N/A	N/A	N/A	N/A
5 th	N/A	N/A	N/A	N/A
6 th	N/A	N/A	N/A	N/A
7 th	N/A	N/A	N/A	N/A
8 th	N/A	N/A	N/A	N/A
9 th	N/A	N/A	N/A	N/A

10 th	N/A	N/A	N/A	N/A
TOTAL			.00	

2010	
Name of local currency	N/A

Category
Plant products / raw material
1 Food
2 Fodder
3 Raw material for medicine and aromatic products
4 Raw material for colorants and dyes
5 Raw material for utensils handicrafts construction
6 Ornamental plants
7 Exudates
8 Other plant products
Animal products / raw material
9 Living animals
10 Hides skins and trophies
11 Wild honey and beeswax
12 Wild meat
13 Raw material for medicine
14 Raw material for colorants
15 Other edible animal products
16 Other non-edible animal products

Table 4c Pre-filled data from FAOSTAT

Year	FRA 2015 category (1000 m ³ u.b.)	
	Total wood removals	...of which woodfuel

1990	678.2	678.24
1991	685.7	685.7
1992	692.2	692.2
1993	711.7	711.72
1994	720.5	720.46
1995	730.8	730.8
1996	746.9	746.88
1997	762.6	762.59
1998	761.4	761.37
1999	767.7	767.67
2000	774.2	774.17
2001	778.3	778.32
2002	782.6	782.61
2003	787	787.02
2004	791.6	791.57
2005	796.3	796.26
2006	801.2	801.17
2007	806.2	806.2
2008	811.3	811.35
2009	816.6	816.62
2010	822	822.02
2011	827.1	827.3

Tiers

Category	Tier for status	Tier for reported trend
Production forest	Tier 1	Tier 1
Multiple use forest	Tier 2	Tier 2

Tier Criteria

Category	Tier for status	Tier for reported trend
Production forest Multiple use forest	Tier 3: Updated including field verifications national forest maps including functions Tier 2: Forest maps older than 6 years including forest functions Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	N/A	N/A
Multiple use forest	N/A	N/A
Total wood removals	N/A	N/A
Commercial value of NWFP	N/A	N/A

Other general comments to the table

N/A

5. How much forest area is managed for protection of soil and water and ecosystem services?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

5.1 Categories and definitions

Category	Definition
Protection of soil and water	Forest area designated or managed for protection of soil and water
...of which production of clean water (<i>sub-category</i>)	Forest area primarily designated or managed for water production, where most human uses are excluded or heavily modified to protect water quality.
...of which coastal stabilization (<i>sub-category</i>)	Forest area primarily designated or managed for coastal stabilization.
...of which desertification control (<i>sub-category</i>)	Forest area primarily designated or managed for desertification control.
...of which avalanche control (<i>sub-category</i>)	Forest area primarily designated or managed to prevent the development or impact of avalanches on human life assets or infrastructure.
...of which erosion, flood protection or reducing flood risk (<i>sub-category</i>)	Forest area primarily designated or managed for protecting communities or assets from the impacts of erosion riparian floods and landslides or for providing flood plain services.
...of which other (<i>sub-category</i>)	Forest area primarily designated or managed for other protective functions.
Ecosystem services, cultural or spiritual values	Forest area primarily designated or managed for selected ecosystem services or cultural or spiritual values.
...of which public recreation (<i>sub-category</i>)	Forest area designated or managed for public recreation.
...of which carbon storage or sequestration (<i>sub-category</i>)	Forest area designated or managed for carbon storage or sequestration.
...of which spiritual or cultural services (<i>sub-category</i>)	Forest area designated or managed for spiritual or cultural services.
...of which other (<i>sub-category</i>)	Forest area designated or managed for other ecosystem services.

5.2 National data

5.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A

3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

5.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

5.2.3 Original data

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5.3 Analysis and processing of national data

5.3.1 Adjustment

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5.3.2 Estimation and forecasting




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5.3.3 Reclassification

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5.4 Data

Table 5a

Categories		Forest area (1000 hectares)				
		1990	2000	2005	2010	2015
	Protection of soil and water	N/A	N/A	N/A	N/A	N/A
	... of which production of clean water	N/A	N/A	N/A	N/A	N/A
	... of which coastal stabilization	N/A	N/A	N/A	N/A	N/A

	... of which desertification control	N/A	N/A	N/A	N/A	N/A
	... of which avalanche control	N/A	N/A	N/A	N/A	N/A
	... of which erosion, flood protection or reducing flood risk	N/A	N/A	N/A	N/A	N/A
	... of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A

Other

N/A

Table 5b

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015
Ecosystem services, cultural or spiritual values	N/A	N/A	N/A	N/A	N/A
...of which public recreation	N/A	N/A	N/A	N/A	N/A
...of which carbon storage or sequestration	N/A	N/A	N/A	N/A	N/A
...of which spiritual or cultural services	N/A	N/A	N/A	N/A	N/A
...of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A

Tiers

Category	Tier for reported trend	Tier for status
Protection of soil and water	N/A	N/A
Ecosystem services, cultural or spiritual values	N/A	N/A

Tier criteria

Category	Tier for status	Tier for reported trend
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Protection of soil and water	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations or legislation relating to soil and water protection. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Cultural or spiritual values • Public recreation • Spiritual or cultural services • Other 	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	N/A	N/A
Production of clean water	N/A	N/A
Coastal stabilization	N/A	N/A
Desertification control	N/A	N/A
Avalanche control	N/A	N/A
Erosion, flood protection or reducing flood risk	N/A	N/A
Other protective functions	N/A	N/A
Ecosystem services, cultural or spiritual values	N/A	N/A
Public recreation	N/A	N/A
Carbon storage or sequestration	N/A	N/A
Spiritual or cultural services	N/A	N/A
Other ecosystem services	N/A	N/A

Other general comments to the table

N/A

6. How much forest area is protected and designated for the conservation of biodiversity and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

6.1 Categories and definitions

Category	Definition
Conservation of biodiversity	Forest area designated primarily for conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas.
Forest area within protected areas	Forest area within formally established protected areas independently of the purpose for which the protected areas were established.

6.2 National data

6.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	UNEP-WCMC Conservation Databases www.wcmc.org.uk/cis/	conservation	2009	N/A
2	Proceedings, 2003 Workshop on Tropical Secondary Forest Management in Africa: Reality and Perspectives	Community Forests areas	2003	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

6.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

6.2.3 Original data

See 4.2.3.

Information extracted from the Ministry of Agriculture, Water and Forestry Geographic Information System

NAME	TYPE	IUCN CATEGORY	AREA, HA
!Gawachab	Conservancy	Unset	13 172
!Khob! Naub	Conservancy	VI	274 740
!Khorab	Conservancy	VI	128 277
#Gaingu	Conservancy	VI	773 067
#Khoadi//H#as	Conservancy	VI	336 428
//Gamaseb	Conservancy	VI	174 775
//Huab	Conservancy	VI	181 732
/Audi	Conservancy	VI	33 476
African Wild Dog	Conservancy	VI	382 410
Anabeb	Conservancy	VI	156 999
Balyerwa	Conservancy	VI	16 322
Berseba	Conservancy	VI	726 168
Bethanie	Conservancy	VI	192 252
Doro!nawas Area1	Conservancy	VI	265 378
Doro!nawas Area2	Conservancy	VI	132 471
Doro!nawas/ Twyfelfontein-Uibasen JMA	Conservancy	VI	15 969
Ehriovipuka	Conservancy	VI	197 981
George Mukoya	Conservancy	VI	48 620
Impalila	Conservancy	VI	7 250
Joseph Mbambangandu	Conservancy	VI	4 291
Kasika	Conservancy	VI	14 659
King Nehale	Conservancy	VI	50 834
Kunene River	Conservancy	VI	276 361

Kwandu	Conservancy	VI	18 952
Marienfluss	Conservancy	VI	303 416
Mashi	Conservancy	VI	29 677
Mayuni	Conservancy	VI	15 057
Muduva Nyangana	Conservancy	VI	61 450
N#a-Jaqna	Conservancy	VI	911 980
Nyae Nyae	Conservancy	VI	899 211
Ohungu	Conservancy	VI	119 569
Okamatipati	Conservancy	VI	309 557
Okangundumba	Conservancy	VI	113 075
Omatendeka	Conservancy	VI	161 938
Ondjou	Conservancy	VI	872 900
Orupembe	Conservancy	VI	356 538
Orupupa	Conservancy	VI	187 975
Oskop	Conservancy	VI	9 565
Otjambangu	Conservancy	VI	34 789
Otjimboyo	Conservancy	VI	44 773
Otjituuo	Conservancy	VI	613 252
Otuzemba	Conservancy	VI	99 086
Ovitoto	Conservancy	VI	62 532
Ozonahi	Conservancy	VI	320 353
Ozondundu	Conservancy	VI	74 535
Puros	Conservancy	VI	356 243
Salambala	Conservancy	VI	92 979
Sanitatas	Conservancy	VI	144 588
Sesfontein	Conservancy	VI	246 518

Shamungwa	Conservancy	VI	5 345
Sheya Shuushona	Conservancy	VI	506 557
Sobbe	Conservancy	VI	33 276
Sorris Sorris	Conservancy	VI	229 021
Tare	Conservancy	VI	27 675
Torra	Conservancy	VI	349 276
Tsiseb	Conservancy	VI	791 251
Twyfelfontein-Uibasen	Conservancy	VI	28 607
Uukolonkadi-Ruacana	Conservancy	VI	299 291
Uukwaluudhi	Conservancy	VI	143 678
Wuparo	Conservancy	VI	14 073
Ai-Ais Hot Springs	Game Park	II	432 197
Bwabwata	Game Park	Unset	633 307
Caprivi	Game Park	VI	582 750
Daan Viljoen	Game Park	II	3 910
Eastern Caprivi	Forest Reserve	Unset	160 000
Etosha	National Park	II	2 215 139
Khaudum	Game Park	II	365 791
Mahango	Game Reserve	II	24 462
Mamili	National Park	II	34 317
Mangetti	Game Reserve	Unset	41 990
Mudumu	National Park	II	72 625
Namib Naukluft	National Park	II	4 976 800
Popa	Game Park	III	1 490
Skeleton Coast	Game Park	II	1639000
Sperrgebiet	National Park	Unset	2 600 000

Waterberg Plateau Park	Game Park	II	39 795
Twyfelfontein	Communal Area Conservancy	Unset	28 600

Community Forest Reserves

Name of the area under management	Total area covered, ha	
<u>Before 2005</u>		
Okongo Community Forest	75 000	
Uukwaludhi Community Forest	148 441	
Ukolonkadhi Community Forest	110 417	
Ongandjera Community Forest	121 826	
Oshampula Community Forest	1 070	
Ohepi Community Forest	5 180	
Ndiyona Community Forest	60 000	
<i>Sub-total</i>	<i>521 934</i>	
<u>After 2005</u>		
Ncumcara community forest	15 217	
Ncaute community forest	12 000	
Ncamangoro community forest	26 322	
Mbeyo community forest	41 079	
Hans kanyinga community forest	27 667	
Cuma community forest	11 500	
Likwaterera community forest	13 800	
Gcwatjinga community forest	32 000	

<i>Sub-total</i>	179 585	
<u>After 2010</u>		
Omundaunglio	22 211	
Ehangano	14 703	
Otjombinde	591 001	
Uukwaluudhi	243 233	
Sheya Shuushona	507 373	
Oshiku-Shiithilonde	86 978	
Amudhilo	5 777	
Ngonga	8 444	
Ngoma	19 258	
Izimwe	4 568	
Lizauli	10 069	
Malengalenga	28 236	
Mayuni	15 232	
Mbara	14 696	
Muyako	12 345	
Sifuha	16 730	
Ambrosius Hainguura	13 090	
Shamungwa	128 933	
Ehirivopuka	198 406	
Okangundumba	113 405	
Omatendeka	162 358	
African Wild Dog	473 244	
N#a Jaqna	630 289	
Okamatapati	309 919	

Ondjou	876 280	
Otjituuo	613 278	
Ozonahi	320 481	
<i>sub-total</i>	5 440 537	
Total	6 142 056	

6.3 Analysis and processing of national data

6.3.1 Adjustment

6.3.2 Estimation and forecasting

Due to lack of other information, it is assumed that all the forests reserves, protected areas listed in 4.2.2 were established before 1990 and that the total area of forest designated for conservation purpose has remained constant. The area of community reserves is assumed to have remained constant for 2000 and 2005 and was zero in 1990.

Regarding the multiple-use forest, in addition to the 996 880 ha of reserves (based on the UNEP-WCMC Database source), it should also be considered the Community forest reserves. In 1990, the latter were not available; but from 2000 to 2005, they represented 521934 ha, of which 85 % are forest (443 644 ha); after 2005, their area is 701519, of which 85 % are forest (596 291 ha); after 2010 their area was 6,142,056 ha of which 85% are forest (5,220,747 ha).

FRA Categories	Area in hectares				
	1990	2000	2005	2010	2015
Multi-purpose	996 880	1 440 524	1 440 524	1 593 171	1 593 171

FRA Categories	Area in hectares				
	1990	2000	2005	2010	2015

Conservation	689	689	689	689	689
Multi-purpose	997	1 441	1 441	1 593	1 593
Unknown	7 076	5 902	5 531	5 008	5 008
Total Forest	8 762	8 032	7 661	7 290	7 290

6.3.3 Reclassification

Based on the expert knowledge, estimates have been made, for the different reserves, about the importance of forest area and its function.

Name	IUCN category	Percentage of forest, and	Forest function	
			Conservation	Multipurpose
Ai-Ais Hot Springs	II	15%	100%	
Bwabwata	Unset	60%		100%
Caprivi	VI	80%		100%
Daan Viljoen	II	25%	100%	
Eastern Caprivi	Unset	85%		100%
Etosha	II	15%	100%	
Khaudum	II	60%	100%	
Mahango	II	45%	100%	
Mamili	II	55%	100%	
Mangetti	Unset	35%		100%
Mudumu	II	50%	100%	
Namib Naukluft	II	0%		
Popa	III	5%	100%	



Skeleton Coast	II	0%		
Sperrgebiet	Unset	0%		
Waterberg Plateau Park	II	10%	100%	
Twyfelfontein	Unset	5%	100%	

Note: 1. Not from UNEP-WCMC Database

Name	Total area in ha	Forest area in ha	Forest function	
			Conservation	Multipurpose
Ai-Ais Hot Springs	432 197.40	64 829.61	64 829.61	
Bwabwata	633 307.09	379 984.25		379 984.25
Caprivi	582 750.00	466 200.00		466 200.00
Daan Viljoen	3 909.50	977.38	977.38	
Eastern Caprivi	160 000.00	136 000.00		136 000.00
Etosha	2 215 139.50	332 270.93	332 270.93	
Khaudum	365 790.70	219 474.42	219 474.42	
Mahango	24 462.00	11 007.90	11 007.90	
Mamili	34 317.00	18 874.35	18 874.35	
Mangetti	41 990.00	14 696.50		14 696.50
Mudumu	72 624.64	36 312.32	36 312.32	
Popa	14.90	0.75	0.75	
Waterberg Plateau Park	39 794.60	3 979.46	3 979.46	
Twyfelfontein	28 600.00	1 430.00	1 430.00	
Total		1 686 037.87	689 157.12	996 880.75

6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Conservation of biodiversity	689	689	689	689	689
	Forest area within protected areas	689	689	689	689	689

Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	Tier 2	Tier 1
Forest area within protected areas	Tier 2	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
<ul style="list-style-type: none"> Conservation of biodiversity Forests within protected areas 	<p>Tier 3: Data obtained from national or state agencies responsible for conservation and protected area or legislation relating to area protection. Tier 2: Studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates Tier 1 Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other</p>

6.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Conservation of biodiversity	N/A	N/A
Forest area within protected areas	N/A	N/A

Other general comments to the table

N/A

7. What is the area of forest affected by woody invasive species?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

7.1 Categories and definitions

Category	Definition
Invasive species	Species that are non-native to a particular ecosystem and whose introduction and spread cause, or are likely to cause, socio-cultural, economic or environmental harm or harm to human health.

7.2 National data

7.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

7.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

7.2.3 Original data

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7.3 Analysis and processing of national data

7.3.1 Adjustment

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7.3.2 Estimation and forecasting

--

7.3.3 Reclassification

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7.4 Data

Table 7

Scientific name of woody invasive species	Forest area affected (000 ha)	
	2005	2010
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A
6.	N/A	N/A
7.	N/A	N/A
8.	N/A	N/A
9.	N/A	N/A
10.	N/A	N/A
Total	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
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Invasive species	N/A	N/A
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Tier Criteria

Category	Tier for status	Tier for reported trend
Invasive species	Tier 3: Systematic assessment in forest inventory or other survey (e.g. by conservation department) within the last 5 years) Tier 2: Systematic assessment in forest inventory or other survey (e.g. by conservation department conducted more than 5 years ago) Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

7.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Invasive species	N/A	N/A

Other general comments to the table
N/A

8. How much forest area is damaged each year?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

8.1 Categories and definitions

Category	Definition
Number of fires	Number of fires per year
Burned area	Area burned per year
Outbreaks of insects	A detectable reduction in forest health caused by a sudden increase in numbers of harmful insects.
Outbreaks of diseases	A detectable reduction in forest health caused by a sudden increase in numbers of harmful pathogens, such as bacteria, fungi, phytoplasma or virus.
Severe weather events	Damage caused severe weather events, such as snow, storm, drought, etc.

8.2 National data

8.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

8.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

8.2.3 Original data

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8.3 Analysis and processing of national data

8.3.1 Adjustment

8.3.2 Estimation and forecasting

8.3.3 Reclassification

8.4 Data

Table 8a

Category		000 ha, number of fires									
		2003		2004		2005		2006		2007	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
CFRQ	Total land area burned	4206	N/A	4018	N/A	4018	N/A	5174	N/A	6091	N/A
CFRQ	... of which forest area burned	0.69	N/A	0.48	N/A	1.34	N/A	0.96	N/A	0.23	N/A
Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
CFRQ	Total land area burned	3721	N/A	7247	N/A	6154	N/A	6618	N/A	6922	N/A


	... of which forest area burned	6.24	N/A	0.44	N/A	0.27	N/A	1.07	N/A	1.23	N/A
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Table 8b

Outbreak category	Description/name	Year(s) of latest outbreak	Area damaged (000 hectares)
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Outbreak category
1 Insects
2 Diseases
3 Severe weather events

Tiers

Category	Tier for status	Tier for trend
Area affected by fire	Tier 2	Tier 2
<ul style="list-style-type: none"> • Insects • Diseases • Severe weather events 	N/A	N/A

Tier criteria

Category	Tier for status	Tier for reported trend
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Burned area	Tier 3 : National fire monitoring routines Tier 2 : Remote sensing surveys Tier 1 : Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Insects • Diseases • Severe weather events 	Tier 3 : Systematic survey (e.g. via inventory or aerial damage assessment) Tier 2 : Management records Tier 1 : Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

8.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Burned area	N/A	N/A
Insects	N/A	N/A
Diseases	N/A	N/A
Severe weather events	N/A	N/A

Other general comments to the table

N/A

9. What is the forest area with reduced canopy cover?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

Category	Definition
Reduction in canopy cover	Forest that has undergone a reduction of canopy cover of more than 20% between the years 2000 and 2010 within the forest canopy cover range of 30-80% as detected by the MODIS VCF sensor.

Table 9

Category	Area of forest with reduced canopy cover (000 ha)
Reduction in canopy cover	21.31

Tiers

Category	Tier for reported trend
Reduction in canopy cover	Tier 2

Tier criteria

Category	Tier for reported trend
Reduction in canopy cover	Tier 3 : Remote sensing with ground truthing and/or Landsat imagery Tier 2 : Remote sensing using Modis (using pre-filled data provided by FAO) Tier 1 : Expert opinion

Comments

Category	Comments related to data definitions etc
Reduction in canopy cover	N/A

Other general comments

--

10. What forest policy and regulatory framework exists to support implementation of sustainable forest management SFM?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

10.1 Categories and definitions

Category	Definition
Policies supporting sustainable forest management	Policies or strategies that explicitly encourage sustainable forest management.
Legislation and regulations supporting sustainable forest management	Legislation and regulations that govern and guide sustainable forest management, operations and use.

10.2 National data

10.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

10.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

10.2.3 Original data

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10.3 Data

Table 10

Category				
	National	Sub-national		
		Regional	Provincial/State	Local
Policies supporting sustainable forest management	yes	yes		
... of which, in <u>publicly</u> owned forests	yes			
... of which, in <u>privately</u> owned forests	no			
Legislation and regulations supporting sustainable forest management	yes	yes		
... of which, in <u>publicly</u> owned forests	yes			
... of which, in <u>privately</u> owned forests	no			

10.4 Comments

Variable / category	Comments related to data definitions etc
Policies supporting sustainable forest management	Forest policy
Legislation and regulations supporting sustainable forest management	Forest Act, SADC protocol on Forestry

Other general comments

--

11. Is there a national platform that promotes stakeholder participation in forest policy development?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

11.1 Categories and definitions

Category	Definition
National stakeholder platform	A recognized procedure that a broad range of stakeholders can use to provide opinions, suggestions, analysis, recommendations and other input into the development of national forest policy.

11.2 National data

11.2.1 Data sources

	References to sources of information	Years	Additional comments
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A

Table 11

Is there a national platform that promotes or allows for stakeholder participation in forest policy development?	yes
--	-----

11.3 Comments

Category	Comments related to data definitions etc
National stakeholder platform	Namibia Forestry Council

Other general comments

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12. What is the forest area intended to be in permanent forest land use and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

12.1 Categories and definitions

Category	Definition
Forest area intended to be in permanent forest land use	Forest area that is designated or expected to be retained as forest and is highly unlikely to be converted to other land use.
...of which permanent forest estate (<i>sub-category</i>)	Forest area that is designated by law or regulation to be retained as forest and may not be converted to other land use.

12.2 National data

12.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	UNEP-WCMC Conservation Databases www.wcmc.org.uk/cis/	conservation	2009	N/A
2	Proceedings, 2003 Workshop on Tropical Secondary Forest Management in Africa: Reality and Perspectives	Community Forests areas	2003	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

12.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

12.2.3 Original data

Information extracted from the Ministry of Agriculture, Water and Forestry Geographic Information System			
NAME	TYPE	IUCN CATEGORY	AREA, HA
!Gawachab	Conservancy	Unset	13 172
!Khob! Naub	Conservancy	VI	274 740
!Khorab	Conservancy	VI	128 277
#Gaingu	Conservancy	VI	773 067
#Khoadi//H#as	Conservancy	VI	336 428
//Gamaseb	Conservancy	VI	174 775
//Huab	Conservancy	VI	181 732
/Audi	Conservancy	VI	33 476
African Wild Dog	Conservancy	VI	382 410
Anabeb	Conservancy	VI	156 999
Balyerwa	Conservancy	VI	16 322
Berseba	Conservancy	VI	726 168
Bethanie	Conservancy	VI	192 252
Doro!nawas Area1	Conservancy	VI	265 378
Doro!nawas Area2	Conservancy	VI	132 471
Doro!nawas/ Twyfelfontein-Uibasen JMA	Conservancy	VI	15 969
Ehrovipuka	Conservancy	VI	197 981
George Mukoya	Conservancy	VI	48 620
Impalila	Conservancy	VI	7 250
Joseph Mbambangandu	Conservancy	VI	4 291
Kasika	Conservancy	VI	14 659

King Nehale	Conservancy	VI	50 834
Kunene River	Conservancy	VI	276 361
Kwandu	Conservancy	VI	18 952
Marienfluss	Conservancy	VI	303 416
Mashi	Conservancy	VI	29 677
Mayuni	Conservancy	VI	15 057
Muduva Nyangana	Conservancy	VI	61 450
N#a-Jaqna	Conservancy	VI	911 980
Nyae Nyae	Conservancy	VI	899 211
Ohungu	Conservancy	VI	119 569
Okamatipati	Conservancy	VI	309 557
Okangundumba	Conservancy	VI	113 075
Omatendeka	Conservancy	VI	161 938
Ondjou	Conservancy	VI	872 900
Orupembe	Conservancy	VI	356 538
Orupupa	Conservancy	VI	187 975
Oskop	Conservancy	VI	9 565
Otjambangu	Conservancy	VI	34 789
Otjimboyo	Conservancy	VI	44 773
Otjituuo	Conservancy	VI	613 252
Otuzemba	Conservancy	VI	99 086
Ovitoto	Conservancy	VI	62 532
Ozonahi	Conservancy	VI	320 353
Ozondundu	Conservancy	VI	74 535
Puros	Conservancy	VI	356 243
Salambala	Conservancy	VI	92 979

Sanitatas	Conservancy	VI	144 588
Sesfontein	Conservancy	VI	246 518
Shamungwa	Conservancy	VI	5 345
Sheya Shuushona	Conservancy	VI	506 557
Sobbe	Conservancy	VI	33 276
Sorris Sorris	Conservancy	VI	229 021
Tare	Conservancy	VI	27 675
Torra	Conservancy	VI	349 276
Tsiseb	Conservancy	VI	791 251
Twyfelfontein-Uibasen	Conservancy	VI	28 607
Uukolonkadi-Ruacana	Conservancy	VI	299 291
Uukwaluudhi	Conservancy	VI	143 678
Wuparo	Conservancy	VI	14 073
Ai-Ais Hot Springs	Game Park	II	432 197
Bwabwata	Game Park	Unset	633 307
Caprivi	Game Park	VI	582 750
Daan Viljoen	Game Park	II	3 910
Eastern Caprivi	Forest Reserve	Unset	160 000
Etosha	National Park	II	2 215 139
Khaudum	Game Park	II	365 791
Mahango	Game Reserve	II	24 462
Mamili	National Park	II	34 317
Mangetti	Game Reserve	Unset	41 990
Mudumu	National Park	II	72 625
Namib Naukluft	National Park	II	4 976 800
Popa	Game Park	III	1 490

Skeleton Coast	Game Park	II	1639000
Sperrgebiet	National Park	Unset	2 600 000
Waterberg Plateau Park	Game Park	II	39 795
Twyfelfontein	Communal Area Conservancy	Unset	28 600

Community Forest Reserves

Name of the area under management	Total area covered, ha	
<u>Before 2005</u>		
Okongo Community Forest	75 000	
Uukwaludhi Community Forest	148 441	
Ukolonkadhi Community Forest	110 417	
Ongandjera Community Forest	121 826	
Oshampula Community Forest	1 070	
Ohepi Community Forest	5 180	
Ndiyona Community Forest	60 000	
<i>Sub-total</i>	<i>521 934</i>	
<u>After 2005</u>		
Ncumcara community forest	15 217	
Ncaute community forest	12 000	
Ncamangoro community forest	26 322	
Mbeyo community forest	41 079	
Hans kanyinga community forest	27 667	
Cuma community forest	11 500	

Likwaterera community forest	13 800	
Gcwatjinga community forest	32 000	
<i>Sub-total</i>	179 585	
<u>After 2010</u>		
Omundaunglio	22 211	
Ehangano	14 703	
Otjombinde	591 001	
Uukwaluudhi	243 233	
Sheya Shuushona	507 373	
Oshiku-Shiithilonde	86 978	
Amudhilo	5 777	
Ngonga	8 444	
Ngoma	19 258	
Izimwe	4 568	
Lizauli	10 069	
Malengalenga	28 236	
Mayuni	15 232	
Mbara	14 696	
Muyako	12 345	
Sifuha	16 730	
Ambrosius Hainguura	13 090	
Shamungwa	128 933	
Ehirivopuka	198 406	
Okangundumba	113 405	
Omatendeka	162 358	
African Wild Dog	473 244	

N#a Jaqna	630 289	
Okamatapati	309 919	
Ondjou	876 280	
Otjituuo	613 278	
Ozonahi	320 481	
<i>sub-total</i>	5 440 537	
Total	6 142 056	

12.3 Analysis and processing of national data

12.3.1 Adjustment

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12.3.2 Estimation and forecasting



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12.3.3 Reclassification

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12.4 Data

Table 12

Categories		Forest area 2010 (000 ha)
	Forest area intended to be in permanent forest land use	
	... of which permanent forest estate	136

Tiers

Category	Tier for status
Forest area intended to be in permanent forest land use	Tier 1

Permanent forest estate	Tier 1
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Tier Criteria

Category	Tier for status
Forest area intended to be in permanent forest land use	Tier 3 : National or sub-national land use plans strategy documents or other reports within the past 10 years Tier 2 : National or sub-national land use plans strategy documents or other reports within the past 20 years Tier 1 : Other
Permanent forest estate	Tier 3 : National or sub-national land use plans strategy documents or other reports within the past 10 years Tier 2 : National or sub-national land use plans strategy documents or other reports within the past 20 years Tier 1 : Other

12.5 Comments

Category	Comments related to data definitions etc
Forest area intended to be in permanent forest land use	N/A
Permanent forest estate	N/A

Other general comments

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13. How does your country measure and report progress towards SFM at the national level?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

13.1 Categories and definitions

Category	Definition
Forest area monitored under a national forest monitoring framework	Forest area monitored by a national monitoring framework or systems that provide measurement based periodic monitoring of forest extent and quality.
Forest reporting at national scale	National reporting of forest extent and characteristics that includes some measure of progress toward sustainable forest management.

13.2 National data

13.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

13.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

13.3 Data

Table 13a

Category	% of total forest area	Most recent year	Check all boxes that apply					
			Continuous	Periodic	Permanent ground plots	Temporary ground plots	Aerial/remote sensing sample based	Aerial/remote sensing full coverage
Forest inventory	N/A	N/A	no	no	no	yes	no	no
Other field assessments	N/A	N/A	no	no	no	yes	no	no
Updates to other sources	N/A	N/A	no	no	no	no	no	no
Expert estimate	100	2014						

Table 13b

Type of forest reporting used at national scale	Check boxes that apply
1 Criteria and Indicators reporting	no
2 Periodic national state of the forest report	yes
3 Other (please document)	no
4 None	no

Other type of forest reporting
N/A

13.4 Comments

Category	Comments
N/A	N/A
N/A	N/A
N/A	N/A

Other general comments

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14. What is the area of forest under a forest management plan and how is this monitored?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

14.1 Categories and definitions

Category	Definition
Forest area with management plan	Forest area that has a long-term documented management plan, aiming at defined management goals which is periodically revised
...of which for production (<i>sub-category</i>)	Forest management plan mainly focused on production
...of which for conservation (<i>sub-category</i>)	Forest management plan mainly focused on conservation
Monitoring of forest management plans	Government monitoring of forest management plan implementation conducted through field visits or audits of forest management plan performance

14.2 National data

14.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	UNEP-WCMC Conservation Databases www.wcmc.org.uk/cis/	conservation	2009	N/A
2	Proceedings, 2003 Workshop on Tropical Secondary Forest Management in Africa: Reality and Perspectives	Community Forests areas	2003	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

14.3 Data

Table 14a

Forest plan type	Forest area 2010 (000 ha)
Forest area with management plan	136
... of which for production	N/A
... of which for conservation	N/A

Table 14b

Indicate which (if any) of the following are required in forest management plans in your country

1 Soil and water management	no
2 High conservation value forest delineation	yes
3 Social considerations community involvement	yes

Table 14c

Percent of area under forest management plan that is monitored annually	0
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Tiers

Category	Tier for status
Forest area with management plan	Tier 2
Percent of area under forest management plan that is monitored annually	Tier 1

Tier criteria

Category	Tier for status
Forest area with management plan	Tier 3 : Reports that describe national records 5 years old or less that contain long-term forest monitoring plans Tier 2 : Industry or other records indicating the presence of a long-term forest management plan Tier 1 : Other
Percent of area under forest management plan that is monitored annually	Tier 3 : Government documentation of monitoring extent Tier 2 : Reports from forest managers or other documental sources Tier 1 : Other

14.4 Comments

Category	Comments
Forest area with management plan	It is considered that the Community forest reserves have a management plan.
N/A	N/A
N/A	N/A

Other general comments

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15. How are stakeholders involved in the management decision making for publicly owned forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

15.1 Categories and definitions

Category	Definition
Stakeholder involvement	Stakeholder involvement is defined as significant inputs into at least one aspect of forest management at the operational scale

Table 15

Please indicate the type of stakeholder involvement in forest management decision making required in your country	
1. Planning phase	yes
2. Operations phase	yes
3. Review of operations	no

Tiers

Category	Tier for status
Type of stakeholder inputs	Tier 2

Tier criteria

Category	Tier for status
Type of stakeholder inputs	Tier 3 : Government (national or sub-national) documentation of stakeholder inputs Tier 2 : Government (national or subnational) requirement but stakeholder inputs not documented Tier 1 : Other

15.2 Comments

Category	Comments
N/A	N/A
N/A	N/A
N/A	N/A

Other general comments

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16. What is the area of forest under an independently verified forest certification scheme?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

16.1 Categories and definitions

Category	Definition
FSC certification	Forest area certified under the Forest Stewardship Council certification scheme
PEFC certification	Forest area certified under the Programme for the Endorsement of Forest Certification scheme
Other international forest management certification	Forest area certified under an international forest management certification scheme with published standards and is independently verified by a third-party, excluding FSC and PEFC certification.
Certified forest area using a domestic forest management certification scheme	Area certified under a forest management certification scheme with published standards that are nationally recognized and independently verified by a thirdparty

16.2 Data

Table 16a













International forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	FSC	0	0	270.73	270.73	270.73	292.16	306.49
	PEFC	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	219.62	219.62	327.92	277.32	270.03	275.17	
	PEFC	0	0	0	0	0	0	
	Other	0	0	0	0	0	0	

Table 16b

Domestic forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	1.Name	0	0	0	0	0	0	0
	2.Name	0	0	0	0	0	0	0
	3.Name	0	0	0	0	0	0	0

		2007	2008	2009	2010	2011	2012	
	1.Name	0	0	0	0	0	0	
	2.Name	0	0	0	0	0	0	
	3.Name	0	0	0	0	0	0	

Tier criteria

Category	Tier for status
International forest management certification	Tier 3: International forest management scheme records maintained by the certifying organization for the reporting year Tier 2: International forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other
Domestic forest management certification	Tier 3: National registry reports for domestic forest management certification maintained by the certifying organization for the reporting year Tier 2: Domestic forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other

Tiers

Category	Tier for status
International forest management certification	Tier 3
Domestic forest management certification	N/A

16.3 Comments

Category	Comments related to data definitions etc
Certified forest area using an international forest management certification scheme	N/A
Domestic forest management certification	N/A

Other general comments

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17. How much money do governments collect from and spend on forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

17.1 Categories and definitions

Category	Definition
Forest revenue	All government revenue collected from the domestic production and trade of forest products and services. For this purpose revenue include: <ul style="list-style-type: none"> • <u>Goods</u> : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products. • <u>Services</u> : including concession fees and royalties, stumpage payments, public timber sales revenue taxes and charges based on forest area or yield, taxes on domestic trade and export of forest products, special levies on forestry activities and payments into forest related funds, other miscellaneous inspection, licence and administrative fees levied by forest administrations, permit and licence fees for recreation and other forest related activities.
Public expenditure on forestry	All government expenditure on forest related activities.

17.2 National data

17.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	N/A	557.84	669.5
Public expenditure on forestry	N/A	N/A	N/A
	2000	2005	2010
Name of Local Currency	N/A	Namibian Dollars (NAD)	Namibian Dollars (NAD)

17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	No comprehensive information is available for this table. It could be noted that the forest revenue has been estimated and the values were used for reporting for year 2010.
Public expenditure on forestry	N/A
Other general comments	N/A

Other general comments

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18. Who owns and manages the forests and how has this changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

18.1 Categories and definitions

Category	Definition
Public ownership	Forest owned by the State or administrative units of the public administration or by institutions or corporations owned by the public administration.
...of which owned by the state at national scale (<i>sub-category</i>)	Forest owned by the State at the national scale or administrative units of the public administration or by institutions or corporations owned by the public administration.
...of which owned by the state at the sub-national government scale (<i>sub-category</i>)	Forest owned by the State at the sub-national government scale or administrative units of the public administration or by institutions or corporations owned by the public administration.
Private ownership	Forest owned by individuals, families, communities, private cooperatives corporations and other business entities, private, religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.
...of which individuals (<i>sub-category</i>)	Forest owned by individuals and families.
...of which private business entities and institutions (<i>sub-category</i>)	Forest owned by private corporations cooperatives companies and other business entities as well as private nonprofit organizations such as NGOs nature conservation associations, and private religious and educational institutions etc.
...of which local tribal and indigenous communities (<i>sub-category</i>)	Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area or forest owned by communities of indigenous or tribal people The community members are coowners that share exclusive rights and duties and benefits contribute to the community development.
Unknown ownership	Forest area where ownership is unknown includes areas where ownership is unclear or disputed.
Categories related to management rights of public forests	Definition
Public Administration	The Public Administration (or institutions or corporations owned by the Public Administration) retains management rights and responsibilities within the limits specified by the legislation.
Individuals households	Forest management rights and responsibilities are transferred from the Public Administration to individuals or households through long-term leases or management agreements.
Private companies	Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities private cooperatives, private nonprofit institutions and associations, etc., through long-term leases or management agreements.
Communities	Forest management rights and responsibilities are transferred from the Public Administration to local communities (including indigenous and tribal communities) through long-term leases or management agreements.
Other form of management rights	Forests for which the transfer of management rights does not belong to any of the categories mentioned above.

18.2 National data

18.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

18.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

18.2.3 Original data

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18.3 Analysis and processing of national data

18.3.1 Adjustment

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18.3.2 Estimation and forecasting

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18.3.3 Reclassification

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18.4 Data

Table 18a

Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010

CFRQ	Public ownership	N/A	N/A	N/A	N/A
CFRQ	... of which owned by the state at national scale	N/A	N/A	N/A	N/A
CFRQ	... of which owned by the state at the sub-national government scale	N/A	N/A	N/A	N/A
CFRQ	Private ownership	N/A	N/A	N/A	N/A
CFRQ	... of which owned by individuals	N/A	N/A	N/A	N/A
CFRQ	... of which owned by private business entities and institutions	N/A	N/A	N/A	N/A
CFRQ	... of which owned by local, tribal and indigenous communities	N/A	N/A	N/A	N/A
CFRQ	Unknown ownership	N/A	N/A	N/A	N/A
TOTAL		.00	.00	.00	.00

Tiers

Category	Tier for status	Tier for reported trend
Public ownership	N/A	N/A
Private ownership	N/A	N/A
Unknown ownership	N/A	N/A

Tier criteria

Category	Tier for status	Tier for reported trend
Ownership	Tier 3: National forestry statistics registers of land titles or maps on land ownership or all forest area under one ownership category that is five years old or less. Tier 2: National forestry statistics registers of land titles or maps on land ownership or questionnaires that are more than five years old. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010

Public Administration	N/A	N/A	N/A	N/A
Individuals	N/A	N/A	N/A	N/A
Private companies	N/A	N/A	N/A	N/A
Communities	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A
TOTAL	.00	.00	.00	.00

Category	Tier for reported trend	Tier for status
Public Administration	N/A	N/A
Individuals	N/A	N/A
Private companies	N/A	N/A
Communities	N/A	N/A
Other	N/A	N/A

18.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Public ownership	N/A	N/A
Private ownership	N/A	N/A
Unknown ownership	N/A	N/A
Management rights	N/A	N/A

Other general comments to the table
N/A

19. How many people are directly employed in forestry?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

19.1 Categories and definitions

Category	Definition
Full-time equivalents (FTE)	A measurement equal to one person working full-time during a specified reference period.
Employment in forestry	Employment in activities related to production of goods derived from forests. This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

19.2 National data

19.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Personnel office records	N/A	1990-2010	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

19.2.2 Classification and definitions



National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

19.2.3 Original data

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19.3 Data

Table 19

Category		Employment (000 years FTE)			
		1990	2000	2005	2010
	Employment in forestry	0.38	0.49	0.5	0.52
	... of which female	0.038	0.074	0.15	0.234

19.4 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	N/A	Data includes people who are directly employed by the Directorate of Forestry

Other general comments to the table
N/A

20. What is the contribution of forestry to Gross Domestic Product (GDP)?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

20.1 Categories and definitions

Category	Definition
Gross value added from forestry (at basic prices)	This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

20.2 Data

Table 20 (Pre-filled data from UNdata/EUROSTAT)

Category	Million	Currency	Year for latest available information
Gross value added from forestry (at basic prices)	N/A	NAD	N/A

20.3 Comments

Category	Comments
Gross value added from forestry (at basic prices)	The actual figure of the contribution of Forestry to GDP was not available at the time of preparing this report

Other general comments

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21. What is forest area likely to be in the future

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

21.1 Categories and definitions

Category	Definition
Government target/aspiration for forest area	Government target/aspiration for forest area for a specific year.
Forests earmarked for conversion	Forest area that is allocated/classified or scheduled to be converted into non-forest uses.

21.2 National data

21.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

21.3 Data

Table 21a

Category	Forest area (000 ha)	
	2020	2030
Government target/aspiration for forest area	N/A	N/A

Table 21b

Category	Forest area (000 ha)
	2013
Forests earmarked for conversion	N/A

21.4 Comments

Category	Comments
Government target/aspiration for forest area	N/A

Forests earmarked for conversion	N/A
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Other general comments

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