



Food and Agriculture
Organization of the
United Nations

Global Forest Resources Assessment 2020

Report

Belize

Rome, 2020



FAO has been monitoring the world's forests at 5 to 10 year intervals since 1946. The Global Forest Resources Assessments (FRA) are now produced every five years in an attempt to provide a consistent approach to describing the world's forests and how they are changing. The FRA is a country-driven process and the assessments are based on reports prepared by officially nominated National Correspondents. If a report is not available, the FRA Secretariat prepares a desk study using earlier reports, existing information and/or remote sensing based analysis.

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Introduction

Report preparation and contact persons

The present report was prepared by the following person(s)

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Introductory text

Place an introductory text on the content of this report

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National Data

Data sources + type of data source eg NFI, etc

Cherrington, Emil & Ek, Edgar & Cho, Percival & F Howell, Burgess & Hernández Sandoval, Betzy & Anderson, Eric & Flores, Africa & C Garcia, Bessy & Sempris, Emilio & Irwin, D. (2013). Data - Belize forest dynamics 1980-2010.

Emil A. Cherrington, Percival P. Cho, Ivanna Waight, Tanya Y. Santos4 Alex E. Escalante, Jorge Nabet and Lewis Usher (2012). Forest Cover and Deforestation in Belize, 2010-2012.

Meerman, J. and Sabido, W. 2001. Central American Ecosystems. Updated 2004 (<http://biological-diversity.info/Ecosystems.htm>)

Collect Earth Assessment of Land cover and land use. Unpublished.

National classification and definitions

-

Original data

1. Original data on forest area

Cherrington et al, 2012. Forest Cover & Deforestation in Belize, 2010-2012:			
Year	Forest cover	change	change / yr.
	ha.	ha.	ha.
1980	1,648,783	-	-
1989	1,616,027	32,756	3,640
1994	1,536,025	80,002	17,778
2000	1,459,301	76,724	12,787
2004	1,416,530	42,771	10,967
2010	1,391,391	25,139	4,190
2012	1,366,300	25,092	11,671

Collect Earth Assessment of Land Use, 2018			
Year	Forest cover	change	change / yr.
	ha.	ha.	ha.
2018	1,299,365	66,935	11,156

2. Other wooded land

Meerman, J. and W. Sabido, 2001. Central American Ecosystems: Belize.
Updated 2004: http://biological-diversity.info/Ecosystems.htm

Shrubland	
year	hectares
1997	84411
84411	96950

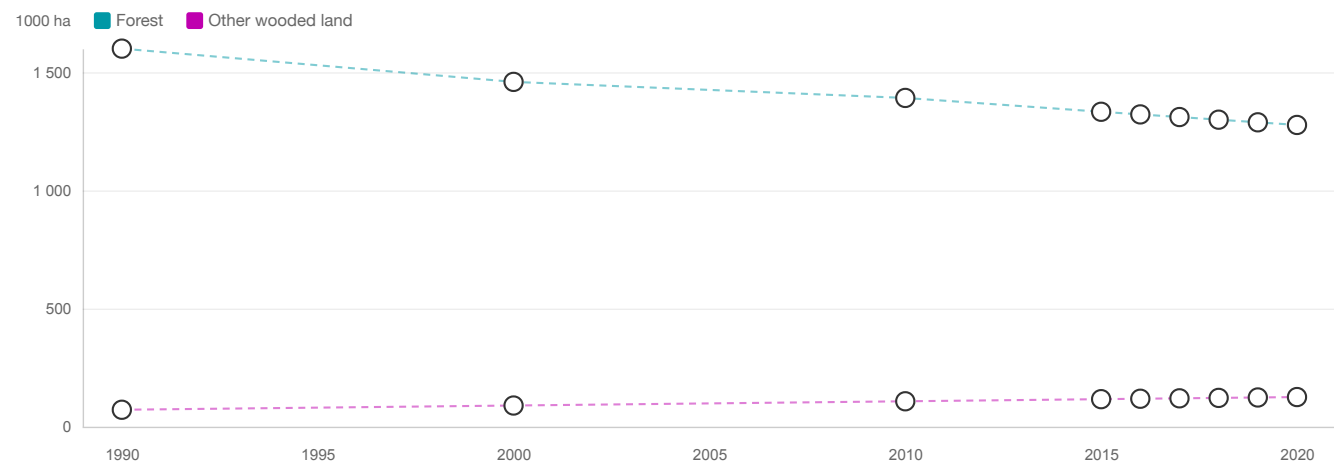
Analysis and processing of national data

Estimation and forecasting

Estimation and forecasting was done using linear intrapolation and extrapolation.

Reclassification into FRA 2020 categories

-



FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	1 600.03	1 459.30	1 391.39	1 332.83	1 321.68	1 310.52	1 299.37	1 288.21	1 277.05
Other wooded land (a)	71.87	89.78	107.70	116.65	118.45	120.24	122.03	123.82	125.61
Other land (c-a-b)	609.10	731.92	781.91	831.52	840.87	850.24	859.60	868.97	878.34
Total land area (c)	2 281.00	2 281.00	2 281.00	2 281.00	2 281.00	2 281.00	2 281.00	2 281.00	2 281.00

The FAOSTAT land area figure for the year 2015 is used for all reference years

Climatic domain	% of forest area 2015	Override value
Boreal	0.00	
Temperate	0.00	
Sub-tropical	0.00	
Tropical	100.00	

Comments

1b Forest characteristics

National Data

Data sources + type of data source eg NFI, etc

Meerman, J. and W. Sabido, 2001. Central American Ecosystems: Belize.
Updated 2004: http://biological-diversity.info/Ecosystems.htm

National classification and definitions

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Original data

Plantations	
year	hectares
1997	2135
2004	2212
2018	1005

The 2018 data are from the Collect Earth Assessment, but being a sample-based assessment and plantations are rare in Belize, the figure has a high degree of uncertainty and was therefore not used for building the time series.

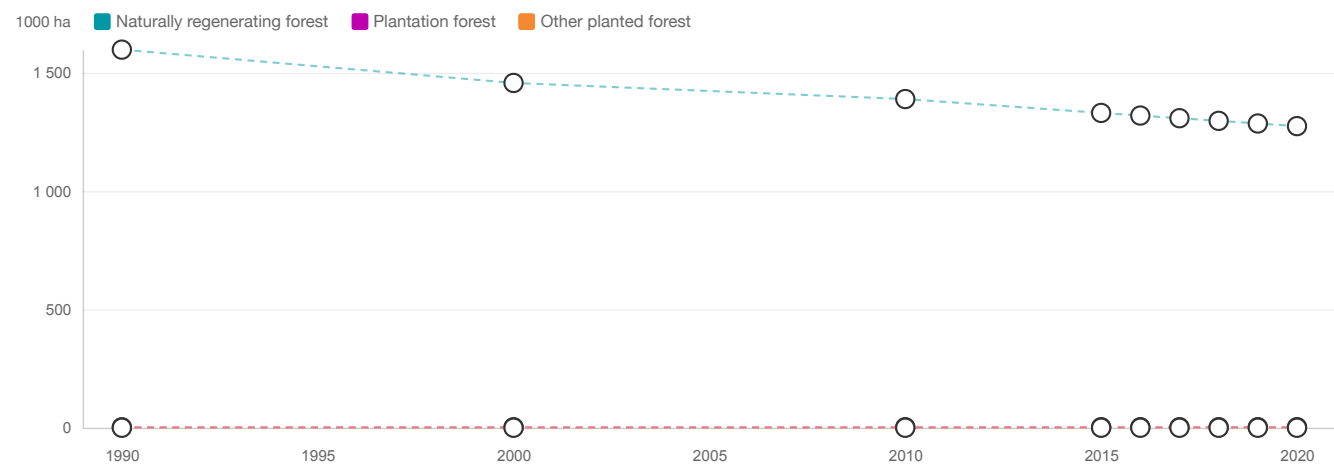
Analysis and processing of national data

Estimation and forecasting

Estimation and forecasting was done using linear intrapolation and extrapolation.

Reclassification into FRA 2020 categories

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FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)	1 597.97	1 457.13	1 389.11	1 330.50	1 319.33	1 308.17	1 297.00	1 285.83	1 274.67
Planted forest (b)	2.06	2.17	2.28	2.33	2.34	2.36	2.37	2.38	2.39
Plantation forest	2.06	2.17	2.28	2.33	2.34	2.36	2.37	2.38	2.39
...of which introduced species									
Other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (a+b)	1 600.03	1 459.30	1 391.39	1 332.83	1 321.67	1 310.53	1 299.37	1 288.21	1 277.06
Total forest area	1 600.03	1 459.30	1 391.39	1 332.83	1 321.68	1 310.52	1 299.37	1 288.21	1 277.05

Comments

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

Cherrington et al, 2018. An assessment of changes in mangrove cover across the Belize Barrier Reef Reserve System World Heritage Site: 1996-2017. Audubon Society 2018, Technical Report

National classification and definitions

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Original data

Cherrington et al, table 8, provides the following data:

Period		Area (ha.)	
from	to	Cleared	Remaining
14-Nov-80	27-Dec-89	687	75,563
27-Dec-89	17-Mar-96	602	74,961
17-Mar-96	28-Mar-00	419	74,542
28-Mar-00	12-Feb-04	625	73,917
12-Feb-04	28-Feb-10	1,249	72,667
28-Feb-10	23-Feb-17	499	72,169
14-Nov-80	23-Feb-17	4,081	72,169

Analysis and processing of national data

Estimation and forecasting

The original data were assigned a data year as follows:

1990	1996	2000	2004	2010	2017
75,563	74,961	74,542	73,917	72,667	72,169

and data for 2015 and 2020 were estimated using linear interpolation/extrapolation of the 2010 and 2017 data points.

Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest					
Temporarily unstocked and/or recently regenerated					
Bamboos					
Mangroves	75.56	74.54	72.67	72.31	71.96
Rubber wood					

Comments

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)	0.00	0.00	0.00	0.00
...of which afforestation				
...of which natural expansion				
Deforestation (b)	14.07	6.79	11.71	11.16
Forest area net change (a-b)	-14.07	-6.79	-11.71	-11.16

Comments

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

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Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Reforestation				

Comments

1f Other land with tree cover

National Data

Data sources + type of data source eg NFI, etc

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National classification and definitions

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Original data

-

Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)					
Tree orchards (b)					
Agroforestry (c)					
Trees in urban settings (d)					
Other (specify in comments) (e)					
Total (a+b+c+d+e)	–	–	–	–	–
Other land area	609.10	731.92	781.91	831.52	878.34

Comments

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

CCAD-PROARCA/CAPASUSAID, 1998. Estimación de la cantidad de carbono almacenado y captado (masa aérea) en los bosques de la República de Belice.

National classification and definitions

-

Original data

Above-ground biomass	211	t/ha
BCEF (Tropical forest)	1.3	From IPCC guidelines
Growing stock	162.3	m3/ha (estimated)

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	162.30	162.30	162.30	162.30	162.30	162.30	162.30	162.30	162.30
Planted forest	162.30	162.30	162.30	162.30	162.30	162.30	162.30	162.30	162.30
...of which plantation forest	162.30	162.30	162.30	162.30	162.30	162.30	162.30	162.30	162.30
...of which other planted forest									
Forest	162.30	162.30	162.30	162.30	162.30	162.30	162.30	162.30	162.30
Other wooded land									

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	259.35	236.49	225.45	215.94	214.13	212.32	210.50	208.69	206.88
Planted forest	0.33	0.35	0.37	0.38	0.38	0.38	0.38	0.39	0.39
...of which plantation forest	0.33	0.35	0.37	0.38	0.38	0.38	0.38	0.39	0.39
...of which other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forest	259.68	236.84	225.82	216.32	214.51	212.70	210.89	209.08	207.27
Other wooded land									

Comments

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

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Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

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FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#1 Ranked in terms of volume							
#2 Ranked in terms of volume							
#3 Ranked in terms of volume							
#4 Ranked in terms of volume							
#5 Ranked in terms of volume							
#6 Ranked in terms of volume							
#7 Ranked in terms of volume							
#8 Ranked in terms of volume							
#9 Ranked in terms of volume							
#10 Ranked in terms of volume							
Remaining native tree species							
Total volume of native tree species			–	–	–	–	–
Introduced tree species							
#1 Ranked in terms of volume							
#2 Ranked in terms of volume							
#3 Ranked in terms of volume							
#4 Ranked in terms of volume							
#5 Ranked in terms of volume							
Remaining introduced tree species							
Total volume of introduced tree species			–	–	–	–	–
Total growing stock			–	–	–	–	–

Comments

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

CCAD-PROARCA/CAPASUSAID, 1998. Estimación de la cantidad de carbono almacenado y captado (masa aérea) en los bosques de la República de Belice.

National classification and definitions

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Original data

Above-ground biomass	211	t/ha
Root-shoot ratio	0.24	From IPCC guidelines
Below ground biomass	50.6	t/ha

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

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FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	211.00	211.00	211.00	211.00	211.00	211.00	211.00	211.00	211.00
Below-ground biomass	50.60	50.60	50.60	50.60	50.60	50.60	50.60	50.60	50.60
Dead wood									

Comments

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

CCAD-PROARCA/CAPASUSAID, 1998. Estimación de la cantidad de carbono almacenado y captado (masa aérea) en los bosques de la República de Belice.

National classification and definitions

-

Original data

Above-ground biomass	211	t/ha
Root-shoot ratio	0.24	From IPCC guidelines
Below ground biomass	50.6	t/ha
Carbon fraction	0.47	From IPCC guidelines
Carbon in above-ground biomass	99.2	t/ha
Carbon in below-ground biomass	23.8	t/ha

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	99.20	99.20	99.20	99.20	99.20	99.20	99.20	99.20	99.20
Carbon in below-ground biomass	23.80	23.80	23.80	23.80	23.80	23.80	23.80	23.80	23.80
Carbon in dead wood									
Carbon in litter									
Soil carbon									

Soil depth (cm) used for soil carbon estimates	
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Comments

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

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National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)					
Protection of soil and water (b)					
Conservation of biodiversity (c)					
Social Services (d)					
Multiple use (e)					
Other (specify in comments) (f)					
None/unknown (g)	1 600.03	1 459.30	1 391.39	1 332.83	1 277.05
Total forest area	1 600.03	1 459.30	1 391.39	1 332.83	1 277.05

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production					
Protection of soil and water					
Conservation of biodiversity					
Social Services					
Other (specify in comments)					

Comments

3b Forest area within protected areas and forest area with long-term management plans

National Data

Data sources + type of data source eg NFI, etc

Geospatial tools, FRA platform

National classification and definitions

-

Original data

The geospatial tools in the FRA platform overlays the protected area boundaries as of the WCMC database with the Hansen global tree cover product. The annual estimates are as follows (in hectares):

Year	Total area of protected areas	Forest area in protected areas
2000	972,622	741,685
2001	1,023,703	740,165
2002	1,039,335	752,942
2003	1,045,908	755,126
2004	1,047,059	754,885
2005	1,050,330	757,628
2006	1,050,330	758,037
2007	1,050,330	754,480
2008	1,054,691	757,033
2009	1,054,691	756,297
2010	1,054,948	756,149
2011	1,054,951	753,264
2012	1,058,793	756,185
2013	1,189,070	763,768
2014	1,189,070	763,185
2015	1,189,070	762,598
2016	1,189,070	760,385
2017	1,189,070	757,229

Analysis and processing of national data

Estimation and forecasting

For the period 2018-2020, the 2017 value has been used.

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas		741.69	756.15	762.60	760.39	757.23	757.23	757.23	757.23
Forest area with long-term forest management plan									
...of which in protected areas									

Comments

In recent years there has been encroachment within two particular Forest Reserves (Pine Forest) and consequently the Government has conceded to the re-demarcation of boundaries of these Forest Reserves. The 'de-reservation' however, has not been passed through any legal instrument yet therefore the full area is still considered as protected, even though survey lines have been opened in preparation for parceling and eventually land use change

4 Forest ownership and management rights

4a Forest ownership

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)				
...of which owned by individuals				
...of which owned by private business entities and institutions				
...of which owned by local, tribal and indigenous communities				
Public ownership (b)				
Unknown/other (specify in comments) (c)	–	–	–	–
Total forest area	1 600.03	1 459.30	1 391.39	1 332.83

Comments

4b Holder of management rights of public forests

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)				
Individuals (b)				
Private business entities and institutions (c)				
Local, tribal and indigenous communities (d)				
Unknown/other (specify in comments) (e)	–	–	–	–
Total public ownership	–	–	–	–

Comments

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Insects (a)																		
Diseases (b)																		
Severe weather events (c)																		
Other (specify in comments) (d)																		
Total (a+b+c+d)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total forest area	1 459.30	-	-	-	-	-	-	-	-	-	1 391.39	-	-	-	-	1 332.83	1 321.68	1 310.52

Comments

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total land area affected by fire																		
...of which on forest																		

Comments

5c Degraded forest

Does your country monitor area of degraded forest		
If "yes"	What is the national definition of "Degraded forest"?	
	Describe the monitoring process and results	

Comments

6 Forest policy and legislation

6a Policies, Legislation and national platform for stakeholder participation in forest policy

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Indicate the existence of	Boolean (Yes/No)	
	National	Sub-national
Policies supporting SFM		
Legislations and regulations supporting SFM		
Platform that promotes or allows for stakeholder participation in forest policy development		
Traceability system(s) for wood products		

Comments

6b Area of permanent forest estate

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Forest area (1000 ha)					
	Applicable?	1990	2000	2010	2015	2020
Area of permanent forest estate						

Comments

7 Employment, education and NWFP

7a Employment in forestry and logging

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Full-time equivalents (1000 FTE)											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Employment in forestry and logging												
...of which silviculture and other forestry activities												
...of which logging												
...of which gathering of non wood forest products												
...of which support services to forestry												

Comments

7b Graduation of students in forest-related education

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Number of graduated students											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Doctoral degree												
Master's degree												
Bachelor's degree												
Technician certificate / diploma												
Total												

Comments

7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1						
#2						
#3						
#4						
#5						
#6						
#7						
#8						
#9						
#10						
All other plant products						
All other animal products						
Total					-	

Name of currency	
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Comments

8 Sustainable Development Goal 15

8a Sustainable Development Goal 15

SDG Indicator 15.1.1 Forest area as proportion of total land area 2015

Indicator	Percent							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area as proportion of total land area 2015	63.98	61.00	58.43	57.94	57.45	56.96	56.48	55.99

Name of agency responsible	
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SDG Indicator 15.2.1 Progress towards sustainable forest management

Sub-Indicator 1	Percent						
	2000-2010	2010-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Forest area annual net change rate	-0.48	-0.86	-0.84	-0.85	-0.86	-0.87	-0.87

Name of agency responsible	
----------------------------	--

Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	211.00	211.00	211.00	211.00	211.00	211.00	211.00	211.00

Name of agency responsible	
----------------------------	--

Sub-Indicator 3	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area located within legally established protected areas	55.65	56.73	57.22	57.05	56.81	56.81	56.81	56.81

Name of agency responsible	
----------------------------	--

Sub-Indicator 4	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area under long-term forest management plan	–	–	–	–	–	–	–	–

Name of agency responsible	
----------------------------	--

Sub-Indicator 5	Forest area (1000 ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area under independently verified forest management certification schemes	104.89	104.89	150.83	197.12	197.12	197.12	–	–