

GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

Ethiopia

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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Introductory Text

Place an introductory text on the content of this report

Ethiopia located in the Horn of Africa covers about 1.01 Million Sq. km area. The land use/land cover of the country shows 46.4% to have been covered by vegetation, 0.7% by water body and the rest by other land uses (WBISSPP, 2004). It is a country of about 85 million population. Nearly 83% of the country's population resides in rural area depending on economic activities that are directly linked to natural resources. Agriculture (mixed crop and livestock) and forest based activities is the main livelihoods portfolio.

Ethiopia has diverse vegetation resources that range from lowland scrubs to tropical rainforest. The forest resources comprise both natural and planted forests. The natural forests are also of different types: moist and dry tropical Afromontane forests, woodlands and shrublands. Planted forests comprise industrial, pre-urban energy plantation and small scale woodlots.

There is significant deforestation in Ethiopia. The main driver is small scale farm land expansion and unsustainable fuel wood consumption (CRGE, 2011). However, the government of Ethiopia is making utmost effort to reverse deforestation on one hand while rehabilitating degraded forest lands on the other. Among the measures taken the most prominent include: adoption and up-scaling of participatory forest management approach to most natural forest blocks, watershed based afforestation, area exclosures, institutional reform by establishing a new Ministry of Environment and Forests, and legal framework improvement both at Federal and Regional scale. Ethiopia is also keen in implementing REDD+ to generate incentives for improved forest management. These all changes are improving and expected to improve forest management outcomes in Ethiopia.

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
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1	Woody Biomass Inventory and Strategic Planning Project (WBISPP), Ministry of Agriculture and Rural Development, May 2004	Land use/ Land cover, Growing stock	Land sat TM images: 1986-1989 and 1995	Woody Biomass Inventory using remote sensing (satellite imagery). Satellite images were used to derive estimates for 2000 and 2005. Several assumptions were made to arrive at estimates for 2005.
2	Million Bekele (2010) (African Forest Forum)	Plantation forests of Ethiopia	2007 and 2008	Based on regional assessment and literature review
3	Several local level scholarly studies	Deforestation rates	1990s, 2000s	MSc and PhD studies based on satellite imageries and GIS analyses
4	N/A	N/A	N/A	N/A

1.2.2 Classification and definitions

National class	Definition
Forest	Land with relatively continuous cover of trees, which are evergreen or semi-deciduous, only being leafless for a short period, and then not simultaneously for all species. The canopy should preferably have more than one story.
High Wood Land	5 m and crown tree cover > 20%. It is found in East and West Wellega , Jima & Illubabor zone of Oromia region, in zone 2 of Gmbella Region, all of Benshangule -Gumuz Region, and west Gojam, Awi and north Gonder zone of Amhara region. In other areas, it is woodland lying above 1250m above sea level. This class does not include shrubs and bushes." /> Combretum-Terminalia Woodland with trees >5 m and crown tree cover > 20%. It is found in East and West Wellega , Jima & Illubabor zone of Oromia region, in zone 2 of Gmbella Region, all of Benshangule -Gumuz Region, and west Gojam, Awi and north Gonder zone of Amhara region. In other areas, it is woodland lying above 1250m above sea level. This class does not include shrubs and bushes.
Plantation	5 m and crown density > 20% & thus is included in " /> Mainly Eucalyptus, Cupressus and Pinus plantation with >5 m and crown density > 20% & thus is included in
Low woodland	<5m in height and with crown cover >20%" /> All other woodlands and shrubland <5m in height and with crown cover >20%
Other land	Other land is land area that is not categorized as forest. This includes agricultural land, settlements, etc

1.2.3 Original data

Estimate for 2015

The forest statistics for Ethiopia reported for 2005 and 2010 are also extracted from this basic data. The current estimate for 2015 is also based on this and additional information obtained from the sources indicated in section 1.1.1. The estimate for 2015 is summarized in table 1.2.3b.

Table 1.2.3.b Estimated figures for 2015 as projected by the WBISPP report

	Area in hectares						
Ethiopia	Forest	“High” Wood land	Plantation	Low Woodland + Shrubland	Other land	Water	Total
ETHIOPIA							

Note: Low woodland and shrub land are included in other land category in the WBISPP report. However, for the purpose of FRA report these two categories are separated.

Summary of 2000 and 2005 data as taken from the WBISPP report

National Categories	Area in hectares			
	2000	2005	2010	2015
Forest	3651935	3337988	12 295 847	11527356
High woodland area	10049079	9632616	9030577.5	8466166
Plantations	509422	509422	509422	972000
Low woodland + Shrubland	46297530	46297530	44 649 764	40631285.24
Other land	53169093	53899503	52 685,000	52685000
Inland Water	828277	828277	799,000	828277
Total	114505336	114505336	119969610	115110084

Forest expansion, reforestation

According to data/information collected from various regions areas of planted forests have increased compared to the previous decades. Total forest plantation in Ethiopia is estimated at 972,000 ha currently (Table....). The bulk of these plantation forests are non-industrial type and are small-scale private plantations and woodlots. The wood from these plantations are supplying the largest wood product used in the construction sector (as poles and posts) and share major supply in the national biomass fuel use today.

Table..... . Extent of forest plantations in Ethiopia (Source: Bekele, 2011)

Regional State	Industrial plantation	Non-industrial small scale private plantation	Per-urban energy plantation	Total
Oromia	78 800	27 800	26 700	133300
Amhara	44 600	639 400		684000
SNNPRS	27 300	64 000		91300
Tigray	39 700	23 700		63400
Total	190 400	754 900	26 700	972000

Forest area

The data from WBISSP (2004) project shown in table 1.2.3a provides a comprehensive national forest statistics by regional state. According to this study the total high forest cover of the country is 3.65 million ha, high woodland which also falls within forest class according to FAO's definition is estimated at about 10 million ha. Together both types provide the forest estimate of 13701014 ha for early 2000s.

Table 1.2.3a Estimates for 2000 as obtained from the WBISPP report

Regions (1)	Forest	“High” Wood land	Plantation	Low Woodland + Shrubland	Other land	Water	Total
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	ha	ha	ha	ha	ha	ha	ha
Oromiya	2205619	5257683	62770	9806112	18422447	260500	36015130
SNNPR	740271	560000	237198	1349431	7667390	152860	10707150
Gambella	491805	899578	0	422042	1371684	0	3185109
Dire Dawa	0	0	0	36635	92163	0	128798
Harari	216	0	0	7497	24839	0	32552
Amhara	92744	841896	199496	7863448	6456317	310379	15764280
Tigray	9332	0	649	2135637	2788537	6212	4940367
Beneshangul	68495	2471761	0	1416368	955145	15216	4926985
Afar	39197	0	0	3169871	6329065	82142	9620275
Somali	4257	18160	1410	20090489	9007056	968	29122340
Addis Ababa	0	-	7900	0	54450	0	62350
ETHIOPIA	3651935	10049079	509422	46297530	53169093	828277	114505336

Note: Low woodland and shrub land are included in the other land category in the WBISPP report. However, for the purpose of FRA report these two categories are separated.

1.3 Analysis and processing of national data

1.3.1 Adjustment

1.3.2 Estimation and forecasting

Forest area

The areas of forest and OWL (in 2015) have been estimated using a revised deforestation rate obtained from various studies and synthesized together into a national average using expert guess. Accordingly the deforestation rate since 2010 for the forest is estimated as 1.25% per year and for other woodlands 1.8% per year.

Table. Estimate of forest cover for 2015.

FRA Category	Area in hectares				
	1990	2000	2005	2010	2015
Forests*	15 113 503	13 704 675	13 000 261	12 295 847	12499356
OWL	44 649 764	44 649 764	44 649 764	44 649 764	40631285

* The estimate represents FRA categories. Therefore forests include forests, high woodland area and plantations.

1.3.3 Reclassification

Forest area

Reclassification is done before estimation and forecasting.

Reclassification	Forest	OWL
Forest	100%	
High woodland area	100%	
Plantations	100%	
Low woodland + Shrubland		100%








1.4 Data

Table 1a

Categories	Area (000 hectares)
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		1990	2000	2005	2010	2015
	Forest	15114	13705	13000	12296	12499
	Other wooded land	44650	44650	44650	44650	40631
	Other land	49867	51276	51981	52685	56501
	... of which with tree cover	N/A	N/A	N/A	N/A	N/A
	Inland water bodies	799	799	799	799	799
	TOTAL	110430.00	110430.00	110430.00	110430.00	110430.00

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	6.7	N/A	N/A	N/A	N/A	N/A
	... of which natural expansion of forest	N/A	N/A	N/A	3	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	3.3	N/A	N/A	N/A	N/A	N/A
	... of which artificial	N/A	N/A	3.3	N/A	N/A	N/A	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Forest	Tier 2	Tier 2
Other wooded land	Tier 1	Tier 1
Forest expansion	Tier 2	Tier 2
Deforestation	N/A	N/A
Reforestation	Tier 1	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
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<ul style="list-style-type: none"> • Forest • Other wooded land • Afforestation • Reforestation • Natural expansion of forest • Deforestation 	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 Tier 2 : Data sources: Full cover mapping / remote sensing or old NFI (more than 10 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
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1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends
Forest	N/A	No new information is available on the situation of the forest area. It is believed that the trend of deforestation remains the same as it was between 2000 and 2005.
Other wooded land	N/A	N/A
Other land	N/A	N/A
Other land with tree cover	N/A	N/A
Inland water bodies	Figure from FAOStat has not been used in that case for the table T1. Based on the results of WBISPP, it is estimated that inland water area is equal to 798 798 ha (after calibration).	N/A
Forest expansion	Expert estimate based on number of seedlings planted and assumed survival rate.	N/A
Deforestation	N/A	N/A
Reforestation	Expert estimate based on number of seedlings planted and assumed survival rate.	N/A

Other general comments to the table

Note to 1.1 National Data The current forest covers of Ethiopia and its trend is summarized in Table 1. Although there have been several fragmented, sub-regional and local level forest resource assessments, a national scale comprehensive inventory has been done only once. This national scale study, called, woody biomass inventory and strategic planning project, conducted between 1988-2004 assessed the whole country and classified the land use/land cover classes, growing stock and trends (Table 2). This inventory is the main source of national scale forest statistic today. In addition, African Forest Forum has commissioned a national scale plantation forest resources assessment study which provided updated information on planted forest resources of the country. These are combined with expert estimates to arrive at the forest statistics of the country. Note: Under the sustainable land management project, sponsored by the World Bank, some field and remote sensing surveys are planned.

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 outside 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	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

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	14623	13214	12509	11785	11527
	... 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	491	491	491	511	972
	... of which of introduced species	N/A	N/A	N/A	N/A	N/A

TOTAL	15114.00	13705.00	13000.00	12296.00	12499.00
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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	N/A	N/A	N/A	N/A	N/A

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) 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>

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	N/A	N/A

Other naturally regenerating forest	N/A	N/A
Planted forest	N/A	N/A
Mangroves	N/A	N/A

Other general comments to the table

As indicated in FRA 2005, there are no national data available. However, in almost all forests area there is human intervention. In this context, forests are considered as naturally regenerated forest.

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	WBISPP, 2004	Land use/ Land cover	1986-1989 and 1995	Woody Biomass Inventory and Strategic Planning Project using remote sensing (satellite imagery)
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

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

As no growing stock data are available, growing stock has been estimated from the following above-ground biomass figures:

FRA 2005 Categories	1990	2000	2005	2010	2015
Above-ground biomass Forest (1000 tonnes)	484216	425639	396351	367062	358735
Above-ground biomass Other wooded land (1000 tonnes)	364967	364967	364967	364967	332120

Biomass stock

National classes	Stem biomass ^{*)}	Calibrated area from T1 (hectares)		
	(tons/ha)	2000	2005	2015
High woodland	3.57	9691424	9289784	8560789

Forest	35.57	3521960	3219186	2966568
Plantations	**)	491291	491291	972000
Total area - Forest		13704675	13000261	12499357
Shrub + low wooded land	1.34	44649764	44649764	40631285
Total area - Other wooded land		44649764	44649764	40631285

Notes:

*) The data source is not clear, but it is assumed that the given values refer to stem biomass;

***) No biomass data are given for plantations, it is assumed to be the same as for Forest.

The following conversion factors have been used for calculating biomass for forests:

Biomass expansion factor	2.4	(average for temperate broadleaved and tropical broadleaved)
Root/shoot ratio	0.27	(tropical/subtropical dry forest)

The following conversion factors have been used for calculating biomass for shrubs and other woodlands:

Biomass expansion factor	6.1	(average for temperate broadleaved and tropical broadleaved)
Root/shoot ratio	0.48	Tropical Shrubland

Carbon stock

Data from biomass stock

3.3 Analysis and processing of national data

3.3.1 Adjustment

3.3.2 Estimation and forecasting

Growing stock

Growing stock has been estimated from the above-ground biomass figures by using the following formula and applying default conversion factors from IPCC GPG (2003).

$$GS = AGB / BEF / WD / 1000$$

GS = Growing stock (million m³)

AGB = Above-ground biomass (1000 tons)

BEF = Biomass expansion factor = 2.4 for Forest, and 6.1 for Other Wooded Land

WD = Wood density = 0.58.

Furthermore, growing stock of commercial species is assumed to be 25% of the total growing stock on forest land and zero on Other Wooded Land

Biomass stock

The biomass figures per hectare are multiplied with respective areas.

	Above-ground biomass (1000 tons)		
	2000	2005	2015
High woodland	83036	79595	63872
Forest	300663	274815	251476

Plantations	41941	41941	43387
Total Forest	425639	396351	358735
Shrub + low wooded land	364967	364967	332120
Total Other wooded land	364967	364967	332120

Then, estimated biomasses of forest and OWL, 1990 and 2000, have been extrapolated.

	Above-ground biomass (1000 tons)				
	1990	2000	2005	2010	2015
Total Forest	484216	425639	396351	367062	358735
Total Other wooded land	364967	364967	364967	364967	332120

Applying the conversion factors to the aboveground biomass gives the Below-ground biomass

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 2.1 (tropical), and

- Soil carbon has been estimated, based on the factor of 65 (Tropical moist climate with a majority of HAC soils).

The biomass/ hectare values are then applied to the forest and other wooded land areas values in table T1 to get the biomass for the reporting years.

Year	1990	2000	2005	2010	2015
Total Forest (1000 ha)	15 114	13 705	13 000	12 296	12499
Carbon in the litter (1000 t.)	31 739	28 781	27 300	25 822	26247.9
Soil carbon (1000 t.)	982 410	890 825	845 000	799 240	812435

Year	1990	2000	2005	2010	2015
Total OWL area (1000 ha)	44 650	44 650	44 650	44 650	40631
Carbon in the litter (1000 t.)	93 765	93 765	93 765	93 765	85325.1
Soil carbon (1000 t.)	2 902 250	2 902 250	2 902 250	2 902 250	2641015

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	347.9	305.8	284.7	263.7	251	103.2	103.2	103.2	103.2	103.2
 ... 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)	N/A	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
CFRQ	Net annual increment	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which coniferous	N/A	N/A	N/A	N/A	N/A
CFRQ	... 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
CFRQ	Above ground biomass	484	426	396	367	N/A	365	365	365	365	N/A
CFRQ	Below ground biomass	131	115	107	99	N/A	175	175	175	175	N/A
CFRQ	Dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		615.00	541.00	503.00	466.00	.00	540.00	540.00	540.00	540.00	.00

Table 3e

Category		Carbon (Million metric tonnes)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
CFRQ	Carbon in above ground biomass	227	200	186	172	N/A	172	172	172	172	N/A
CFRQ	Carbon in below ground biomass	62	54	50	47	N/A	82	82	82	82	N/A
CFRQ	<i>Subtotal Living biomass</i>	289	254	236	219	N/A	254	254	254	254	N/A
CFRQ	Carbon in dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CFRQ	Carbon in litter	32	29	27	26	N/A	94	94	94	94	N/A

	<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	982	890	845	799	N/A	2902	2902	2902	2902	N/A
TOTAL		1303.00	1173.00	1108.00	1044.00	.00	3250.00	3250.00	3250.00	3250.00	.00

Tiers

Variable/category	Tier for status	Tier for trend
Total growing stock	Tier 1	Tier 1
Net annual increment	N/A	N/A
Above ground biomass	Tier 1	Tier 1
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 and litter	N/A	N/A
Soil carbon	N/A	N/A

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
Total growing stock	Estimated from available data on above-ground biomass using IPCC-GPG default factors.	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	Ethiopian Forestry Action Programme (EFAP) 1994 Ministry of Natural Resources & Environmental Protection	Report	1992	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

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

There are no protected forests (gazetted/demarcated) in Ethiopia, as all forests are considered multi-purpose.

Based on the WBISPP report, the plantation area in 2000 and 2005 remains stable and was estimated at 491 000 ha after adjustment (see question 1).

It is assumed that plantation area should be considered as production forests.

For 2010, it is assumed that the plantation area will be increased by about 20 000 ha. Presently, important efforts have been conducted.

4.3 Analysis and processing of national data

4.3.1 Adjustment

4.3.2 Estimation and forecasting

4.3.3 Reclassification

4.4 Data

Table 4a



Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	491	491	491	511	972
	Multiple use forest	14623	13214	12509	11785	11527

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	104209.3	101274.3
1991	0	0
1992	0	0
1993	78482.1	76337.07
1994	80769.4	78550.4
1995	82527.5	80231.66
1996	83650.6	81220.59
1997	85504.5	83106.69
1998	86531.9	84134.6
1999	88239.5	85785.17
2000	89930.1	87471.09
2001	91282.1	88824.54
2002	92661.3	90201.75
2003	94533.4	91603.19
2004	95957.3	93029.34
2005	97408.7	94480.67

2006	98631.1	95703.06
2007	100059.1	97131.1
2008	101417.4	98489.4
2009	102805.3	99870.32
2010	104209.3	101274.3
2011	104209.3	101274.3

Tiers

Category	Tier for status	Tier for reported trend
Production forest	N/A	N/A
Multiple use forest	Tier 1	Tier 1

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	Since there had been no recent study on production forestry, it will be fair to take the figure previously reported.	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	Ethiopian Forestry Action Programme (EFAP) 1994 Ministry of Natural Resources & Environmental Protection	Report	1992	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

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

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6.3 Analysis and processing of national data

6.3.1 Adjustment

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6.3.2 Estimation and forecasting



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6.3.3 Reclassification

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6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Conservation of biodiversity	0	0	0	0	0
	Forest area within protected areas	N/A	N/A	N/A	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	Tier 1	Tier 1
Forest area within protected areas	N/A	N/A

Tier criteria

Category	Tier for status	Tier for reported trend
<ul style="list-style-type: none"> Conservation of biodiversity Forests within protected areas 	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	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

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	No data available	N/A
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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

<p>No data available for this table.</p> <p>There are certain woodland areas in Eastern Ethiopia where "<i>Prosopis juliflora</i>" is causing some socio-cultural damage. But the exact extent of area affected by this invasive woody species and the magnitude of damage is not known exactly. That needs its own detailed study.</p> <p>.</p>
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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

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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. <i>Prosopis juliflora</i>	N/A	N/A
2. <i>Acacia drapanolobium</i>	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
Total	N/A	N/A

Tiers

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

Tier Criteria

Category	Tier for status	Tier for reported trend
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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
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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	#
	Total land area burned	7015.6	N/A	7113.85	N/A	8147.96	N/A	5987.81	N/A	7052.65	N/A
	... of which forest area burned	0.23	N/A	N/A	N/A	N/A	N/A	0.77	N/A	N/A	N/A
Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	6009.95	N/A	6255.94	N/A	5197.89	N/A	4948.7	N/A	5751.05	N/A
	... of which forest area burned	0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

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
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
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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	N/A

Tiers

Category	Tier for reported trend
Reduction in canopy cover	N/A

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				
... of which, in <u>publicly</u> owned forests				
... of which, in <u>privately</u> owned forests				
Legislation and regulations supporting sustainable forest management				
... of which, in <u>publicly</u> owned forests				
... of which, in <u>privately</u> owned forests				

10.4 Comments

Variable / category	Comments related to data definitions etc
Policies supporting sustainable forest management	N/A
Legislation and regulations supporting sustainable forest management	N/A

Other general comments

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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?

11.3 Comments

Category	Comments related to data definitions etc
National stakeholder platform	N/A

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	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

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

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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	N/A
	... of which permanent forest estate	N/A

Tiers

Category	Tier for status
Forest area intended to be in permanent forest land use	N/A
Permanent forest estate	N/A

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	No data available

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						
Other field assessments	N/A	N/A						
Updates to other sources	N/A	N/A						
Expert estimate	N/A	N/A						

Table 13b

Type of forest reporting used at national scale	Check boxes that apply
1 Criteria and Indicators reporting	
2 Periodic national state of the forest report	
3 Other (please document)	
4 None	

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

--

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	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

14.3 Data

Table 14a

Forest plan type	Forest area 2010 (000 ha)
Forest area with management plan	N/A
... 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	

2 High conservation value forest delineation	
3 Social considerations community involvement	

Table 14c

Percent of area under forest management plan that is monitored annually	N/A
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Tiers

Category	Tier for status
Forest area with management plan	N/A
Percent of area under forest management plan that is monitored annually	N/A

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	No data available
N/A	N/A
N/A	N/A

Other general comments

--

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	
2. Operations phase	
3. Review of operations	

Tiers

Category	Tier for status
Type of stakeholder inputs	N/A

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	0	0	0	0	0
	PEFC	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	0	0	0	0	0	0	
	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
	N/A	0	0	0	0	0	0	0
	N/A	0	0	0	0	0	0	0
	N/A	0	0	0	0	0	0	0

		2007	2008	2009	2010	2011	2012	
		0	0	0	0	0	0	
		0	0	0	0	0	0	
		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	N/A
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	N/A	N/A
Public expenditure on forestry	N/A	N/A	N/A
	2000	2005	2010
Name of Local Currency	Birr (ETB)	Birr (ETB)	N/A

17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	No national data is available for this question. Since public revenue collection is done at various levels including regions, it is very difficult to get comprehensive data
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

--

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	15114	13705	13000	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	0	0	0	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	0	0	0	N/A
CFRQ	Unknown ownership	0	0	0	N/A
TOTAL		15114.00	13705.00	13000.00	.00

Tiers

Category	Tier for status	Tier for reported trend
Public ownership	Tier 1	Tier 1
Private ownership	Tier 1	Tier 1
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	15114	13705	13000	N/A
Individuals	0	0	0	N/A
Private companies	0	0	0	N/A
Communities	0	0	0	N/A
Other	0	0	0	N/A
TOTAL	15114.00	13705.00	13000.00	.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	Community ownership on forest is not clearly assessed. Therefore it is assumed that all forests are public ones.	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	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

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	N/A	N/A	N/A	N/A
	... of which female	N/A	N/A	N/A	N/A

19.4 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	No comprehensive data is available for this question.	N/A

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)	14539.21	Ethiopian birr	2011

20.3 Comments

Category	Comments
N/A	N/A

Other general comments

--

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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