



**Forestry Department**

**Food and Agriculture Organization of the United Nations**

**GLOBAL FOREST RESOURCES  
ASSESSMENT 2010**

**COUNTRY REPORT**

**Mozambique**

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## The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. This country report forms part of the Global Forest Resources Assessment 2010 (FRA 2010).

The reporting framework for FRA 2010 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes variables related to the extent, condition, uses and values of forest resources, as well as the policy, legal and institutional framework related to forests. More information on the FRA 2010 process and the results - including all the country reports - is available on the FRA Web site ([www.fao.org/forestry/fra](http://www.fao.org/forestry/fra)).

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The Global Forest Resources Assessment Country Report Series is designed to document and make available the information forming the basis for the FRA reports. The Country Reports have been compiled by officially nominated country correspondents in collaboration with FAO staff. Prior to finalisation, these reports were subject to validation by forestry authorities in the respective countries.

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# 1 Table T1 – Extent of Forest and Other wooded land

## 1.1 FRA 2010 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds <i>in situ</i> . It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified as “Forest”, spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds <i>in situ</i> ; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as “Forest” or “Other wooded land”.
Other land with tree cover (Subordinated to “Other land”)	Land classified as “Other land”, spanning more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.

## 1.2 National data

### 1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. Jansen, L et al. 2006. Satellite image interpretation of land-cover types in Manica and Maputo Provinces at nominal scale of 1:250 000 and at National level scale of 1:1000000. DNTF_AIFM, Maputo	H	Land use, forest cover	2005	Visual interpretation of Landsat TM scale 1:1 000 000 with support of field observations
2. Coetzee, H & Alves, T. 2005. National Afforestation Strategy Republic of Mozambique. FAO, UTF/MOZ/074/MOZ Mozambique.	M	Forest plantations	1990-2005	Extensive literature review on forest plantation areas in Mozambique
3. Marzoli, A 2008. Inventário Florestal Nacional	M	Total and commercial growing stock	2005	National forest Inventory, field work data.
4. DNTF, 2006. Relatório Estatístico Anual. Maputo	M	Afforestation areas	2005	Yearly statistical report
5. DNTF, 2009. Relatório Anual 2008. Maputo	M	Afforestation areas	2006-2008	Yearly statistical report

## 1.2.2 Classification and definitions

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 shrublands	Open shrubs on temporarily flooded lands
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 ( <i>Oryza</i> 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)
Shrub crops	This class includes permanently cropped area with rainfed broad-leafed evergreen shrub (height < 5 m) crop(s); dominant crop Beverage-Tea ( <i>Camellia sinensis</i> (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).

### 1.2.3 Original data

Source 1 - 2005 data:

National class	Areas in 1000 hectares Reference year 2005
(Semi)-evergreen dense forests	5516
(Semi)-deciduous dense forests	17003
(Semi)-evergreen open forests	883
(Semi)-deciduous open forests	15507
Thickets (evergreen and (semi)-deciduous))	7605
Shrublands (evergreen and (semi)-deciduous))	802
Grasslands	1093
Forested areas with shifting cultivation	5568
Mangrove	357
Aquatic/regularly flooded shrublands	446
Aquatic/regularly flooded herbaceous vegetation	7191
Cultivated aquatic or regularly flooded areas	2168
Tree crops	3682
Shrub crops	1738
Field crops (generic)	5934
Shifting cultivation with forested areas	15
Built-up areas	850
Bare areas	731
Natural water bodies	31
Artificial water bodies	872
<b>Total</b>	<b>77992</b>

Source 2 – Forest Plantations (1995 to 2005)

Category	Area in hectares		
	1990	2000	2005
Forest Plantations	38000	38000	24000

Source 4& 5 – Afforestation area (2005 to 2008)

Afforestation	2003	2004	2005	2006	2007	2008
Area in ha	0	0	80	4091	6273	8595

### 1.3 Analysis and processing of national data

#### 1.3.1 Calibration

The 2005 data (source 1) have been calibrated to the FAOSTAT land area as follows:

National land area in 1 000 ha	77089
FAOSTAT land area in 1 000ha	78638
Calibrating factor	1.0200937

#### Calibrating the 2005 data (source 1)

National land areas class	Calibrated areas in 1000 ha reference year 2005
(Semi)-evergreen dense forests	5627
(Semi)-deciduous dense forests	17345
(Semi)-evergreen open forests	901
(Semi)-deciduous open forests	15819
Thickets (evergreen and (semi)-deciduous))	7758
Shrublands (evergreen and (semi)-deciduous))	818
Grasslands	1115
Forested areas with shifting cultivation	5680
Mangrove	364
Aquatic/regularly flooded shrublands	455
Aquatic/regularly flooded herbaceous vegetation	7335
Cultivated aquatic or regularly flooded areas	2212
Tree crops	3756
Shrub crops	1773
Field crops (generic)	6053
Shifting cultivation with forested areas	15
Built-up areas	867
Bare areas	746
<b>Total</b>	<b>78638</b>

Regarding the second source, it is assumed that there is no need to calibrate the data.



### 1.3.2 Reclassification into FRA 2010 categories

The 2005 data (source 1)

National land areas class	Forests		OWL	OL
	Natural	Planted		
(Semi)-evergreen dense forests	100.00%			
(Semi)-deciduous dense forests	100.00%			
(Semi)-evergreen open forests	100.00%			
(Semi)-deciduous open forests	100.00%			
Thickets (evergreen and (semi)-deciduous))			100.00%	
Shrublands (evergreen and (semi)-deciduous))			100.00%	
Grasslands				100.00%
Forested areas with shifting cultivation (1)			100.00%	
Mangrove	100.00%			
Aquatic/regularly flooded shrublands			100.00%	
Aquatic/regularly flooded herbaceous vegetation				100.00%
Cultivated aquatic or regularly flooded areas				100.00%
Tree crops (1)		0.64%		99.36%
Shrub crops				100.00%
Field crops (generic)				100.00%
Shifting cultivation with forested areas				100.00%
Built-up areas				100.00%
Bare areas				100.00%

Notes: (1) Forest and shifting cultivation was considered under OWL as the tree covers is constituted by a mixed class of forest and woodlands and no distinction is made from the source;

(2) Considering that “tree crops” class (3 745 000 ha) includes the planted forest (24 000 ha).

#### Results after reclassifying 2005 data (source 1)

National land areas class	Forests		OWL	OL
	Natural	Planted		
(Semi)-evergreen dense forests	5627	0	0	0
(Semi)-deciduous dense forests	17345	0	0	0
(Semi)-evergreen open forests	901	0	0	0
(Semi)-deciduous open forests	15819	0	0	0
Thickets (evergreen and (semi)-deciduous))	0	0	7758	0
Shrublands (evergreen and (semi)-deciduous))	0	0	818	0
Grasslands	0	0	0	1115
Forested areas with shifting cultivation	0	0	5680	0
Mangrove	364	0	0	0
Aquatic/regularly flooded shrublands	0	0	455	0

Aquatic/regularly flooded herbaceous vegetation	0	0	0	7335
Cultivated aquatic or regularly flooded areas	0	0	0	2212
Tree crops	0	24	0	3732
Shrub crops	0	0	0	1773
Field crops (generic)	0	0	0	6053
Shifting cultivation with forested areas	0	0	0	15
Built-up areas	0	0	0	867
Bare areas	0	0	0	746
<b>Total</b>	<b>40055</b>	<b>24</b>	<b>14711</b>	<b>23848</b>

Standard FRA classes (areas in 1000 hectares)

Forests		OWL	OL
Natural	Planted		
40055	24	14711	23848
40079		14711	23848

### 1.3.3 Estimation and forecasting

#### Forest

##### - Natural Forest

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 in deforestation. Thus, using a good correction between population pressure and land cover, it was possible to simulate a deforestation rate of 219 000 ha per year.

In 2005, there is 40 055 000 ha, and knowing that the deforestation rate is 219 000 ha/y, the following table has been established.

Natural Forest	1990	2000	2005	2010
Area in 1000 ha	43340	41150	40055	38960

##### - Planted Forest

In 2005, planted forest is equal to 24000 ha

During the period of 2006 to 2008, total of new plantations was 4 091 ha+ 6 273 ha + 8 595 ha.

Based on expert judgement, it is assumed that a total of 11 174 ha will be planted in 2009 and 14 526 ha in 2010 (an annual increment of 30%).

Meanwhile during 2005 to 2010, the total harvesting of forest plantation is estimated to be equal to 7 000 ha.

Therefore planted forest in 2010 will equal to: (24 000 + 4 091 + 6 273 + 8 595 + 11 174 + 14 526) – 7000 ha = 61 659 ha.

Planted Forest - Year	1990	2000	2005	2010
Area in 1000 ha	38	38	24	62

Then Forest = Natural Forest + Planted forest

**Other Wooded Lands (OWL)**

Based on the Marzoli's model (2007, as above), the OWL decrease was estimated at 29 000 ha per year for other wooded land between 1990-2002. The rate was maintained constant for the entire period of study.

In 2005, there is 14 711 000 ha, and knowing that the OWL decrease is 29 000 ha/y, the following table has been established.

OWL	1990	2000	2005	2010
Area in 1000 ha	15146	14856	14711	14566

**1.4 Data for Table T1**

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	43378	41188	40079	39022
Other wooded land	15146	14856	14711	14566
Other land	20114	22594	23848	25050
...of which with tree cover	n/a	n/a	n/a	n/a
Inland water bodies	1300	1300	1300	1300
<b>TOTAL</b>	<b>79938</b>	<b>79938</b>	<b>79938</b>	<b>79938</b>

**1.5 Comments to Table T1**

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest	This category includes (Semi) - natural dense and open forests and mangrove classes and forest plantation (1% of tree crops) area from the National land-cover map by Jansen et al (2007).	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 in deforestation. Thus, using a good correction between population pressure and land cover, it was possible to simulate a deforestation rate of 219000 ha per year.
Other wooded land	This category includes thickets, shrublands and Forested areas with shifting cultivation classes from the National land-cover types	Using same model of above (Marzoli, 2007). The deforestation was estimated at 29000 ha per year for other wooded land between 1990-2002. The rate was maintained constant for the entire period of study.
Other land	This category includes grasslands, Aquatic/regularly flooded herbaceous vegetation, Shifting cultivation with forested areas, Tree crops, Field crops (generic), Cultivated aquatic or regularly flooded areas, Built-up areas and Bare areas from the National land-cover types	Other land was then adjusted (plus/minus) of forest and other wooded lands gain/lost in a period of time.
Other land with tree cover	This category includes Shifting cultivation with forested areas, Tree crops and shrub crops from the National land-cover types. But original classification and definitions do	No data is available to build the trend on other land with tree cover

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
	not allow assigning data into FRA 2010 categories.	
Inland water bodies	Data on Inland water bodies from FAOSTAT	It was maintained constant

**Other general comments to the table**

Different forest area estimation initiatives in Mozambique provide dissimilar data, misleading discussions on forest changes. Due to the different forest definitions used in subsequent forest inventories, the extent of forest cover has been reported differently in various sources. It is not possible to identify whether this discrepancy is due to real changes or classification errors. The extent of forests cover was estimated of 20 million hectares in 1990 (Saket 1994). However, current estimate of forest cover is 40 million hectares (Marzoli, 2007). Therefore the conversion of FRA 2005 division to current FRA 2010 classification system has been difficult and a clear trend is not observable. Only mangrove forests were continuously assessed by comparing different forest inventories, namely, 1972, 1994 and 2005.

For the present study, the 2005 study is taking as the starting point, because it is recent, and it used the more updated technology (on-screen visual interpretation) for satellite image interpretation allowing a new approach for future land cover change assessments, in which land cover recognizes that changes come in two types: (1) conversion from one category to another; and (2) modification within one category.

Original data of the table is derived by a land-use/cover map produced (at 1: 1 000 000 nominal scale) using visual interpretation of satellite images (LANDSAT 5 TM) of the period 2004/2005. The land cover classification adopted FAO, Land Cover Classification System – LCCS). The land cover map accuracy ranges between 86% to 80% for the main land cover classes and it is greater than 90% for the forest classes. The mapping was also based on extensive field-work in the entire country for control and validation of interpretation.

**Expected year for completion of ongoing/planned national forest inventory and/or RS survey / mapping**

Field inventory	2007
Remote sensing survey / mapping	2007

## 2 Table T2 – Forest ownership and management rights

### 2.1 FRA 2010 Categories and definitions

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

## 2.2 National data

### 2.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
2. Coetzee, H & Alves, T. 2005. National Afforestation Strategy Republic of Mozambique. FAO, UTF/MOZ/074/MOZ Mozambique.	M	Forest plantations	1990-2005	Extensive literature review on forest plantation areas in Mozambique
6. Forest Department, 2007	H	Yearly database on forest concessionaires	1997-2007	Database on forest concession areas

### 2.2.2 Classification and definitions

National class	Definition
Public administration	The Public Administration (or institutions or corporations owned by the Public Administration) retains management rights and responsibilities within the limits specified by the legislation.
Simple licensing	Forest management rights and responsibilities are transferred from the Public Administration only to Mozambican corporations, other business entities, private co-operatives, private non-profit institutions and associations, etc, through short-term (maximum one year) leases or management agreements.
Forest concession	Forest management rights and responsibilities are transferred from the Public Administration to individuals, corporations, other business entities, private co-operatives, private non-profit institutions and associations, etc., through long-term leases or management agreements.
Communities	Forest management rights and responsibilities are transferred from the Public Administration to local communities (including indigenous and tribal communities) through long-term leases or management agreements. Communities might also have customary rights to use and/or manage natural resources in their region of origin.

### 2.2.3 Original data

(Source 2) – Forest Plantations (1995 to 2005)

Category	Area in hectares		
	1990	2000	2005
Forest Plantations	38000	38000	24000

**Source 6 - Forest concessions area (1997-2007): Individuals and private business entities and institutions forest management rights of public forests**

Year	Area (ha)
1997	174375
1999	83909
2000	772721
2001	911057
2002	736237
2003	626829
2004	175776
2005	599962
2006	1415571
2007	629852

average 2000: 535660 ha

average 2000: 689598 ha

Note information for 1998 is unknown; data (1997) will be used instead.

## 2.3 Analysis and processing of national data

### 2.3.1 Calibration

It is assumed that there is no need to calibrate the data.

### 2.3.2 Reclassification into FRA 2010 categories

Considering that forest plantations of public ownership are insignificant (expert knowledge), all forest plantations were considered as privately owned.

## Results for Table 2a – Forest ownership

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public ownership	43340	41150	40055
Private ownership	38	38	24
...of which owned by individuals	n/a	n/a	n/a
...of which owned by private business entities and institutions	n/a	n/a	n/a
...of which owned by local communities	n/a	n/a	n/a
...of which owned by indigenous / tribal communities	n/a	n/a	n/a
Other types of ownership	0	0	0
<b>TOTAL</b>	<b>43378</b>	<b>41188</b>	<b>40079</b>

**Results for Table 2b – Holder of forest management rights of public forests**

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public Administration	43340	40614	39365
Individuals	n/a	n/a	n/a
Private corporations and institutions	0	536	690
Communities	n/a	n/a	n/a
Other	n/a	n/a	n/a
<b>TOTAL</b>	<b>43340</b>	<b>41150</b>	<b>40055</b>

Note:

- The figures for the reporting years refer to the averages of, 1997-2002 and 2003-2007 respectively.
- No distinction is made between individuals and private business entities and institutions regarding forest management rights of public forests in Mozambique. National definition of forest concession holders was considered as Private corporations and institutions.

**2.4 Comments to Table T2**

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Public ownership	All land and natural resources therein (natural forest included) are owned by the state. In the case of forest plantations trees belong to individuals who planted it.	
Private ownership	Only Forest plantations might have Private ownership May include Forest plantations owner by local communities	
Other types of ownership		
Management rights	Referred in the study as entities with legal rights to use/manage forest resources	Communities have started to formalise their management's legal rights from 2002. However, not all communities have their areas gazetted and those areas cannot be reflected in the table.

**Other general comments to the table**

The state owns all the land and natural resources therein. No distinction is made between individuals and private business entities and institutions regarding forest management rights of public forests. 4 National Categories relate the holder of management rights of public forest resources, namely, Public administration, Communities, Simple licensing and Forest concession. National definition of forest concession holders was considered at Private corporations and institutions.



### 3 Table T3 – Forest designation and management

#### 3.1 FRA 2010 Categories and definitions

Term	Definition
Primary designated function	The primary function or management objective assigned to a management unit either by legal prescription, documented decision of the landowner/manager, or evidence provided by documented studies of forest management practices and customary use.
Protected areas	Areas especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.
<b>Categories of primary designated functions</b>	
Production	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Protection of soil and water	Forest area designated primarily for protection of soil and water.
Conservation of biodiversity	Forest area designated primarily for conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas.
Social services	Forest area designated primarily for social services.
Multiple use	Forest area designated primarily for more than one purpose and where none of these alone is considered as the predominant designated function.
Other	Forest areas designated primarily for a function other than production, protection, conservation, social services or multiple use.
No / unknown	No or unknown designation.
<b>Special designation and management categories</b>	
Area of permanent forest estate (PFE)	Forest area that is designated to be retained as forest and may not be converted to other land use.
Forest area within protected areas	Forest area within formally established protected areas independently of the purpose for which the protected areas were established.
Forest area under sustainable forest management	To be defined and documented by the country.
Forest area with management plan	Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, which is periodically revised.

#### 3.2 National data

##### 3.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
(3).Marzoli, A. 2007. Inventario Florestal Nacional. DNTEF, Maputo	H	Forestry zoning	2007	Based on land cover and forest inventory data
(6). Forest Department, 2007	H	Yearly database on forest concessionaires	1997-2007	Database on forest concession areas

### 3.2.2 Classification and definitions

National class	Definition
Productive forest	Forest area with high potential for timber production, located out-side protected areas.
Conservation Forests	Forest area located within the protected areas and are subjected to a special management regime
Multiple use forest	Forest area with low potential for timber production and located out-side protected areas

### 3.2.3 Original data

#### Source 3 - Zoning of Natural Forests

Natural Forest's Zoning	Área in 1000 ha (2005)
Productive forests	26907
Conservation forests	4256
Protection of soil and water	8905
Total Natural forest area	40068

#### Source 6 - Forest area with management plans approved

Year	Forest area with Management plans
2001	107309
2003	398329
2004	90702
2005	389462
2006	125071
2007	1192162

## 3.3 Analysis and processing of national data

### 3.3.1 Calibration

#### - Calibrating the 2005 data (source 3)

	Area in 1000 ha (2005)
Forest Area in 1000 ha (from source 3)	40068
Forest Area in 1000 ha (from T1 FRA2010)	40055
Calibrating factor	0.999676

Calibrating the data

<b>Natural Forest's Zoning</b>	<b>Calibrated areas in 1000 ha reference year 2005</b>
Productive Forests	26898
Conservation Forests	4255
Protection of soil and water	8902
Total Natural forest area	40055

- For source 6, it is assumed that there is no need to calibrate the data.

### 3.3.2 Reclassification into FRA 2010 categories

<b>FRA 2010 Categories</b>	<b>Production</b>		<b>Sub-Total</b>
	<b>Natural Forests</b>	<b>Planted forest</b>	
Production	26898	24	26922
Protection of soil and water	8902	0	8902
Conservation of biodiversity	4255	0	4255
Social services	0	0	0
Multiple use	0	0	0
Other (please specify in comments below the table)	0	0	0
No/unknown	0	0	0
<b>TOTAL</b>	40055	24	40079

### 3.3.3 Estimation and forecasting

Based on the total forest area for the period (1990, 2000, 2005 and 2010) from Table 1 and data on natural forest's zoning (2005), the data for table 3a was calculated considering that the percentage of area for production (67%), protection of soil and water (22%) and conservation biodiversity (11%) in 2005 is constant for all period of the study.

For table 3b, data on Forest area with management plan was obtained  
 for 1009, no data available;  
 for 2000, considering the figure of 2001;  
 for 2005, average of the period 2005 to 2007, which is 568 898 ha  
 for 2010 was calculated assuming a constant increment of forest area with management plans of 332 000 ha (expert's point of view).

Data on Forest area under sustainable forest management are based on expert knowledge on the Certification process in the country.

### 3.4 Data for Table T3

**Table 3a – Primary designated function**

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production	29138	27667	26922	26212
Protection of soil and water	9635	9148	8902	8667
Conservation of biodiversity	4605	4373	4255	4143
Social services	0	0	0	0
Multiple use	0	0	0	0
Other (please specify in comments below the table)	0	0	0	0
No/unknown	0	0	0	0
<b>TOTAL</b>	<b>43378</b>	<b>41188</b>	<b>40079</b>	<b>39022</b>

**Table 3b – Special designation and management categories**

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Area of permanent forest estate	n/a	n/a	n/a	n/a
Forest area within protected areas	4605	4373	4255	4143
Forest area under sustainable forest management	0	0	71	121
Forest area with management plan	0	107	569	901

### 3.5 Comments to Table T3

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Production	Forest area suitable for timber production (this include natural forests and forest plantations)	
Protection of soil and water	Forest area designated for soil and water protection	
Conservation of biodiversity	Forest area within protected areas	
Social services	Not Applicable	
Multiple use	Defined as other woodlands from the national land cover classification	
Other		
No / unknown designation		
Area of permanent forest estate		
Forest area within protected areas	Also known as conservation forest	
Forest area under sustainable forest management	Certified Forest concession area	
Forest area with management plan	Forest area with management plans approved	

**Other general comments to the table**

There were no forest concessions before the reference year 2000. Forest area under sustainable forest management was defined for the purpose of this report as Certified Forest area.

## 4 Table T4 – Forest characteristics

### 4.1 FRA 2010 Categories 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 <u>outside</u> 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).
<b>Characteristics categories</b>	
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 ( <i>sub-category</i> )	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 ( <i>sub-category</i> )	Planted forest, where the planted/seeded trees are predominantly of introduced species.
<b>Special categories</b>	
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.

### 4.2 National data

#### 4.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
(3). Marzoli 2007. Inventario Florestal Nacional. AIFM. DNTF, Maputo.	H	Mangrove and deforestation rates	2005	

#### 4.2.2 Classification and definitions

National class	Definition
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
Mangroves	Area of forest and other wooded land with mangrove vegetation.

### 4.2.3 Original data

- From table T1

Planted Forest - Year	1990	2000	2005	2010
Area in 1000 ha	38	38	24	62

- Source 3 - Mangrove area 1972, 1990, 2005 data:

National class	Area (1000 hectares)		
	1972	1990	2005
Mangroves	408	396	357

## 4.3 Analysis and processing of national data

### 4.3.1 Calibration

The 2005 mangrove area (source 3)

	Area in 1000 ha (2005)
Mangrove Area in 1000 ha (from source 3)	357
Mangrove Area in 1000 ha (from T1 FRA2010)	364
Calibrating factor	1.019608

Calibrated National class	Area (1000 hectares)		
	1972	1990	2005
Mangroves	416	404	364

### 4.3.2 Estimation and forecasting

It is assumed that the mangrove deforestation rate from 1990 to 2010 will remain equal to the period 1990 to 2005, which is 2 666 ha/y.

National class	Area (1000 hectares)				
	1972	1990	2000	2005	2010
Mangroves	416	404	377	364	351

#### 4.4 Data for Table T4

**Table 4a**

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest	0	0	0	0
Other naturally regenerated forest	43340	41150	40055	38960
...of which of introduced species	0	0	0	0
Planted forest	38	38	24	62
...of which of introduced species	38	38	24	62
<b>TOTAL</b>	<b>43378</b>	<b>41188</b>	<b>40079</b>	<b>39022</b>

**Table 4b**

FRA 2010 Categories	Area (1000 hectares)			
	1990	2000	2005	2010
Rubber plantations (Forest)	0	0	0	0
Mangroves (Forest and OWL)	404	377	364	351
Bamboo (Forest and OWL)	n/a	n/a	n/a	n/a

#### 4.5 Comments to Table T4

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Primary forest	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”.	
Other naturally regenerating forest		
Planted forest	All planted forest are of introduced species, mainly from Eucalyptus and Pinus	
Rubber plantations	Not applicable	
Mangroves		It is assumed that the mangrove deforestation rate from 2005 to 2010 will remain equal to the period 1990 to 2005, which is 2644 ha/y.
Bamboo	Data not available	

#### Other general comments to the table

Data on planted and mangrove forest are based on reference 2 and 3 respectively.



## 5 Table T5 – Forest establishment and reforestation

### 5.1 FRA 2010 Categories and definitions

Term	Definition
Afforestation	Establishment of forest through planting and/or deliberate seeding on land that, until then, was not classified as forest.
Reforestation	Re-establishment of forest through planting and/or deliberate seeding on land classified as forest.
Natural expansion of forest	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).

### 5.2 National data

#### 5.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
(5). DNTF, 2006. Relatório Estatístico Anual. Maputo	M	Afforestation areas	2005	Yearly statistical report
(6).DNTF, 2009. Relatório Anual 2008. Maputo	M	Afforestation areas	2006-2008	Yearly statistical report

#### 5.2.2 Original data

##### Source 4& 5 – Afforestation area (2005 to 2008)

Afforestation	2003	2004	2005	2006	2007	2008
Area in ha	0	0	80	4091	6273	8595

### 5.3 Analysis and processing of national data

#### 5.3.1 Calibration

It is assumed that there is no need to calibrate the data.

#### 5.3.2 Reclassification into FRA 2010 categories

No significant afforestation activities took place before 2005. Figures for the reporting period (2005) refer to the averages for 3 years from sources 4 & 5 (2005-2007).

#### 5.4 Data for Table T5

FRA 2010 Categories	Annual forest establishment (hectares/year)			...of which of introduced species (hectares/year)		
	1990	2000	2005	1990	2000	2005
Afforestation	n/a	n/a	3481	n/a	n/a	3481
Reforestation	0	0	0	0	0	0
...of which on areas previously planted	0	0	0	0	0	0
Natural expansion of forest	n/a	n/a	n/a	n/a	n/a	n/a

Note: All afforestation areas are from introduced species.

#### 5.5 Comments to Table T5

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Afforestation		No significant afforestation activities took place before 2005. Figures for the reporting period (2005) refer to the averages for 3 years from sources 4 & 5 (2005-2007).
Reforestation	Data not available. It seems that no significant reforestation activities took place before 2005.	
Natural expansion of forest	Data not available	

#### Other general comments to the table

No significant afforestation activities took place before 2005. The figures for the reporting period refer to the averages for 3 year 2005-2007. All afforestation area from introduced species.

## 6 Table T6 – Growing stock

### 6.1 FRA 2010 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.
Growing stock of commercial species	Growing stock (see def. above) of commercial species.

### 6.2 National data

#### 6.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
(3).Marzoli, A. 2007. Inventario Florestal Nacional. AIFM. DNTF, Maputo.	H	Total and commercial growing stock	2005	Based on intensive field work covering the entire country

#### 6.2.2 Classification and definitions

National class	Definition
Dense Forest	See definition in table T1
Open Forest	See definition in table T1
Thicket/shrublands	See definition in table T1
Forest with shifting cultivation	See definition in table T1

#### 6.2.3 Original data

- Source 3- Growing stock (Natural Forests)

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
<b>Total Forests</b>	<b>36.2</b>	<b>5.0</b>
Thicket/shrublands	18.8	3.8
Forest with shifting cultivation	20.6	3.4
<b>Total OWL</b>	<b>19.7</b>	<b>3.6</b>

Based on expert judgement, for the Growing Stock of forest plantations it was assumed an average of 150 m<sup>3</sup>/ha.

Data from Table 1

FRA Categories	Area (1000 hectares)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Natural area	43340	41150	40055	38960	15146	14856	14711	14566
Planted area	38	38	24	62	0	0	0	0
<b>TOTAL</b>	<b>43378</b>	<b>41188</b>	<b>40079</b>	<b>39022</b>	<b>15146</b>	<b>14856</b>	<b>14711</b>	<b>14566</b>

### 6.3 Analysis and processing of national data

#### 6.3.1 Calibration

It is assumed that there is no need to calibrate the data.

#### 6.3.2 Estimation and forecasting

Calculating growing stock for forest and other wooded land

Calculating growing stock for modified forests and plantation by multiplying by their respective average volume per hectare gives:

#### Total growing stock

FRA Categories	Area (1000 hectares)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Natural area (1000 ha)	43340	41150	40055	38960	15146	14856	14711	14566
Volume per ha	36.2	36.2	36.2	36.2	19.7	19.7	19.7	19.7
<b>Total Growing Stock - Natural area (1000 m<sup>3</sup>)</b>	<b>1568908</b>	<b>1489630</b>	<b>1449991</b>	<b>1410352</b>	<b>298376</b>	<b>292663</b>	<b>289807</b>	<b>286950</b>
Planted area (1000 ha)	38	38	24	62	0	0	0	0
Volume per ha	150	150	150	150				
<b>Total Growing Stock - Planted area (1000 m<sup>3</sup>)</b>	<b>5700</b>	<b>5700</b>	<b>3600</b>	<b>9300</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Grand total Growing Stock (1000 m<sup>3</sup>)</b>	<b>1574608</b>	<b>1495330</b>	<b>1453591</b>	<b>1419652</b>	<b>298376</b>	<b>292663</b>	<b>289807</b>	<b>286950</b>

## Growing stock of commercial species

FRA Categories	Area (1000 hectares)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Natural area	43340	41150	40055	38960	15146	14856	14711	14566
Volume per ha	5.0	5.0	5.0	5.0	3.6	3.6	3.6	3.6
<b>Total growing stock natural area (1000 m3)</b>	<b>216700</b>	<b>205750</b>	<b>200275</b>	<b>194800</b>	<b>54526</b>	<b>53482</b>	<b>52960</b>	<b>52438</b>
Planted area	38	38	24	62	0	0	0	0
Volume per ha	150	150	150	150				
<b>Total growing stock planted area (1000 m3)</b>	<b>5700</b>	<b>5700</b>	<b>3600</b>	<b>9300</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Grand total growing stock (1000 m3)</b>	<b>222400</b>	<b>211450</b>	<b>203875</b>	<b>204100</b>	<b>54526</b>	<b>53482</b>	<b>52960</b>	<b>52438</b>

Note : Considering total forest plantations are growing commercial species

## 6.4 Data for Table T6

Table 6a – Growing stock

FRA 2010 category	Volume (million cubic meters over bark)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Total growing stock	1575	1495	1454	1420	298	292	290	287
... of which coniferous	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... of which broadleaved	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Growing stock of commercial species	222	211	204	204	54	53	53	52

Table 6b – Growing stock of the 10 most common species

FRA 2010 category / Species name			Growing stock in forest		
			(million cubic meters)		
Rank	Scientific name	Common name	1990	2000	2005
1 <sup>st</sup>	<i>Brachystegia spiciformis</i>	Messassa	n/a	n/a	208
2 <sup>nd</sup>	<i>Brachystegia boehmii</i>	Mafuti	n/a	n/a	177
3 <sup>rd</sup>	<i>Julbernardia globiflora</i>	Messassa encarnada	n/a	n/a	140
4 <sup>th</sup>	<i>Colophospermum mopane</i>	Mopane	n/a	n/a	69
5 <sup>th</sup>	<i>Pterocarpus angolensis</i>	Umbila	n/a	n/a	63
6 <sup>th</sup>	<i>Millettia stuhlmannii</i>	Jambirre	n/a	n/a	53
7 <sup>th</sup>	<i>Sclerocarya birrea</i>	Canho	n/a	n/a	50
8 <sup>th</sup>	<i>Pseudolachnostylis maprouneifolia</i>		n/a	n/a	39
9 <sup>th</sup>	<i>Uapaca kirkiana</i>	Metongoro	n/a	n/a	36
10 <sup>th</sup>	<i>Burkea africana</i>	Mucarala	n/a	n/a	34

Remaining			n/a	n/a	585
<b>TOTAL</b>			<b>1575</b>	<b>1495</b>	<b>1454</b>

**Table 6c – Specification of threshold values**

Item	Value	Complementary information
Minimum diameter (cm) at breast height of trees included in growing stock (X)	10	Diameter at breast height (DBH) refers to diameter over bark measured at a height of 1.30 m above ground level or 30 cm above buttresses if these are higher than 1 m (Source 3).
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	-	
Minimum diameter (cm) of branches included in growing stock (W)	10	
Volume refers to “above ground” (AG) or “above stump” (AS)	AG	

## 6.5 Comments to Table T6

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total growing stock	Growing stock calculated based on the average growing stock for natural forests (36.2 m <sup>3</sup> /ha) and other wooded land (19.7 m <sup>3</sup> /ha) from reference; and forest plantations (150 m <sup>3</sup> /ha) based on expert judgement.	
Growing stock of broadleaved / coniferous	Data not available	
Growing stock of commercial species	Growing stock of commercial species calculated based on the average growing stock for natural forests (5.0 m <sup>3</sup> /ha) and other wooded land (3.6 m <sup>3</sup> /ha) from reference 3; and forest plantations (150 m <sup>3</sup> /ha) based on expert judgement	
Growing stock composition	No data to specify the growing stock composition between broad-leafed and coniferous	

Other general comments to the table

## 7 Table T7 – Biomass stock

### 7.1 FRA 2010 Categories and definitions

Category	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass	All biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood	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.

### 7.2 National data

#### 7.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
7. 2006 IPCC guidelines for National Greenhouse Gas Inventories. Volume 4, chapters 2 and 4.	L	Default values and conversion factors for estimating biomass and carbon		Defaults values referred to Tropical dry forests (in African)

#### 7.2.2 Original data

##### Data from T6: Total growing stock

	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Grand total Growing Stock (Mm <sup>3</sup> )	1575	1495	1454	1420	298	292	290	287

Default values and conversion factors for estimating biomass and carbon (2006 IPCC guidelines for National Greenhouse Gas Inventories).

	Default Value Forest	Default Value OWL
BCEFs	1.9	5
R	0.28	0.28

Considering hardwood and subtropical dry climatic zone

### 7.3 Analysis and processing of national data

#### 7.3.1 Calibration

It is assumed that there is no need to calibrate the data.

#### 7.3.2 Estimation and forecasting

	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Growing Stock (Mm3)	1575	1495	1454	1420	298	292	290	287
BCEFs	1.9	1.9	1.9	1.9	5	5	5	5
Above ground biomass	2992.5	2840.5	2762.6	2698.0	1490.0	1460.0	1450.0	1435.0
R	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Below-grow biomass	837.9	795.34	773.528	755.44	417.2	408.8	406	401.8

### 7.4 Data for Table T7

FRA 2010 category	Biomass (million metric tonnes oven-dry weight)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Above-ground biomass	2993	2841	2763	2698	1490	1460	1450	1435
Below-ground biomass	838	795	774	755	417	409	406	402
Dead wood	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>TOTAL</b>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

### 7.5 Comments to Table T7

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Above-ground biomass	Growing stock from Table 6 times BCEF=1.9 (forest) and BCEF=5 (OWL), default values given by IPCC guidelines for hardwood in sub-tropical dry forests zone	Data based on table 6
Below-ground biomass	Above-ground from above times R = 0.28 (default value given by IPCC guidelines for sub-tropical dry forests)	Data based on table 6
Dead wood	Data not available	

Other general comments to the table
<p>Above-ground biomass and Below-ground biomass estimated by the following equations</p> <p>AGB = GS*BCEFs Where:</p> <ul style="list-style-type: none"> <li>GS - Taken from Table 6</li> <li>BCEFs (based on 2006 IPCC guidelines values for hardwood sub-tropical dry forests)</li> </ul> <p>BGB = AGB*R</p> <ul style="list-style-type: none"> <li>R (based on 2006 IPCC guidelines values for sub-tropical dry forests)</li> </ul>



## 8 Table T8 – Carbon stock

### 8.1 FRA 2010 Categories and definitions

Category	Definition
Carbon in above-ground biomass	Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all 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 specified depth chosen by the country and applied consistently through the time series.

### 8.2 National data

#### 8.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
(7). 2006 IPCC guidelines for National Greenhouse Gas Inventories. Volume 4, chapters 2 and 4.	L	Default values and conversion factors for estimating biomass and carbon		Defaults values referred to Tropical dry forests (in African)
8. INIA. 1997. Legenda da Carta Nacional de solos, Escala 1:1000 000.	H	Soil types (definitions and area)	1997	Remote sensing analysis with field work covering entire country during the mapping process

#### 8.2.2 Original data

##### Data from T1: Total Forest area

	Area (1000 hectares)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
<b>TOTAL</b>	43378	41188	40079	39022	15146	14856	14711	14566

**Data from T7: Total Biomass**

Biomass (million metric tonnes)	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Above ground biomass	2993	2841	2763	2698	1490	1460	1450	1435
Below-grow biomass	838	795	774	755	417	409	406	402

Source 7: Default values and conversion factors for estimating carbon

Carbon content	Default Value
Carbon fraction (t C/d.m)	0.49
Carbon content in litter (t C/ha)	2.1
Carbon content in soil (t C/ha)	31

Considering subtropical broadleaf deciduous forest and sandy soils and trees  $d \geq 10$  cm

### 8.3 Analysis and processing of national data

#### 8.3.1 Calibration

It is assumed that there is no need to calibrate the data

#### 8.3.2 Estimation and forecasting

- Carbon in the above-ground biomass and the below ground biomass

Carbon (million metric tonnes)	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Above ground biomass	1467	1392	1354	1322	730	715	711	703
Below-grow biomass	411	390	379	370	204	200	199	197

- Carbon in the litter and in the soil

Carbon (million metric tonnes)	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Carbon content in litter (t C/ha)	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Carbon in litter	91.094	86.495	84.166	81.946	31.807	31.198	30.893	30.589
Carbon content in soil (t C/ha)	31	31	31	31	31	31	31	31
Carbon in soil	1344.718	1276.828	1242.449	1209.682	469.526	460.536	456.041	451.546

#### 8.4 Data for Table T8

FRA 2010 Category	Carbon (Million metric tonnes)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Carbon in above-ground biomass	1467	1392	1354	1322	730	715	711	703
Carbon in below-ground biomass	411	390	379	370	204	200	199	197
<b>Sub-total: Living biomass</b>	<b>1878</b>	<b>1782</b>	<b>1733</b>	<b>1692</b>	<b>934</b>	<b>915</b>	<b>910</b>	<b>900</b>
Carbon in dead wood	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Carbon in litter	91	86	84	82	32	31	31	31
<b>Sub-total: Dead wood and litter</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
Soil carbon	1345	1277	1242	1210	470	461	456	452
<b>TOTAL</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
Soil depth (cm) used for soil carbon estimates				30				

#### 8.5 Comments to Table T8

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Carbon in above-ground biomass	Above-ground biomass from Table 7 times carbon fraction =0.49 (default value given by IPCC guidelines for tropical dry forests)	Data based on table 7
Carbon in below-ground biomass	Below-ground biomass from Table 7 times carbon fraction =0.49 (default value given by IPCC guidelines for tropical dry forests)	Data based on table 7
Carbon in dead wood	Data not available	
Carbon in litter	Forest area from Table 1, carbon in litter = 2.1, assuming tropical climate broadleaf (default value given by IPCC guidelines for tropical dry forests)	
Soil carbon	Forest area from Table 1 carbon content in soil = 31, assuming sandy soils (default value given by IPCC guidelines for tropical dry forests)	Data based on table 1

Other general comments to the table

## 9 Table T9 – Forest fires

### 9.1 FRA 2010 Categories and definitions

Category	Definition
Number of fires	Average number of vegetation fires per year in the country.
Area affected by fire	Average area affected by vegetation fires per year in the country.
Vegetation fire (supplementary term)	Any vegetation fire regardless of ignition source, damage or benefit.
Wildfire	Any unplanned and/or uncontrolled vegetation fire.
Planned fire	A vegetation fire regardless of ignition source that burns according to management objectives and requires limited or no suppression action.

### 9.2 National data

#### 9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
9. Taquidir, M. 1995.	M	Area burnt	1994	One year assessment of the wildfire through satellite image
10. Zucule, J. 2003. Quantificação de queimadas e incendios florestais em Moçambique usando Imagens satélite. Trabalho de Licenciatura. UEM, Maputo.	H	Area burnt	2000-2003	Assessment of Forest fires through Satellite image.
11. MODIS Data 2002-2005	H	Number of fires	2002-2005	

#### 9.2.2 Original data

References 9: Mean burnt areas (1982-1992) is 5 530 951 ha

Reference 10: Total burnt area (2000, 2001 and 2002)

Year	2000	2001	2002
Total burnt area (ha)	7180600	8812300	1622300

Reference 11: Number of fires

Year	Fire Events
2001	28855
2002	73186
2003	143153
2004	109783
2005	158070
2006	133033
2007	150239

### 9.3 Analysis and processing of national data

#### 9.3.1 Calibration

It is assumed there is no need to calibrate the data

#### 9.3.2 Estimation and forecasting

- For the total area affected by fires

Year	1990	2000*	2005
Total area affected by fires (1000 ha)	5531	5872	n/a

\*Note: for 2000, average of the original data for period from 2000 to 2002.

- For the Forest area affected by fires

Assuming 28% of fires are in forest areas (expert judgement)

Year	1990	2000	2005
Forest area affected by fires (1000 ha)	1549	1644	n/a

For the number of fires

for 1990, no data available;

for 2000, average of the period 2001 and 2002;

for 2005, average of the period 2005 to 2007.

Year	1990	2000	2005
Number of fires	n/a	51021	138856

### 9.4 Data for Table T9

Table 9a

FRA 2010 category	Annual average for 5-year period					
	1990		2000		2005	
	1000 hectares	number of fires	1000 hectares	number of fires	1000 hectares	number of fires
Total land area affected by fire	5531	n/a	5872	51021	n/a	138856
... of which on forest	1549	n/a	1644	n/a	n/a	n/a
... of which on other wooded land	n/a	n/a	n/a	n/a	n/a	n/a
... of which on other land	n/a	n/a	n/a	n/a	n/a	n/a

**Table 9b**

FRA 2010 category	Proportion of forest area affected by fire (%)		
	1990	2000	2005
Wildfire	100%	100%	100%
Planned fire	0%	0%	0%

**9.5 Comments to Table T9**

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Area affected by fire	1990 reporting data gathered from Landsat images recorded in 1989-92 and 2000 2005 reporting data gathered from MODIS images from 2000-2002. No data are available for the 2005 reporting year.	A clear trend is not observable.
Number of fires	Data on number of fires represents Fire Events 2002 - 2007 based on Aqua - Terra MODIS	No data available before 2001
Wildfire / planned fire	It is assumed that forest fires are almost exclusively wildfires, but no data are available.	

Other general comments to the table

## **10 Table T10 – Other disturbances affecting forest health and vitality**

No data is available for this table.

## 11 Table T11 – Wood removals and value of removals

### 11.1 FRA 2010 Categories and definitions

Category	Definition
Industrial roundwood removals	The wood removed (volume of roundwood over bark) for production of goods and services other than energy production (woodfuel).
Woodfuel removals	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

### 11.2 National data

#### 11.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
12. FAOSTAT 2008. FAO Statistics Division 2008	L	Removals of Roundwood and Fuelwood	1988-2006	

#### 11.2.2 Original data

Reference 12: Removals of Roundwood and Fuelwood (1988-2006)

Year	Production (1000 m3 under bark)	
	Industrial Roundwood	Fuelwood
1988	905	14422
1989	904	14641
1990	923	14825
1991	952	15079
1992	967	15398
1998	1294	16724
1999	1319	16724
2000	1319	16724
2001	1319	16724
2002	1319	16724
2003	1319	16724
2004	1314	16724
2005	1304	16724
2006	1304	16724



### 11.3 Analysis and processing of national data

#### 11.3.1 Calibration

It is assumed that there is no need to calibrate the data.

#### 11.3.2 Estimation and forecasting

- Total volume (1000 m<sup>3</sup> u.b.)

FRA 2010 Category	Industrial roundwood removals			Woodfuel removals		
	1990	2000	2005	1990	2000	2005
Total volume (1000 m <sup>3</sup> u.b.)	930	1314	1310	14873	16724	16724

Total volume (1000 m<sup>3</sup> o.b.)

The global default conversion factor of 1.15 was used for converting volume under bark to volume over bark

FRA 2010 Category	Industrial roundwood removals			Woodfuel removals		
	1990	2000	2005	1990	2000	2005
Total volume (1000 m <sup>3</sup> o.b.)	1070	1511	1507	17104	19233	19233

Figures for the reporting years refer to the averages of annually affected areas for the 5-year periods 1988-1992, 1998-2002 and 2003-2007 respectively.

- Unit value (local currency / m<sup>3</sup> o.b.) in 2005

Considering the mean value 4 000 MT (local currency) correspondent to the market value of the wood at the border of the forest.

#### 11.4 Data for Table T11

FRA 2010 Category	Industrial roundwood removals			Woodfuel removals		
	1990	2000	2005	1990	2000	2005
Total volume (1000 m <sup>3</sup> o.b.)	1070	1511	1507	17104	19233	19233
... of which from forest	n/a	n/a	n/a	n/a	n/a	n/a
Unit value (local currency / m <sup>3</sup> o.b.)	n/a	n/a	4000	n/a	n/a	n/a
Total value (1000 local currency)	n/a	n/a	6028000	n/a	n/a	n/a

	1990	2000	2005
Name of local currency	Meticais (MT)	Meticais (MT)	Meticais (MT)

**11.5 Comments to Table T11**

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total volume of industrial roundwood removals		
Total volume of woodfuel removals		
Unit value		
Total value		

**Other general comments to the table**

National data on roundwood and woodfuel removals are available but its accuracy and consistency is not known. Thus, FAOSTAT data was preferred due to its internal consistency.

## 12 Table T12 – Non-wood forest products removals and value of removals

### 12.1 FRA 2010 Categories and definitions

Term	Definition
Non-wood forest product (NWFP)	Goods derived from forests that are tangible and physical objects of biological origin other than wood.
Value of NWFP removals	For the purpose of this table, value is defined as the market value at the site of collection or forest border.

### NWFP categories

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

### 12.2 National data

#### 12.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
13. Albano, G & Nhamirre, G., 2007. PFNM Utilização e potencial para desenvolvimento em Moçambique. DNTF-AIFM, Maputo	M	Non wood Forest Products, potential and uses	2005	

## 12.3 Data for Table T12

Rank	Name of product	Key species	Unit	NWFP removals 2005		NWFP category
				Quantity	Value (1000 local currency)	
1 <sup>st</sup>	Medicinal plants	<i>Julbernardia globiflora</i> , <i>Tamarindus indica</i> , <i>Flacourtia indica</i> , <i>Markhamia obtusifolia</i> , <i>Sclerocarya birrea</i>	n/a	n/a	n/a	5
2 <sup>nd</sup>	Raw material for handicrafts	<i>Dalbergia melanoxylon</i> , <i>Berchemia zeyheri</i> , <i>Spirostachys africana</i> , <i>Trichilia emetica</i> , etc.	n/a	n/a	n/a	5
3 <sup>rd</sup>	Raw material for construction	<i>Bamboo</i> , <i>Palm trees</i>	n/a	n/a	n/a	5
4 <sup>th</sup>	Food	<i>Hyphaene Coriacea</i> , <i>Phoenix reclinata</i> , <i>Sclerocarya birrea</i> , <i>Strychnos madagascariensis</i> , <i>Senna petersiana</i>	n/a	n/a	n/a	1
5 <sup>th</sup>	Fodder	<i>Lonchocarpus capassa</i> , <i>Trichilia emetica</i> , <i>setaria sp.</i> , <i>Panicum maximum</i> , etc	n/a	n/a	n/a	2
6 <sup>th</sup>	Exudates	<i>Ozoroa obovata</i> and <i>Harpagophyton procumbens</i>	n/a	n/a	n/a	7
7 <sup>th</sup>	Aromatic products		n/a	n/a	n/a	3
8 <sup>th</sup>	Ornamental plants		n/a	n/a	n/a	6
9 <sup>th</sup>						
10 <sup>th</sup>						
All other plant products					n/a	
All other animal products					n/a	
<b>TOTAL</b>					n/a	

	2005
Name of local currency	Meticais (MT)

## 12.4 Comments to Table T12

Variable / category	Comments related to data, definitions, etc.
10 most important products	Data on plant products are based on a study conducted at national level.
Other plant products	
Other animal products	
Value by product	Not available
Total value	Not available

Other general comments to the table
Data on NWFP removals in Mozambique are rare and when available they are dispersed. The more updated National study on NWFP was conducted in 2007 (Albano, G & Nhamirre, G., 2007). According to the report NWFP market is precarious in Mozambique, except for medicinal plants and handcraft material which have an established trade system. Ranking of the product categories were give based on the above study. However, no data on the local value was available.

## **13 Table T13 – Employment**

No data is available for this table.

## 14 Table T14 – Policy and legal framework

### 14.1 FRA 2010 Categories and definitions

Term	Definition
Forest policy	A set of orientations and principles of actions adopted by public authorities in harmony with national socio-economic and environmental policies in a given country to guide future decisions in relation to the management, use and conservation of forest and tree resources for the benefit of society.
Forest policy statement	A document that describes the objectives, priorities and means for implementation of the forest policy.
National forest programme (nfp)	A generic expression that refers to a wide range of approaches towards forest policy formulation, planning and implementation at national and sub-national levels. The national forest programme provides a framework and guidance for country-driven forest sector development with participation of all stakeholders and in consistence with policies of other sectors and international policies.
Law (Act or Code) on forest	A set of rules enacted by the legislative authority of a country regulating the access, management, conservation and use of forest resources.

### 14.2 National data

#### 14.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
14. Issufo, A. 2007. nfp-updated; Mozambique.	H	Forest policy	updated	

### 14.3 Data for Table T14

Indicate the existence of the following (2008)				
<b>Forest policy statement with national scope</b>	<input checked="" type="checkbox"/>	Yes		
	<input type="checkbox"/>	No		
If Yes above, provide:	Year of endorsement	1999		
	Reference to document	Forest and Wildlife Act, No. 10/99		
<b>National forest programme (nfp)</b>	<input checked="" type="checkbox"/>	Yes		
	<input type="checkbox"/>	No		
If Yes above, provide:	Name of nfp in country	National Forest and wildlife Programme		
	Starting year	1998		
	Current status	<input type="checkbox"/>	In formulation	
		<input type="checkbox"/>	In implementation	
		<input checked="" type="checkbox"/>	Under revision	
<input type="checkbox"/>		Process temporarily suspended		
Reference to document or web site	The draft of the nfp doc is available but not on the web			
<b>Law (Act or Code) on forest with national scope</b>	<input checked="" type="checkbox"/>	Yes, specific forest law exists		

		Yes, but rules on forests are incorporated in other (broader) legislation
		No, forest issues are not regulated by national legislation
If Yes above, provide:	Year of enactment	1999
	Year of latest amendment	
	Reference to document	Forest and Wildlife Act, No. 10/99

**In case the responsibility for forest policy- and/or forest law-making is decentralized, please indicate the existence of the following and explain in the comments below the table how the responsibility for forest policy- and law-making is organized in your country.**

<b>Sub-national forest policy statements</b>	<input type="checkbox"/>	Yes
	<input type="checkbox"/>	No
If Yes above, indicate the number of regions/states/provinces with forest policy statements		
<b>Sub-national Laws (Acts or Codes) on forest</b>	<input type="checkbox"/>	Yes
	<input type="checkbox"/>	No
If Yes above, indicate the number of regions/states/provinces with Laws on forests		

#### 14.4 Comments to Table T14

Variable / category	Comments related to data, definitions, etc.
Forest policy statement with national scope	
National forest programme (nfp)	
Law (Act or Code) on forest with national scope	
Sub-national forest policy statements	
Sub-national Laws (Acts or Codes) on forest	

<b>Other general comments to the table</b>



## 15 Table T15 – Institutional framework

### 15.1 FRA 2010 Categories and definitions

Term	Definition
Minister responsible for forest policy-making	Minister holding the main responsibility for forest issues and the formulation of the forest policy.
Head of Forestry	The Head of Forestry is the Government Officer responsible for implementing the mandate of the public administration related to forests.
Level of subordination	Number of administrative levels between the Head of Forestry and the Minister.
University degree	Qualification provided by University after a minimum of 3 years of post secondary education.

### 15.2 National data

#### 15.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable (s)	Year(s)	Additional comments
15 Human Resources Department, National Directorate of Lands and Forestry, Ministry of Agriculture.	M	Staff	2009	Data provided by the Human Resources Department

### 15.3 Data for Table T15

Table 15a – Institutions

FRA 2010 Category	2008
Minister responsible for forest policy formulation : please provide full title	Minister of Agriculture Mr. Soares Nhaca
Level of subordination of Head of Forestry within the Ministry	1 <sup>st</sup> level subordination to Minister
	X 2 <sup>nd</sup> level subordination to Minister
	3 <sup>rd</sup> level subordination to Minister
	4 <sup>th</sup> or lower level subordination to Minister
Other public forest agencies at national level	Ministry of Tourism through the recently created National Directorate for Conservation Areas (DNAC) Ministry for Coordination of Environmental Affairs – MICOA Ministry of Energy
Institution(s) responsible for forest law enforcement	The National Directorate of Land and Forest under the Ministry of Agriculture, is responsible for forest law enforcement in activities outside protected areas or multiple use areas. The recently created National Directorate for Conservation Areas (DNAC), under the Ministry of Tourism, is responsible for forest law enforcement in Protected Areas, including hunting concessions.

**Table 15b – Human resources**

FRA 2010 Category	Human resources within public forest institutions					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Total staff	88	n/a	96	n/a	128	n/a
...of which with university degree or equivalent	22	n/a	22	n/a	49	n/a

Source: Data provided by the Human Resources Department, National Directorate of Lands and Forestry, Ministry of Agriculture, March 2009.

Notes: Includes human resources within public forest institutions at national level only

#### 15.4 Comments to Table T15

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Minister responsible for forest policy formulation		
Level of subordination of Head of Forestry within the Ministry		
Other public forest agencies at national level		
Institution(s) responsible for forest law enforcement		
Human resources within public forest institutions	Data on table 15 Referred only to human resources at National Directorate of Lands and Forests at head quarter. Data from other levels and institution were not available or with low quality	It shows an increase in human resources in the latest year (2008). This is due to new institutional arrangement from 2005, where the Forest and wildlife Directorate were aggregated to Land and Forest.

#### Other general comments to the table

Data on human resources is very generic and it only represents data from one institution.

## 16 Table T16 – Education and research

### 16.1 FRA 2010 Categories and definitions

Term	Definition
Forest-related education	Post-secondary education programme with focus on forests and related subjects.
Doctor's degree (PhD)	University (or equivalent) education with a total duration of about 8 years.
Master's degree (MSc) or equivalent	University (or equivalent) education with a total duration of about five years.
Bachelor's degree (BSc) or equivalent	University (or equivalent) education with duration of about three years.
Technician certificate or diploma	Qualification issued from a technical education institution consisting of 1 to 3 years post secondary education.
Publicly funded forest research centers	Research centers primarily implementing research programmes on forest matters. Funding is mainly public or channelled through public institutions.

### 16.2 National data

#### 16.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable (s)	Year(s)	Additional comments
16 Forest Department, Eduardo Mondlane University (UEM)	H	Staff	2009	Data provided by the Forest Department, Eduardo Mondlane University
17 Agrarian Research Institute, Ministry of Agriculture	H	Research	2009	Data provided by the Agrarian Research Institute

### 16.3 Data for Table T16

FRA 2010 Category	Graduation <sup>1)</sup> of students in forest-related education					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Master's degree (MSc) or equivalent	0	0	0	0	4	50
Bachelor's degree (BSc) or equivalent	2	0	23	26	15	13
Forest technician certificate / diploma	n/a	n/a	n/a	n/a	n/a	n/a
FRA 2010 Category	Professionals working in publicly funded forest research centres <sup>2)</sup>					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Doctor's degree (PhD)	0	0	1	100	1	100
Master's degree (MSc) or equivalent	4	25	6	50	1	0
Bachelor's degree (BSc) or equivalent	5	60	5	80	2	50

Source: 1) Data provided by the Forest Department, Eduardo Mondlane University (UEM), March 2009.

2) Data provided by the Agrarian Research Institute, Ministry of Agriculture, March 2009

Notes:

1. Graduation refers to the number of students that have successfully completed a Bachelor's or higher degree or achieved a certificate or diploma as forest technician.
2. Covers degrees in all sciences, not only forestry.

#### 16.4 Comments to Table T16

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Graduation of students in forest-related education	Data on Forest technician certificate / diploma graduation is not available	Until 2009 UEM was the only educational institution with students that have completed Bachelor's or higher degree in forest-related education. In other institutions forest-related education is a new curriculum.
Professionals working in public forest research centres	Data on Professionals working in publicly funded forest research centres is referent only to the central level	Data reflecting Professionals working at headquarter

Other general comments to the table

## 17 Table T17 – Public revenue collection and expenditure

### 17.1 FRA 2010 Categories and definitions

Category	Definition
Forest revenue	All government revenue collected from the domestic production and trade of forest products and services. For this purpose, forest products include: roundwood; sawnwood; wood-based panels; pulp and paper; and non-wood forest products. As far as possible, this should include revenue collected by all levels of government (i.e. central, regional/provincial and municipal level), but it should exclude the income of publicly owned business entities.
Public expenditure	All government expenditure on forest related activities (further defined below).
Operational expenditure (sub-category to Public expenditure)	All government expenditure on public institutions solely engaged in the forest sector. Where the forest administration is part of a larger public agency (e.g. department or ministry), this should only include the forest sector component of the agency's total expenditure. As far as possible, this should also include other institutions (e.g. in research, training and marketing) solely engaged in the forest sector, but it should exclude the expenditure of publicly owned business entities.
Transfer payments (sub-category to Public expenditure)	All government expenditure on direct financial incentives paid to non-government and private-sector institutions, enterprises communities or individuals operating in the forest sector to implement forest related activities.
Domestic funding	Public expenditure funded from domestic public financial resources, including: retained forest revenue; forest-related funds; and allocations from the national budget (i.e. from non-forest sector public revenue sources).
External funding	Public expenditure funded from grants and loans from donors, non-governmental organisations, international lending agencies and international organisations, where such funds are channelled through national public institutions.

### 17.2 National data

#### 17.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
17.DNFFB, 1999-2008. Relatório Estatístico Anual. 1998-2007	H	Revenue collection and expenditure	1999-2007	Data provided by DNTF

### 17.3 Data for Table T17

Table 17a - Forest revenues

FRA 2010 Categories	Revenues (1000 local currency)	
	2000	2005
Forest revenue	13218846	149642503

**Table 17b - Public expenditure in forest sector by funding source**

FRA 2010 Categories	Domestic funding (1000 local currency)		External funding (1000 local currency)		Total (1000 local currency)	
	2000	2005	2000	2005	2000	2005
Operational expenditure	n/a	n/a	n/a	n/a	9884007	7962190
Transfer payments	n/a	n/a	n/a	n/a	n/a	n/a
<b>Total public expenditure</b>	n/a	n/a	n/a	n/a	n/a	n/a
If transfer payments are made for forest management and conservation, indicate for what specific objective(s) - Please tick all that apply.	<input type="checkbox"/>	Reforestation				
	<input type="checkbox"/>	Afforestation				
	<input type="checkbox"/>	Forest inventory and/or planning				
	<input type="checkbox"/>	Conservation of forest biodiversity				
	<input type="checkbox"/>	Protection of soil and water				
	<input type="checkbox"/>	Forest stand improvement				
	<input type="checkbox"/>	Establishment or maintenance of protected areas				
	<input checked="" type="checkbox"/>	Other, specify below				
Mechanisms used for financing forestry development. The objective of the credit component is to promote sustainable management of the forest and wildlife resources.						

**17.4 Comments to Table T17**

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest revenue	It refers to the sum of revenues coming from two sub-sectors, namely forest and wildlife. The forest sub-sectors contributes with about 90% of the all forest sector revenues.	The increment of forest revenues is mainly attributed to the high demand on forest products especially roundwood in the national as well as international market. Other factors are related to an improvement of the law enforcement system and consequent level of fines was collected.
Operational expenditure		
Transfer payments		

Other general comments to the table