Food and Agriculture Organization of the United Nations

Global Forest Resources Assessment 2020

Report

Mozambique

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

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Introductory text

Mozambique is one of the southern African countries that still has a considerable area of native forest and other woody formations, composed mainly by Miombo, Mecrusse and Mopane ecosystems. These dry tropical forests are subject to a high rate of deforestation and forest degradation, due to their fragility and the high demand for goods and services to which they are subject and the fact that they are the main livelihood of the rural population.

The forest in Mozambique is defined considering 1 hectare of minimum mapping area, 30% of minimum canopy cover and 3 meters of minimum tree height on maturity. According to data from the national forest inventory carried out in 2017, the country has about 32 million hectares of natural forests, which cover 40% of the national territory. Miombo is the dominant forest formation, with about 21 million hectares, representing 62% of the forest area. Miombo growth is slow, estimated at 0.5 to 1 m3 / ha / year. Forestry is selective and covers 20% of the 119 forest species identified and the remaining 80% are secondary, with little market demand.

Forests are one of the most important resources we have on planet Earth. They play a major role in the water and carbon dioxide cycles, recycling oxygen, the degree of erosion of the rocks, the chemical composition of the atmosphere and affect how the landscapes end up reflecting and/or absorbing sunlight. Forests have profoundly changed the history of life on this planet and maintain their critical involvement in the way the climate behaves.

For many people, forests are one of the most prosperous green banks. In these ecosystems many individuals obtain wood, a place to live, food, medicines for the treatment of various diseases, as well as places for sacred services. It is also important to add that these resources energize local, regional, national and international economies. In Mozambique, the forestry sector plays a major role in the national economy, as it provides energy for around 70% of the rural population, including part of the urban population and contributes about 4% to annual GDP.

However, the pressure on this habitat has been increasing and the levels of deforestation at national level and in the world, in the last centuries, are worrying. This fact requires the adoption of measures that promote good environmental practices and the consequent approval of environmental policies for the sustainable management of forest resources. Taking these measures requires that people, from all social levels, have access to information in a clear way and it is in this sense that the production, dissemination and sharing of information about forest resources is relevant and indispensable for the sustainable development of the forest sector. in particular and the environment in general.

In short, we can say that forests provide a series of essential resources that support the development of our ecosystem. By doing the best possible management of our forest resources, we are also improving the health of ecosystems and therefore the health of the economy, people and the country. For this reason, we understand that this statistical compilation provides relevant information for taking strategic, tactical and operational positions to promote sustainable use of the forest, thus helping to create a more prosperous Mozambique and free from environmental disasters.

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National data

Data sources

2007	**References**	A. Marizoli, 2007. National Forest Inventory Report
	Methods used	National Forest Inventory, Full-cover forest/vegetation maps
	Additional comments	Forest was defined as > 10% canopy cover, 0.5 ha minimum area and 5m tree height

2018	**References**	MITADER 2018
	Methods used	National Forest Inventory, Full-cover forest/vegetation maps
	Additional comments	The Forest definition consider >30% of Canopy cover, 1 ha minimum area and 3m of tree height and the classification has changed

Classifications and definitions

	National class	**Definition**
2007	(Semi)-evergreen dense forests	Refers to stands of broad-leafed (semi)-evergreen trees (height > 5 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation. Some vegetation types can have 2 to 3 layers.
	(Semi)-deciduous dense forests	Refers to stands of broadleaved (semi)-deciduous trees (height > 5 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation. Some vegetation types can have 2 to 3 layers.
	(Semi)-evergreen open forests	Refers to stands of broad-leafed (semi)-evergreen trees (height > 5 m) with canopy cover ranging between 40-65%, belonging to the (semi) natural terrestrial vegetation. May or may not have a second layer of shrubs.
	(Semi)-deciduous open forests	Refers to stands of broadleaved (semi)-deciduous trees (height > 5 m) with canopy cover ranging between 40-65%, belonging to the (semi)-natural terrestrial vegetation. May or may not have a second layer of shrubs.
	Thickets (evergreen and (semi)-deciduous)	Refers to stands of broad-leafed (semi)-evergreen or (semi)-deciduous thickets. This class is typical in more arid areas.
	Shrublands (evergreen and (semi)-deciduous)	Refers to stands of broad-leafed (semi)-evergreen or (semi)-deciduous shrubs (height < 5 m) with canopy cover less than 40%. Emergent trees may occasionally occur.
	Grasslands	Closed to open herbaceous vegetation with shrubs. Occasionally trees can be found as well
	Forested areas with shifting cultivation	Closed to open trees surrounded by scattered clustered small-sized field(s) of rainfed herbaceous crop(s). (The tree covers is constituted by a mixed class of forest and woodlands).
	Mangrove	

		Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with a canopy cover ranging from 40-65% to more than 65%) belonging to the (semi)-natural aquatic or regularly flooded vegetation
	Aquatic/regularly flooded herbaceous vegetation	Herbaceous vegetation temporarily to permanently flooded
	Cultivated aquatic or regularly flooded areas	Continuous field(s) of graminoid crops; in flat to almost flat land level; dominant crop Cereal-Rice (Oryza spp.)
	Tree crops	This class includes permanently cropped areas with rainfed broad-leafed evergreen tree (height > 3 m) crop(s) (fruits & nuts) and permanently cropped areas with rainfed tree crops (wood & timber), both with closed crop cover > 70-60% (plantations)
	Aquatic/regularly flooded open forest	This class includes permanently cropped area with rainfed broad-leafed evergreen shrub (height < 5 m) crop(s); dominant crop Beverage-Tea (Camellia sinensis (L.) L.K.). Closed crop cover > 70-60% plantation(s).
	Field crops (generic)	This class includes both rainfed and irrigated field (herbaceous and shrubs) crops. These crops comprise tobacco and cotton, but also subsistence crops like cassava, etc.
	Shifting cultivation with forested areas	Scattered clustered small-sizes field(s) of rainfed herbaceous crops cultivated for a number of years surrounded by a open to closed forests.
	Built-up areas	This unit includes urban, industrial and associated areas
	Bare areas	This unit includes all sort of bare soil
	Natural water bodies	This unit includes all natural water bodies (rivers, inland water, etc).
	Artificial water bodies	This unit includes artificial water bodies (dams).
	Aquatic/regularly flooded shrublands	Open shrubs on temporarily flooded lands

2018	**National class**	**Definition**
	(Semi-) evergreen dense forest	Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation. Some vegetation types can have 2 to 3 layers.
	(Semi)-deciduous dense forests (incl. miombo)	Refers to stands of broad leafed (semi)-deciduous trees (height > 3 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation. Some vegetation types can have 2 to 3 layers.
	(Semi)-evergreen open forests	Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with canopy cover ranging between 30-65%, belonging to the (semi) natural terrestrial vegetation. May or may not have a second layer of shrubs.
	(Semi)-deciduous open forests (incl. miombo)	Refers to stands of broadleaved (semi)-deciduous trees (height > 3 m) with canopy cover ranging between 30-65%, belonging to the (semi)-natural terrestrial vegetation. May or may not have a second layer of shrubs.
	Mangrove	Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with a canopy cover ranging from 30-65% to more than 65%) belonging to the (semi)-natural aquatic or regularly flooded vegetation
	Mecrusse Forest	

		Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation predominantly comprised by Androstachys johnsonii specie
	Mopane Forest	Refers to stands of broad-leafed (semi)-deciduous trees (height > 3 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation predominantly comprised by Colophospermum mopane specie.
	Mountain Forest	Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation, composed of humid or sub-humid forest formations located above of 1300 m altitude.
	Forest Plantation	This class includes permanently cropped areas with rainfed tree crops (wood & timber), with closed canopy cover > 30-60%
	Thickets (evergreen and (semi)-deciduous)	Refers to stands of broad-leafed (semi)-evergreen or (semi)-deciduous thickets. This class is typical in more arid areas.
	Grasslands	Closed to open herbaceous vegetation with shrubs. Occasionally trees can be found as well
	Aquatic/regularly flooded herbaceous vegetation	Herbaceous vegetation temporarily to permanently flooded
	Tree crops	This class includes permanently cropped areas with rain-fed broad-leafed evergreen tree (height > 3 m) crop(s) (fruits & nuts)
	Field crops	This class includes both rain-fed and irrigated field (herbaceous and shrubs) crops. These crops comprise continuous field(s) of graminoid crops in flat to almost flat land level (cereal), tobacco, cotton, but also subsistence crops like cassava, etc
	Built-up areas	This unit includes settlements, urban, industrial and associated areas
	Bare areas	This unit includes all sort of bare soil, dunes, rocks, etc
	Water bodies	This unit includes all sort of water bodies (rivers, lakes, inland water, artificial water bodies, etc).

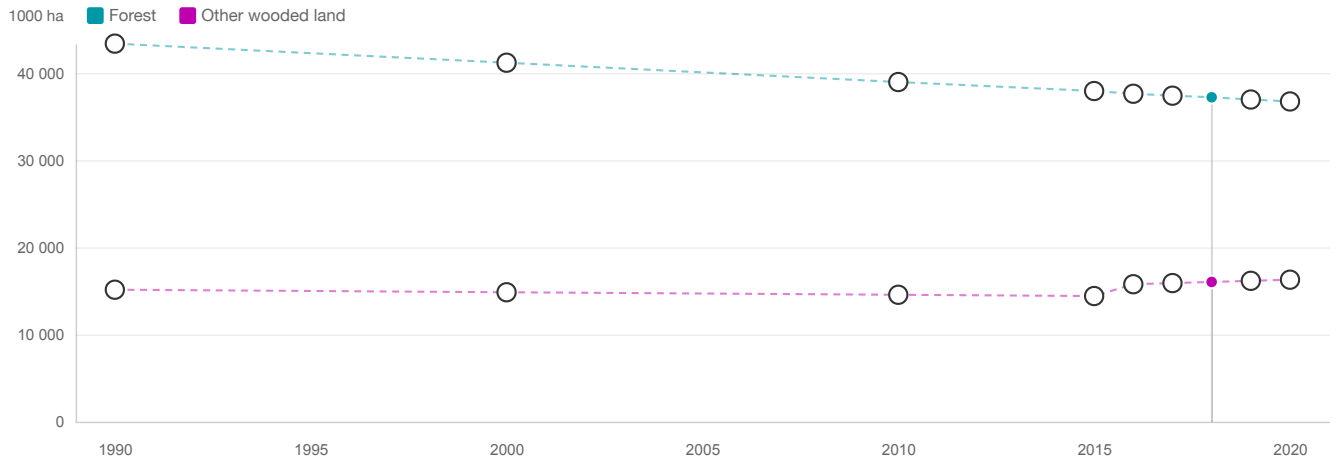
Original data and reclassification

2007	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Forest**	**Other wooded land**	**Other land**
	(Semi)-evergreen dense forests	5 515.60	100.00 %	0.00 %	**0.00 %**
	(Semi)-deciduous dense forests	17 003.10	100.00 %	0.00 %	**0.00 %**
	(Semi)-evergreen open forests	882.70	100.00 %	0.00 %	**0.00 %**
	(Semi)-deciduous open forests	15 507.30	80.00 %	15.00 %	**5.00 %**
	Thickets (evergreen and (semi)-deciduous)	1 093.10	0.00 %	100.00 %	**0.00 %**
	Shrublands (evergreen and	7 605.10	0.00	100.00	**0.00 %**

	(semi)-deciduous)	7 665.10	0.00 %	100.00 %	
	Grasslands	7 190.80	0.00 %	0.00 %	**100.00 %**
	Forested areas with shifting cultivation	5 568.10	45.00 %	0.00 %	**55.00 %**
	Mangrove	357.00	80.00 %	0.00 %	**20.00 %**
	Aquatic/regularly flooded herbaceous vegetation	2 168.00	0.00 %	0.00 %	**100.00 %**
	Cultivated aquatic or regularly flooded areas	14.80	0.00 %	0.00 %	**100.00 %**
	Tree crops	1 737.60	33.00 %	0.00 %	**67.00 %**
	Aquatic/regularly flooded open forest	802.30	10.00 %	70.00 %	**20.00 %**
	Field crops (generic)	5 934.10	0.00 %	0.00 %	**100.00 %**
	Shifting cultivation with forested areas	3 682.40	10.00 %	70.00 %	**20.00 %**
	Built-up areas	849.60	0.00 %	0.00 %	**100.00 %**
	Bare areas	730.60	0.00 %	0.00 %	**100.00 %**
	Natural water bodies	871.90	0.00 %	0.00 %	**100.00 %**
	Artificial water bodies	31.00	0.00 %	0.00 %	**100.00 %**
	Aquatic/regularly flooded shrublands	445.90	0.00 %	100.00 %	**0.00 %**
	Total	**77 991.00**	**39 620.36**	**14 609.49**	**23 761.15**

2018	**Classifications and definitions**		**FRA classes**		
	Class	**Area (1000 ha)**	**Forest**	**Other wooded land**	**Other land**
	(Semi-) evergreen dense forest	1 713.02	100.00 %	0.00 %	**0.00 %**
	(Semi)-deciduous dense forests (incl. miombo)	11 918.54	100.00 %	0.00 %	**0.00 %**
	(Semi)-evergreen open forests	1 127.70	100.00 %	0.00 %	**0.00 %**
	(Semi)-deciduous open forests (incl. miombo)	23 849.25	80.00 %	5.00 %	**15.00 %**

	Mangrove	358.72	90.00 %	0.00 %	**10.00 %**
	Mecrusse Forest	452.17	100.00 %	0.00 %	**0.00 %**
	Mopane Forest	2 262.18	100.00 %	0.00 %	**0.00 %**
	Mountain Forest	278.30	100.00 %	0.00 %	**0.00 %**
	Forest Plantation	70.01	100.00 %	0.00 %	**0.00 %**
	Thickets (evergreen and (semi)-deciduous)	7 429.00	0.00 %	100.00 %	**0.00 %**
	Grasslands	19 915.46	0.00 %	35.00 %	**65.00 %**
	Aquatic/regularly flooded herbaceous vegetation	573.92	0.00 %	10.00 %	**90.00 %**
	Tree crops	1 939.05	0.00 %	20.00 %	**80.00 %**
	Field crops	4 541.50	0.00 %	0.00 %	**100.00 %**
	Built-up areas	550.59	0.00 %	0.00 %	**100.00 %**
	Bare areas	530.95	0.00 %	0.00 %	**100.00 %**
	Water bodies	680.20	0.00 %	0.00 %	**100.00 %**
	Total	**78 190.56**	**37 224.17**	**16 037.08**	**24 929.32**


1000 ha
Forest
Other wooded land
40 000
30 000
20 000
10 000
0
1990
1995
2000
2005
2010
2015
2020

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	43 378.00	41 188.00	38 972.14	37 940.00	37 628.29	37 406.60	37 224.17	36 966.11	36 743.76
Other wooded land (a)	15 146.00	14 856.00	14 566.00	14 421.00	15 777.51	15 907.29	16 037.08	16 166.87	16 296.66
Other land (c-a-b)	**20 114.00**	**22 594.00**	**25 099.86**	**26 277.00**	**25 232.20**	**25 324.11**	**25 376.76**	**25 505.02**	**25 597.58**
Total land area (c)	**78 638.00**	**78 638.00**	**78 638.00**	**78 638.00**	**78 638.00**	**78 638.00**	**78 638.00**	**78 638.00**	**78 638.00**

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

2007	**References**	A. Marizoli, 2007. National Forest Inventory Report
	Methods used	National Forest Inventory, Full-cover forest/vegetation maps
	Additional comments	Forest was defined as > 10% canopy cover, 0.5 ha minimum area and 5m tree height

2018	**References**	MITADER 2018
	Methods used	National Forest Inventory, Full-cover forest/vegetation maps
	Additional comments	The Forest definition consider >30% of Canopy cover, 1 ha minimum area and 3m of tree height and the classification has changed

Classifications and definitions

2007	National class	Definition
	(Semi)-evergreen dense forests	Refers to stands of broad-leafed (semi)-evergreen trees (height > 5 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation. Some vegetation types can have 2 to 3 layers.
	(Semi)-deciduous dense forests	Refers to stands of broadleaved (semi)-deciduous trees (height > 5 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation. Some vegetation types can have 2 to 3 layers.
	(Semi)-evergreen open forests	Refers to stands of broad-leafed (semi)-evergreen trees (height > 5 m) with canopy cover ranging between 40-65%, belonging to the (semi) natural terrestrial vegetation. May or may not have a second layer of shrubs.
	(Semi)-deciduous open forests	Refers to stands of broadleaved (semi)-deciduous trees (height > 5 m) with canopy cover ranging between 40-65%, belonging to the (semi)-natural terrestrial vegetation. May or may not have a second layer of shrubs.
	Thickets (evergreen and (semi)-deciduous)	Refers to stands of broad-leafed (semi)-evergreen or (semi)-deciduous thickets. This class is typical in more arid areas.
	Shrublands (evergreen and (semi)-deciduous)	Refers to stands of broad-leafed (semi)-evergreen or (semi)-deciduous shrubs (height < 5 m) with canopy cover less than 40%. Emergent trees may occasionally occur.
	Grasslands	Closed to open herbaceous vegetation with shrubs. Occasionally trees can be found as well
	Forested areas with shifting cultivation	Closed to open trees surrounded by scattered clustered small-sized field(s) of rainfed herbaceous crop(s). (The tree covers is constituted by a mixed class of forest and woodlands).
	Mangrove	Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with a canopy cover ranging from 40-65% to more than 65%) belonging to the (semi)-natural aquatic or regularly flooded vegetation

	Aquatic/regularly flooded herbaceous vegetation	Herbaceous vegetation temporarily to permanently flooded
	Cultivated aquatic or regularly flooded areas	Continuous field(s) of graminoid crops; in flat to almost flat land level; dominant crop Cereal-Rice (Oryza spp.)
	Tree crops	This class includes permanently cropped areas with rainfed broad-leafed evergreen tree (height > 3 m) crop(s) (fruits & nuts) and permanently cropped areas with rainfed tree crops (wood & timber), both with closed crop cover > 70-60% (plantations)
	Aquatic/regularly flooded open forest	This class includes permanently cropped area with rainfed broad-leafed evergreen shrub (height < 5 m) crop(s); dominant crop Beverage-Tea (Camellia sinensis (L.) L.K.). Closed crop cover > 70-60% plantation(s).
	Field crops (generic)	This class includes both rainfed and irrigated field (herbaceous and shrubs) crops. These crops comprise tobacco and cotton, but also subsistence crops like cassava, etc.
	Shifting cultivation with forested areas	Scattered clustered small-sizes field(s) of rainfed herbaceous crops cultivated for a number of years surrounded by a open to closed forests.
	Built-up areas	This unit includes urban, industrial and associated areas
	Bare areas	This unit includes all sort of bare soil
	Natural water bodies	This unit includes all natural water bodies (rivers, inland water, etc).
	Artificial water bodies	This unit includes artificial water bodies (dams).
	Aquatic/regularly flooded shrublands	Open shrubs on temporarily flooded lands

2018	**National class**	**Definition**
	(Semi-) evergreen dense forest	Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation. Some vegetation types can have 2 to 3 layers.
	(Semi)-deciduous dense forests (incl. miombo)	Refers to stands of broad leafed (semi)-deciduous trees (height > 3 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation. Some vegetation types can have 2 to 3 layers.
	(Semi)-evergreen open forests	Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with canopy cover ranging between 30-65%, belonging to the (semi) natural terrestrial vegetation. May or may not have a second layer of shrubs.
	(Semi)-deciduous open forests (incl. miombo)	Refers to stands of broadleaved (semi)-deciduous trees (height > 3 m) with canopy cover ranging between 30-65%, belonging to the (semi)-natural terrestrial vegetation. May or may not have a second layer of shrubs.
	Mangrove	Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with a canopy cover ranging from 30-65% to more than 65%) belonging to the (semi)-natural aquatic or regularly flooded vegetation
	Mecrusse Forest	Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation predominantly comprised by Androstachys johnsonii specie
	Mopane Forest	

		Refers to stands of broad-leafed (semi)-deciduous trees (height > 3 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation predominantly comprised by Colophospermum mopane specie.
	Mountain Forest	Refers to stands of broad-leafed (semi)-evergreen trees (height > 3 m) with a closed canopy cover (> 65%) belonging to the (semi)-natural terrestrial vegetation, composed of humid or sub-humid forest formations located above of 1300 m altitude.
	Forest Plantation	This class includes permanently cropped areas with rainfed tree crops (wood & timber), with closed canopy cover > 30-60%
	Thickets (evergreen and (semi)-deciduous)	Refers to stands of broad-leafed (semi)-evergreen or (semi)-deciduous thickets. This class is typical in more arid areas.
	Grasslands	Closed to open herbaceous vegetation with shrubs. Occasionally trees can be found as well
	Aquatic/regularly flooded herbaceous vegetation	Herbaceous vegetation temporarily to permanently flooded
	Tree crops	This class includes permanently cropped areas with rain-fed broad-leafed evergreen tree (height > 3 m) crop(s) (fruits & nuts)
	Field crops	This class includes both rain-fed and irrigated field (herbaceous and shrubs) crops. These crops comprise continuous field(s) of graminoid crops in flat to almost flat land level (cereal), tobacco, cotton, but also subsistence crops like cassava, etc
	Built-up areas	This unit includes settlements, urban, industrial and associated areas
	Bare areas	This unit includes all sort of bare soil, dunes, rocks, etc
	Water bodies	This unit includes all sort of water bodies (rivers, lakes, inland water, artificial water bodies, etc).

Original data and reclassification

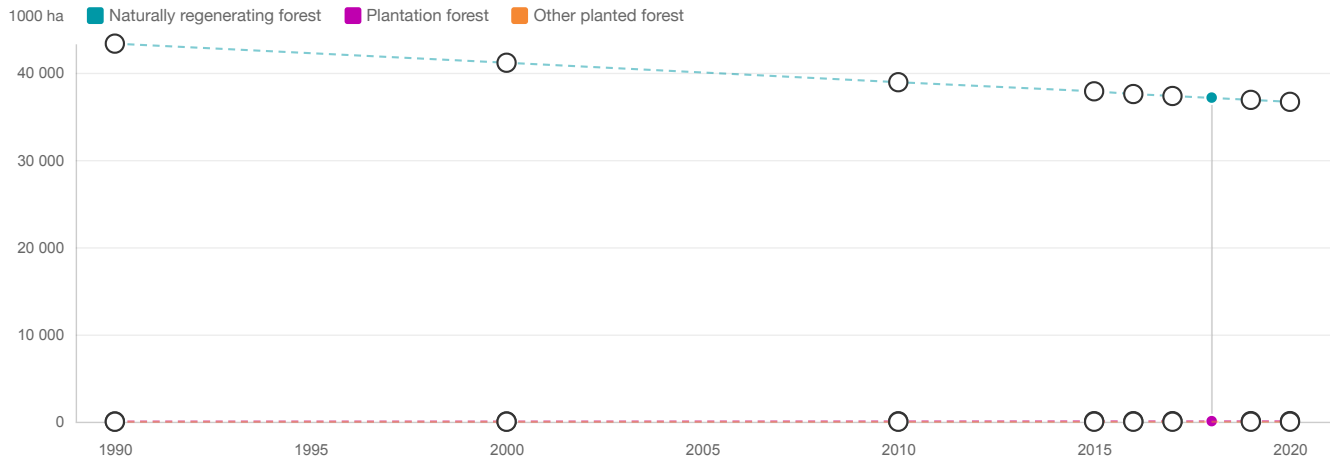
2007	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Naturally regenerating forest**	**Plantation forest**	**Other planted forest**
	(Semi)-evergreen dense forests	5 515.60	100.00 %	%	%
	(Semi)-deciduous dense forests	17 003.10	100.00 %	%	%
	(Semi)-evergreen open forests	882.70	100.00 %	%	%
	(Semi)-deciduous open forests	12 405.84	100.00 %	%	%
	Forested areas with shifting cultivation	2 505.65	100.00 %	%	%
	Mangrove	285.60	100.00 %	%	%
	Tree crops	573.41	0.00 %	40.00 %	60.00 %
	Aquatic/regularly flooded open	80.23			

	forest		100.00 %	%	%
	Shifting cultivation with forested areas	368.24	100.00 %	%	%
	Total	**39 620.36**	**39 046.96**	**229.36**	**344.04**

Plantation forest	Area (1000 ha)	...of which introduced
Tree crops	229.36	80.00 %
Total	**229.36**	**183.49**

	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Naturally regenerating forest**	**Plantation forest**	**Other planted forest**
2018	(Semi-) evergreen dense forest	1 713.02	100.00 %	%	%
	(Semi)-deciduous dense forests (incl. miombo)	11 918.54	100.00 %	%	%
	(Semi)-evergreen open forests	1 127.70	100.00 %	%	%
	(Semi)-deciduous open forests (incl. miombo)	19 079.40	100.00 %	%	%
	Mangrove	322.85	100.00 %	%	%
	Mecrusse Forest	452.17	100.00 %	%	%
	Mopane Forest	2 262.18	100.00 %	%	%
	Mountain Forest	278.30	100.00 %	%	%
	Forest Plantation	70.01	0.00 %	100.00 %	%
	Total	**37 224.17**	**37 154.16**	**70.01**	–

Plantation forest	Area (1000 ha)	...of which introduced
Forest Plantation	70.01	100.00 %
Total	**70.01**	**70.01**


1000 ha
Naturally regenerating forest
Plantation forest
Other planted forest
40 000
30 000
20 000
10 000
0
1990
1995
2000
2005
2010
2015
2020

FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)	43 340.00	41 150.00	38 917.50	37 874.01	37 562.30	37 338.63	37 154.16	36 894.00	36 669.49
Planted forest (b)	**38.00**	**38.00**	**54.64**	**65.99**	**65.99**	**67.97**	**70.01**	**72.11**	**74.27**
Plantation forest	38.00	38.00	54.64	65.99	65.99	67.97	70.01	72.11	74.27
…of which introduced species	38.00	38.00	54.64	65.99	65.99	67.97	70.01	72.11	74.27
Other planted forest	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Total (a+b)	**43 378.00**	**41 188.00**	**38 972.14**	**37 940.00**	**37 628.29**	**37 406.60**	**37 224.17**	**36 966.11**	**36 743.76**
Total forest area	**43 378.00**	**41 188.00**	**38 972.14**	**37 940.00**	**37 628.29**	**37 406.60**	**37 224.17**	**36 966.11**	**36 743.76**

Comments

There is no information about the other planted area. We only have this information on the 2007 NFI (Marizoli, 2007) that plantation is included in tree crops, however as the year 2007 is not a FRA reporting year the inclusion of tree crops does not affect the years 2000 and 2010, it was not possible to separate.

Below we have the total annual planted area from 2001 to 2016

Forest Plantation																
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Area (ha)	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	45,105.55	54,637.04	61,106.39	62,694.97	64,283.55	65,987.16	65,987.16	65,987.16

Source: MITADER/FNDS - FREL Submotted

For 2017 to 2020 we assumed the annual increment of 3% due to the económic crise in the country.

Forest Plantation																			
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area (ha)	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	45,105.55	54,637.04	61,106.39	62,694.97	64,283.55	65,987.16	65,987.16	65,987.16	67,966.77	70,005.77	72,105.95	74,269.12

For (semi)-natural forest a rough estimate of deforestation rate for the entire country was derived based on a model, using a similar approach of that used in FRA 1990 (Marzoli, 2007). The main assumption of the model is that population pressure is the main factor of forest area change. Thus, using a good correction between population pressure and land cover, it was possible to simulate a net change of 219 000 ha per year.

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

National Directorate of Forest. Full-cover forest/vegetation maps 2007. Marizoli. Mozambique

National Directorate of Forest. Full-cover forest/vegetation maps 2018. MITADER. Mozambique

National classification and definitions

Term / category	Definition
Naturally regenerated forest	Forest predominantly composed of trees established through natural regeneration
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).
Characteristics categories	
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.
Other naturally regenerated forest of introduced species (sub-category)	Other naturally regenerated forest where the trees are predominantly of introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding
Planted forest of introduced species (sub-category)	Planted forest, where the planted/seeded trees are predominantly of introduced species
Special categories	
Rubber plantations	Forest area with rubber tree plantations.
Mangroves	Area of forest and other wooded land with mangrove vegetation
Bamboo	Area of forest and other wooded land with predominant bamboo vegetation.

Original data

National classes 2007	Area (1000 ha)
(Semi)-evergreen dense forests	5 515.60
(Semi)-deciduous dense forests	17 003.10
(Semi)-evergreen open forests	882.7
(Semi)-deciduous open forests	15 507.30
Thickets (evergreen and (semi)-deciduous)	1 093.10
Shrublands (evergreen and (semi)-deciduous)	7 605.10
Grasslands	7 190.80
Forested areas with shifting cultivation	5 568.10
Mangrove	357
Aquatic/regularly flooded herbaceous vegetation	2 168.00

Cultivated aquatic or regularly flooded areas	14.8
Tree crops	1 737.60
Aquatic/regularly flooded open forest	802.3
Field crops (generic)	5 934.10
Shifting cultivation with forested areas	3 682.40
Built-up areas	849.6
Bare areas	730.6
Natural water bodies	871.9
Artificial water bodies	31
Aquatic/regularly flooded shrublands	445.9

National Classes 2018	**Area (ha)**
(Semi-) evergreen dense forest	1713029.46
(Semi)-deciduous dense forests (incl. miombo)	11918549.95
(Semi)-evergreen open forests	1127703.36
(Semi)-deciduous open forests (incl. miombo)	23849253.08
Mangrove	358726.84
Mecrusse Forest	452171.41
Mopane Forest	2262183.94
Mountain Forest	278301.87
Forest Plantation	70005.77
Thickets (evergreen and (semi)-deciduous)	7429006.25
Grasslands	19915464.17
Aquatic/regularly flooded herbaceous vegetation	573921.16
Tree crops	1939058.71
Field crops	4541500.01
Built-up areas	550598.84
Bare areas	530955.12
Water bodies	680299.34

Analysis and processing of national data

Estimation and forecasting

For the mangroves, we have two data points, 2007 and 2018. Using these data points we can make linear inter and extrapolation which would give the following time series

2007	2018	**1990**	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
357.00	358.73	354.33	355.90	357.47	358.26	358.41	358.57	358.73	358.88	359.04

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest					
Temporarily unstocked and/or recently regenerated					
Bamboos					
Mangroves	354.33	355.90	357.47	358.26	359.04
Rubber wood					

Comments

Data are not available to estimate the situation of primary forest. Some patches may exist; but it is impossible to assess them. Consequently, all natural forests are under "Other naturally regenerated forest".

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

Mozambique's Forest Reference Emission level for Reducing Emissions from Deforestation in Natural Forestsl

National classification and definitions

-

Original data

Original Data

The FREL submission indicates the following data on deforestacion and forest expansion

Period: 2003-2013 (11 years)	ha	ha/year
Forest land converted to non-forest land (deforestation)	2,937,322	267,029
Non-forest land converted to forest land (forest expansion)	124,393	11,308

Analysis and processing of national data

Estimation and forecasting

The average annual deforestation 2003-2013 was reported for the periods from 2000 onwards. For 1990-2000 the net change rate was reported as deforestation.

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)	0.00	45.44	60.60	27.78
…of which afforestation	0.00			
…of which natural expansion	0.00			
Deforestation (b)	219.00	267.03	267.03	267.03
Forest area net change (a-b)	**-219.00**	**-221.59**	**-206.43**	**-239.25**

Comments

The data used for table 1a and the net change derived thereof, are not fully comparable to data used for the FREL report. Therefore, the forest expansion as of the FREL report of 11,308 hectares per year was not used in this reporting table. Instead the difference between deforestation and net change was reported as expansion.

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

DNTF/DINAF annual reports

National classification and definitions

Category	Definition
Forest	Land spanning more than 1 hectares with trees higher than 3 meters and a canopy cover of more than 30 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 1 hectares with trees higher than 3 meters and a canopy cover of 5-30 percent or trees able to reach these thresholds; or with a combined cover of shrubs bushes and trees above 30 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".
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 *(sub-category)*	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 *(sub-category)*	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 30 percent threshold.
...of which human induced *(sub-category)*	Human induced conversion of forest to other land use or the permanent reduction of the tree canopy cover below the minimum 30 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 *(sub-category)*	Re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.

Original data

Forest Plantations

Forest Plantation																			
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area (ha)	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	45,105.55	54,637.04	61,106.39	62,694.97	64,283.55	65,987.16	65,987.16	65,987.16	67,966.77	70,005.77	72,105.95	74,269.12

Analysis and processing of national data

Estimation and forecasting

Forest Plantation

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area (ha)	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	43,325.14	45,105.55	54,637.04	61,106.39	62,694.97	64,283.55	65,987.16	65,987.16	65,987.16	67,966.77	70,005.77	72,105.95	74,269.12
Reforestation	0	0	0	0	0	0	0	0	1780.41	9531.49	6469.35	1588.58	1,588.58	1,703.61	0	0	1979.61	2039	2100.18	2163.17

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Reforestation	0.00	1.13	2.27	1.66

Comments

1f Other land with tree cover

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)				
	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	**20 114.00**	**22 594.00**	**25 099.86**	**26 277.00**	**25 597.58**

Comments

Data are not available to estimate the situation of other land with tree cover.

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

1. Marzoli, A. 2007. Inventario Florestal Nacional. AIFM. DNTF, Maputo. Total and commercial growing stock

2. 2006 IPCC guidelines for National Greenhouse Gas Inventories. Volume 4, chapters 2 and 4. Default values and conversion factors for estimating biomass and carbon

3. INIA. 1997. Legenda da Carta Nacional de solos, Escala 1:1000 000. Soil types (definitions and area

National classification 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.

Original data

FRA categories	Area (1000 ha)									
	1990	2000	2007	2010	2015	2016	2017	2018	2019	2020
Forest (a)	43 378.00	41 188.00	39 620.36	38 972.14	37 940.00	37 628.29	37 406.60	37 224.17	36 966.11	36 743.76
Other wooded land (b)	15 146.00	14 856.00	14 609.49	14 566.00	14 421.00	15 777.51	15 907.29	16 037.08	16 166.87	16 296.66
Other land (c-a-b)	20 114.00	22 594.00	24 408.15	25 099.86	26 277.00	25 232.20	25 324.11	25 376.76	25 505.02	25 597.58
Total land area (c)	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00

FRA categories	Forest area (1000 ha)Copy values									
	1990	2000	2007	2010	2015	2016	2017	2018	2019	2020

Naturally regenerating forest (a)	43 340.00	41 150.00	39 046.96	38 917.50	37 874.01	37 562.30	37 340.61	37 154.16	36 894.00	36 669.49
Planted forest (b)	38	38	573.41	54.64	65.99	65.99	65.99	70.01	72.11	74.27
Plantation forest	38	38	229.36	54.64	65.99	65.99	65.99	70.01	72.11	74.27
…of which introduced species	38	38	183.49	54.64	65.99	65.99	65.99	70.01	72.11	74.27
Other planted forest			344.04							
Total (a+b)	43 378.00	41 188.00	39 620.36	38 972.14	37 940.00	37 628.29	37 406.60	37 224.17	36 966.11	36 743.76
Total forest area	43 378.00	41 188.00	39 620.36	38 972.14	37 940.00	37 628.29	37 406.60	37 224.17	36 966.11	36 743.76

Growing Stock

National class	**Total growing stock**	**Growing stock of commercial species**
	Vol/ ha	Vol/ ha
	(m3/ha)	(m3/ha)
Dense Forest	40.2	5.9
Open Forest	32.2	4.2
Total Forests	36.2	5
Thicket/shrublands	18.8	3.8
Forest with shifting cultivation	20.6	3.4
Total OWL	19.7	3.6

Based on expert judgement, for the Growing Stock of forest plantations it was assumed an average of 150 m3/ha.

Analysis and processing of national data

Estimation and forecasting

Considering the average of forest growing stock (36.2 m3/ha), average of OWL (19.7 m3/ha) and growing stock in plantations (150 m3/ha), assuming the same data for all period, we calculated the total growing stock for forest and OWL from 1990 to 2020.

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	36.20	36.20	36.20	36.20	36.20	36.20	36.20	36.20	36.20
Planted forest	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
…of which plantation forest	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
…of which other planted forest									
Forest	36.30	36.30	36.36	36.40	36.40	36.40	36.41	36.42	36.43
Other wooded land	19.70	19.70	19.70	19.70	19.70	19.70	19.70	19.70	19.70

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	1 568.91	1 489.63	1 408.81	1 371.04	1 359.76	1 351.66	1 344.98	1 335.56	1 327.44
Planted forest	5.70	5.70	8.20	9.90	9.90	10.20	10.50	10.82	11.14
…of which plantation forest	5.70	5.70	8.20	9.90	9.90	10.20	10.50	10.82	11.14
…of which other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forest	1 574.62	1 495.12	1 417.03	1 381.02	1 369.67	1 361.60	1 355.33	1 346.31	1 338.58
Other wooded land	298.38	292.66	286.95	284.09	310.82	313.37	315.93	318.49	321.04

Comments

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

Marzoli, A. 2007. Inventario Florestal Nacional. AIFM. DNTF, Maputo.

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

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	Brachystegia spiciformis	messassa			208.00		
#2 Ranked in terms of volume	Brachystegia boehmii	Mafuti			177.00		
#3 Ranked in terms of volume	Julbernardia globiflora	Messassa encarnada			140.00		
#4 Ranked in terms of volume	Colophospermum mopane	Mopane			69.00		
#5 Ranked in terms of volume	Pterocarpus angolensis	Umbila			63.00		
#6 Ranked in terms of volume	Millettia stuhlmannii	Jambirre			53.00		
#7 Ranked in terms of volume	Sclerocarya birrea	Canho			50.00		
#8 Ranked in terms of volume	Pseudolachnostylis maprouneifolia	Messolo			39.00		
#9 Ranked in terms of volume	Uapaca kirkiana	Metongoro			36.00		
#10 Ranked in terms of volume	Burkea africana	Mucarala			34.00		
Remaining native tree species					548.03		
Total volume of native tree species			–	–	**1 417.03**	–	–
Introduced tree species							
#1 Ranked in terms of volume	Eucalyptus grandis						

FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#2 Ranked in terms of volume	Eucalyptus europhylla						
#3 Ranked in terms of volume	Pinus taeda						
#4 Ranked in terms of volume	Pinus patula						
#5 Ranked in terms of volume							
Remaining introduced tree species							
Total volume of introduced tree species			–	–	–	–	–
Total growing stock			–	–	**1 417.03**	–	–

Comments

There is no information available of the area of plantation per specie.

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

1. Marzoli, A. 2007. Inventario Florestal Nacional. AIFM. DNTF, Maputo. Total and commercial growing stock

2. 2006 IPCC guidelines for National Greenhouse Gas Inventories. Volume 4, chapters 2 and 4. Default values and conversion factors for estimating biomass and carbon

3. INIA. 1997. Legenda da Carta Nacional de solos, Escala 1:1000 000. Soil types (definitions and area

National classification 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.

Original data

Data from Table 1b and Table 2a were used as input to the biomass calculator.

Analysis and processing of national data

Estimation and forecasting

Insert the percentages of Growing stock by IPCC forest type for each of the FRA forest categories									
IPCC forest types	**FRA forest categories**								
	Naturally regenerating forest	**Plantation forest**	**Other planted forest**						
	% of Growing stock								
Broadleaved humid	20%	0%	5%						
Broadleaved dry	80%	0%	95%						

Coniferous	0%	100%	0%						
	100%	*100%*	*100%*	*Must add up to 100%*					
Insert Carbon fraction used by country (IPCC default = 0.47)									
Carbon Fraction	47%								
Biomass conversion and expansion factors (BCEF)									
Naturally regenerating forest	**1990**	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Broadleaved humid	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Broadleaved dry	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Coniferous	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Plantation forest									
Broadleaved humid	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Broadleaved dry	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Coniferous	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Other planted forest									
Broadleaved humid									
Broadleaved dry									
Coniferous									
Weighted BCEF									
Naturally regenerating forest	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Plantation forest	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Other planted forest									
Root-shoot ratios									
Naturally regenerating forest	**1990**	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**

Broadleaved humid	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Broadleaved dry	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Coniferous	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Plantation forest									
Broadleaved humid	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Broadleaved dry	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Coniferous	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Other planted forest									
Broadleaved humid									
Broadleaved dry									
Coniferous									
Weighted RS ratio									
Naturally regenerating forest	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Plantation forest	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Other planted forest									
Above-ground biomass (t/ha)									
	1990	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Naturally regenerating forest	101.36	101.36	101.36	101.36	101.36	101.36	101.36	101.36	101.36
Plantation forest	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00
Other planted forest									
Total	**101.36**	**101.36**	**101.37**	**101.37**	**101.37**	**101.37**	**101.37**	**101.37**	**101.37**
Below-ground biomass (t/ha)									
	1990	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Naturally regenerating forest	26.76	26.76	26.76	26.76	26.76	26.76	26.76	26.76	26.76
Plantation forest	30.45	30.45	30.45	30.45	30.45	30.45	30.45	30.45	30.45
Other planted forest									

Total	**26.76**	**26.76**	**26.76**	**26.77**	**26.77**	**26.77**	**26.77**	**26.77**	**26.77**
Copy highlighted biomass values into FRA platform table 2c									
Forest biomass (tonnes/ha)	**1990**	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Above-ground biomass	101.36	101.36	101.37	101.37	101.37	101.37	101.37	101.37	101.37
Below-ground biomass	26.76	26.76	26.76	26.77	26.77	26.77	26.77	26.77	26.77
Copy highlighted carbon values into FRA platform table 2d									
Carbon in Forest biomass (tonnes/ha)	**1990**	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Above-ground biomass	47.64	47.64	47.64	47.64	47.64	47.64	47.64	47.64	47.64
Below-ground biomass	12.58	12.58	12.58	12.58	12.58	12.58	12.58	12.58	12.58

Reclassification into FRA 2020 categories

-

FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	101.36	101.36	101.37	101.37	101.37	101.37	101.37	101.37	101.37
Below-ground biomass	26.76	26.76	26.76	26.77	26.77	26.77	26.77	26.77	26.77
Dead wood									

Comments

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

1. Marzoli, A. 2007. Inventario Florestal Nacional. AIFM. DNTF, Maputo. Total and commercial growing stock

2. 2006 IPCC guidelines for National Greenhouse Gas Inventories. Volume 4, chapters 2 and 4. Default values and conversion factors for estimating biomass and carbon

3. INIA. 1997. Legenda da Carta Nacional de solos, Escala 1:1000 000. Soil types (definitions and area

National classification 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.

Original data

Table 1b

FRA categories	Area (1000 ha)									
	1990	2000	2007	2010	2015	2016	2017	2018	2019	2020
Forest (a)	43 378.00	41 188.00	39 620.36	38 972.14	37 940.00	37 630.68	37 409.60	37 217.49	36 967.46	36 746.39
Other wooded land (b)	15 146.00	14 856.00	14 609.49	14 566.00	14 421.00	15 777.51	15 907.29	16 037.08	16 166.87	16 296.66
Other land (c-a-b)	20 114.00	22 594.00	24 408.15	25 099.86	26 277.00	25 229.81	25 321.11	25 383.44	25 503.67	25 594.95
Total land area (c)	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00	78 638.00

Analysis and processing of national data

Estimation and forecasting

Insert the percentages of Growing stock by IPCC forest type for each of the FRA forest categories	

IPCC forest types	**FRA forest categories**								
	Naturally regenerating forest	**Plantation forest**	**Other planted forest**						
	% of Growing stock								
Broadleaved humid	20%	0%	5%						
Broadleaved dry	80%	0%	95%						
Coniferous	0%	100%	0%						
	100%	*100%*	*100%*	*Must add up to 100%*					
Insert Carbon fraction used by country (IPCC default = 0.47)									
Carbon Fraction	47%								
Biomass conversion and expansion factors (BCEF)									
Naturally regenerating forest	**1990**	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Broadleaved humid	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Broadleaved dry	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Coniferous	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Plantation forest									
Broadleaved humid	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Broadleaved dry	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Coniferous	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Other planted forest									
Broadleaved humid									
Broadleaved dry									
Coniferous									
Weighted BCEF									
Naturally regenerating forest	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Plantation forest	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70

Other planted forest									
Root-shoot ratios									
Naturally regenerating forest	**1990**	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Broadleaved humid	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Broadleaved dry	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Coniferous	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Plantation forest									
Broadleaved humid	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Broadleaved dry	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Coniferous	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Other planted forest									
Broadleaved humid									
Broadleaved dry									
Coniferous									
Weighted RS ratio									
Naturally regenerating forest	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Plantation forest	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Other planted forest									
Above-ground biomass (t/ha)									
	1990	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Naturally regenerating forest	101.36	101.36	101.36	101.36	101.36	101.36	101.36	101.36	101.36
Plantation forest	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00	105.00
Other planted forest									
Total	**101.36**	**101.36**	**101.37**	**101.37**	**101.37**	**101.37**	**101.37**	**101.37**	**101.37**

Below-ground biomass (t/ha)									
	1990	**2000**	**2010**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Naturally regenerating forest	26.76	26.76	26.76	26.76	26.76	26.76	26.76	26.76	26.76
Plantation forest	30.45	30.45	30.45	30.45	30.45	30.45	30.45	30.45	30.45
Other planted forest									
Total	**26.76**	**26.76**	**26.76**	**26.77**	**26.77**	**26.77**	**26.77**	**26.77**	**26.77**

Reclassification into FRA 2020 categories

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FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	47.64	47.64	47.64	47.64	47.64	47.64	47.64	47.64	47.64
Carbon in below-ground biomass	12.58	12.58	12.58	12.58	12.58	12.58	12.58	12.58	12.58
Carbon in dead wood									
Carbon in litter									
Soil carbon									

Soil depth (cm) used for soil carbon estimates	

Comments

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

Marzoli, A 2007. Inventario Florestal Nacional. Zoning of Natural Forests

National classification 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 (sub-category)	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 (sub-category)	Forest area primarily designated or managed for coastal stabilization.
...of which desertification control (sub-category)	Forest area primarily designated or managed for desertification control.
...of which avalanche control (sub-category)	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 (sub-category)	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 (sub-category)	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 (sub-category)	Forest area designated or managed for public recreation.
...of which carbon storage or sequestration (sub-category)	Forest area designated or managed for carbon storage or sequestration.
...of which spiritual or cultural services (sub-category)	Forest area designated or managed for spiritual or cultural services.
...of which other (sub-category)	Forest area designated or managed for other ecosystem services.

Original data

-

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)	29 138.00	27 667.00	26 212.00	22 425.53	19 987.66
Protection of soil and water (b)	9 635.00	9 148.00	8 617.14	7 509.64	8 260.60
Conservation of biodiversity (c)	4 605.00	4 373.00	4 143.00	6 967.56	6 967.56
Social Services (d)	0.00	0.00	0.00	1 037.27	1 527.94
Multiple use (e)	0.00	0.00	0.00	0.00	0.00
Other (specify in comments) (f)	0.00	0.00	0.00	0.00	0.00
None/unknown (g)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total forest area	**43 378.00**	**41 188.00**	**38 972.14**	**37 940.00**	**36 743.76**

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production	29 138.00	27 667.00	26 212.00	22 425.53	19 987.66
Protection of soil and water	43 378.00	41 188.00	38 972.14	37 940.00	36 743.76
Conservation of biodiversity	4 605.00	4 373.00	4 143.00	6 967.56	6 967.56
Social Services	43 378.00	41 188.00	38 972.14	37 940.00	36 743.76
Other (specify in comments)					

Comments

For the 2020 data we assumed that the protection area will increase 10% from 2015 due to the development of new infrastruture which require a buffer zone, such as railway, dam, roads, etc and the conservation forest area will remain the same but the production area will reduce due to forest logging, shifting cultivation and charcoal production and constructions. We also considered the forest used for social purpose by communities that will increase since the communities a getting the right to manage it. Regarding to designated management objective, all total forest area are used to protect the soil and water and for social service

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

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

There were no forest concessions before the reference year 2000. The forest area within protected area is obtained from mapping of conservation areas and protaction areas and the forest area with long term forest management plan from Concessions area with management plans and Conservation Areas with management plans. From 2015 to 2019 we assumed that the forest within protected area remain the same and the forest area with long term management plan will increase 10% per year for 2019 and 2020

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas	14 240.00	13 521.00	12 760.14	14 477.20	14 477.20	14 477.20	14 477.20	14 477.20	15 228.16
Forest area with long-term forest management plan	4 605.00	4 373.00	7 663.62	15 439.41	16 733.53	18 703.21	20 037.68	21 080.40	22 227.39
…of which in protected areas	4 605.00	4 373.00	4 143.00	6 967.56	6 967.56	6 967.56	6 967.56	6 967.56	6 967.56

Comments

4 Forest ownership and management rights

4a Forest ownership

National Data

Data sources + type of data source eg NFI, etc

National Directorate of Forest, Yearly database on forest concessionaires 1997-2018 - Database on forest concession areas

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)	38.00	38.00	12.14	75.00
…of which owned by individuals	0.00	0.00	0.00	0.00
…of which owned by private business entities and institutions	38.00	38.00	12.14	75.00
…of which owned by local, tribal and indigenous communities	0.00	0.00	0.00	0.00
Public ownership (b)	43 340.00	41 150.00	38 960.00	37 865.00
Unknown/other (specify in comments) (c)	**0.00**	**0.00**	**0.00**	**0.00**
Total forest area	**43 378.00**	**41 188.00**	**38 972.14**	**37 940.00**

Comments

All natural forest is owned by Government

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)	43 340.00	40 614.00	0.00	0.00
Individuals (b)	0.00	0.00	0.00	0.00
Private business entities and institutions (c)	0.00	536.00	37 760.00	36 665.00
Local, tribal and indigenous communities (d)	0.00	0.00	1 200.00	1 200.00
Unknown/other (specify in comments) (e)	**0.00**	**0.00**	**0.00**	**0.00**
Total public ownership	**43 340.00**	**41 150.00**	**38 960.00**	**37 865.00**

Comments

In 1990 the forest was managed by public enterprise then the 1997 Forest Act. gave the right to manage the forest to private business entities and institutions and local communities.

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

Category	Definition
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.

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	**41 188.00**	–	–	–	–	–	–	**39 620.36**	–	–	**38 972.14**	–	–	–	–	**37 940.00**	**37 628.29**	**37 406.60**

Comments

there is no data available related with forest disturbances

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

FRA geospatial tool Module 3 Burned area

National classification and definitions

Burned area - Area burned per year

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	7 179.19	13 954.36	11 133.55	15 265.38	13 756.04	13 592.21	15 648.77	16 428.22	16 645.71	14 856.10	18 713.79	16 154.38	14 439.53	15 957.25	15 964.18	15 313.32	12 896.78	
…of which on forest	6 647.95	13 109.38	10 398.95	14 640.87	13 080.08	12 913.84	14 860.93	15 474.83	15 668.58	13 968.99	17 386.44	15 058.80	13 541.47	14 858.53	14 544.00	14 103.76	11 999.41	

Comments

5c Degraded forest

Does your country monitor area of degraded forest		No
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	Yes	No
Legislations and regulations supporting SFM	Yes	No
Platform that promotes or allows for stakeholder participation in forest policy development	Yes	Yes
Traceability system(s) for wood products	No	No

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	No					

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				10.00			18.00			14.00	0.55	13.56
…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				0.00	0.00	0.00	0.00					
Master's degree				0.00	0.00	0.00						
Bachelor's degree				2.00	2.00	2.00						
Technician certificate / diploma												
Total				2.00		2.00						

Comments

There is no official information per year related to the graduation of student in forestry

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	Medicinal plants	Julbernardia globiflora, Tamarindus indica, Flacourtia indica, Markhamia obtusifolia, Sclerocarya birrea				13 Raw material for medicine
#2	Raw material for handicrafts	Dalbergia melanoxylon, Berchemia zeyheri, Spirostachys africana, Trichilia emetica, etc.				5 Raw material for utensils handicrafts construction
#3	Raw material for construction	Bamboo, Palm trees				5 Raw material for utensils handicrafts construction
#4	Food	Hyphaene Coriacea, Phoenix reclinata, Sclerocarya birrea, Strychnos madagascariensis, Senna petersiana				1 Food
#5	Honey	Hyphaene Coriacea, Phoenix reclinata, Sclerocarya birrea, Strychnos madagascariensis, Senna petersiana				1 Food
#6	Fodder	Lonchocarpus capassa, Trichilia emetica, setaria sp., Panicum maximum, etc				2 Fodder
#7	Exudates	Ozoroa obovata and Harpagophyton procumbens				7 Exudates

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#8	Aromatic products					3 Raw material for medicine and aromatic products
#9	Ornamental plants					6 Ornamental plants
#10						
All other plant products						
All other animal products						
Total					–	

Name of currency	

Comments

There is no consistent information related to the NWFP quantities in Mozambique.

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	52.38	49.56	48.25	47.85	47.57	47.34	47.01	46.73

Name of agency responsible	DINAF

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	-0.55	-0.54	-0.83	-0.59	-0.49	-0.70	-0.61

Name of agency responsible	DINAF

Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	101.36	101.37	101.37	101.37	101.37	101.37	101.37	101.37

Name of agency responsible	DINAF

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	35.64	33.63	38.16	38.16	38.16	38.16	38.16	40.14

Name of agency responsible	DINAF

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	11.53	20.20	40.69	44.11	49.30	52.81	55.56	58.59

Name of agency responsible	DINAF and

Sub-Indicator 5	Forest area (1000 ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area under independently verified forest management certification schemes	0.00	71.06	59.91	49.13	50.75	50.75	–	–