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Food and Agriculture Organization of the United Nations

**GLOBAL FOREST RESOURCES  
ASSESSMENT 2010**

**COUNTRY REPORT**

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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
MCPFE, 2003. State of Europe’s Forests 2003	M	Forest, OWL.	1982	Secondary data source based on NFI3. The NFI3 area data were collected in a 12 year period, but 1982 is considered to be the reference year. Field data were collected in a 5 year period, but 1984 is considered to be the reference year.
Inventário Florestal Nacional, 3. <sup>a</sup> Revisão. 2001. (4th National Forest Inventory - NFI4)	H	Forest, OWL, inland water, other land.	1995	Mainland (continental territory). The NFI4 area data were collected in 1995. The field data were collected in 1997/1998.
5.º Inventário Florestal Nacional (5th National Forest Inventory – NFI5)	H	Forest, OWL, inland water, other land.	2005	Mainland (continental territory). The NFI5 area data were collected in 2005. The field data were collected mainly in 2005, but also in 2006.
Inventário Florestal da Região Autónoma dos Açores (IFRAA) (Azores regional forest inventory)	H	Forest, OWL, inland water, other land.	2007	Azores inventory data collection is a continuous process. The reported data reference year is 2007.

<b>1.º Inventário Florestal da Região Autónoma da Madeira (IFRAM1) (Madeira's regional forest inventory)</b>	H	Forest, OWL, inland water, other land.	2004	The Madeira's area data were collected in 2004. The field data were collected in 2008.
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### 1.2.2 Classification and definitions

The national classification and definition for forest are equivalent to those being used by FRA 2010.

### 1.2.3 Original data

Territory	Category	Area (1000 ha)		
		1982	1995	2005
Mainland territory	Reference year			
	Forest	3 108	3308	3347
	Other wooded land	38.9	41.0	149
	Other land	5684	5423	5258
	... of which with tree cover	n.a.	n.a.	n.a.
	Inland water	48.0	107	143
	Total area	8879	8879	8897
Autonomous Region of Azores	Reference year			<b>2007</b>
	Forest			56.0
	Other wooded land			3.44
	Other land			172
	... of which with tree cover			n.a.
	Inland water			1.06
	Total area			232
Autonomous Region of Madeira	Reference year			<b>2004</b>
	Forest			32.7
	Other wooded land			1.56
	Other land			45.8
	... of which with tree cover			n.a.
	Inland water			0.11
	Total area			80.1

Sources:

Mainland territory, 1982)

Forest and other wooded land: MCPFE

Inland water: FAOSTAT

Mainland territory, 1995)

All variables: NFI4

Mainland territory, 2005)

All variables: NFI5

Autonomous Region of Azores, 2007)

All variables: IFRAA

Autonomous Region of Madeira, 2004)

All variables: IFRAM1

### 1.3 Analysis and processing of national data

#### 1.3.1 Calibration

The total land area figures reported in the different national data sets (9192 and 9209 thousand hectares) are not equal to the FAOstat figure reported at Table 2.1 of the *Guidelines for county reporting to FRA 2010* (9212 thousand hectares). Therefore, a slight calibration was done in those data sets.

The area of inland water bodies reported at Table 2.1 of the *Guidelines for county reporting to FRA 2010* (62 thousand hectares) was not considered for 2000 and 2010 because this figure underestimates the real value.

#### 1.3.2 Estimation and forecasting

For the mainland territory, the year 1990 figures were interpolated from the NFI3 (1982) and NFI4 (1995). In a similar way, the year 2000 figures were interpolated from the NFI4 (1995) and NFI5 (2005). The year 2010 forest forecasted figures were extrapolated from the NFI4 (1995) and NFI5 (2005). The year 2010 inland water bodies figure was considered to be the same as 2005. Although Portuguese government has recently launched a new water dam programme in which the building of 10 new water dams is planned, none of these dams is expected to be finished before 2010.

Both Azores and Madeira's territories have only one single forest inventory each (IFRAM1 for Madeira and IFRAA for Azores). Although other sources of information are available for past years, these are not completely consistent and are not compatible with FAO definitions.

Therefore, for consistency reasons it was decided to adopt the forest inventory data of each territory for all reference years. Notice that Azores and Madeira's contributions for global figures of Portugal are relatively small, since these territories occupy only approximately 3% of the Portuguese total area.

#### 1.3.3 Reclassification into FRA 2010 categories

Reclassification is not required.

### 1.4 Data for Table T1

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	3 327	3 420	3 437	3 456
Other wooded land	45.3	101	155	155
Other land	5 790	5 565	5 476	5 457
...of which with tree cover	n.a.	n.a.	n.a.	n.a.
Inland water bodies	49.3	126	144	144
<b>Total for country</b>	<b>9 212</b>	<b>9 212</b>	<b>9 212</b>	<b>9 212</b>

### 1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest		Forest area presents a continuous increase, demonstrating that the afforestation rate have been able to compensate the lost forest areas due to wildfires and urban sprawl.
Other wooded land		The increase of OWL during the 1995-2005 period might be explained by the effect of forest fires. That is, in some areas affected by wildfires, the over storey was not able to recover after being destroyed by the fire, leaving place to OWL expansion. For the period 2006-2010, forest fires are expected to be less severe and consequently the OWL area was considered to remain unchanged.
Other land		
Other land with tree cover		
Inland water bodies		During the 1995-2005 period several water-dams were constructed (the Alqueva dam reservoir alone was responsible for 25 thousand hectares of new inland water area), and in result, the area of inland water bodies has largely increased.

#### Other general comments to the table

The 1990 and 2000 figures were adjusted in this report. Recently processed data of older inventories was made available and, therefore, adjustments were made.

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

Field inventory	2012
Remote sensing survey / mapping	2012



## 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
Rede Nacional de Matas e Perímetros Florestais - RNMPF (national network of forest areas managed by national and regional forest agencies)	H	Area of Forest land ownership (mainland territory)	2005	Land cover information
Boletim estatístico da CELPA 2007 (pulp industry companies statistics)	H	Area of Forest land ownership (mainland territory)	2005	Statistical information
5.º Inventário Florestal Nacional (5th National Forest Inventory – NFI5)	H	Area of Forest land ownership (mainland territory)	2005	Land cover information
Internal statistics of DRRF (Azores regional forest authority)	M	Forest land ownership (Autonomous Region of Azores)	2007	Since there is no available data for other years, the 2007 land ownership relative distribution was applied to all the reference years.
Internal statistics of DRF (Madeira's regional forest authority)	M	Forest land ownership (Autonomous Region of Madeira)	2004	Since there is no available data for other years, the 2004 land ownership relative distribution was applied to all the reference years.

### 2.2.2 Classification and definitions

The national classifications and definitions are equivalent to those being used by FRA 2010.

### 2.2.3 Original data

Territory	Category	Area (%)
Mainland territory	<b>Reference year</b>	<b>2005</b>
	Public ownership	1.50%
	Private ownership	98.5%
	...of which owned by individuals	88.9%
	...of which owned by private business entities and institutions	5.31%
	...of which owned by local communities	4.33%
	...of which owned by indigenous / tribal communities	0.00%
	Other types of ownership	0.00%
Autonomous Region of Azores	<b>Reference year</b>	<b>2007</b>
	Public ownership	0.7%
	Private ownership	99.3%
	...of which owned by individuals	71.7%
	...of which owned by private business entities and institutions	0.0%
	...of which owned by local communities	27.5%
	...of which owned by indigenous / tribal communities	0.0%
Other types of ownership	0.0%	
Autonomous	<b>Reference year</b>	<b>2004</b>

Region of Madeira	Public ownership	11.8%
	Private ownership	88.2%
	...of which owned by individuals	36.1%
	...of which owned by private business entities and institutions	0.0%
	...of which owned by local communities	52.0%
	...of which owned by indigenous / tribal communities	0.0%
	Other types of ownership	0.0%

## 2.3 Analysis and processing of national data

### 2.3.1 Calibration

Calibration is not required because relative proportions were used. These values were multiplied by the total forest area of each reference year, which were already calibrated, as explained in Table T1 comments.

### 2.3.2 Estimation and forecasting

Estimation and forecasting was not required because relative proportions were used. These values were multiplied by the total forest area of each reference year, which were already estimated (interpolated for mid-years, between data-source years), as explained in Table T1 comments.

### 2.3.3 Reclassification into FRA 2010 categories

Reclassification is not required.

## 2.4 Data for Table T2

**Table 2a - Forest ownership**

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public ownership	52.8	54.1	54.4
Private ownership	3 274	3 366	3 382
...of which owned by individuals	2 923	3 009	3 026
...of which owned by private business entities and institutions	172	177	178
...of which owned by local communities	172	176	177
...of which owned by indigenous / tribal communities	0.00	0.00	0.00
Other types of ownership	0.00	0.00	0.00
<b>TOTAL</b>	<b>3 327</b>	<b>3 420</b>	<b>3 437</b>

Note: If other types of ownership ARE reported, please specify details in comment to the table.

Does ownership of trees coincide with ownership of the land on which they are situated?	<input type="checkbox"/>	Yes
	<input checked="" type="checkbox"/>	No
If No above, please describe below how the two differ:		
Land and trees ownership do not always coincide. Part of the Portuguese forest land is rented (mainly to pulp industry companies). In these circumstances, trees ownership belongs to the rent holder, and not to the land owner.		
Most of communities forests are managed by national and regional forest agencies. In these forests, the tree ownership is shared: 60 to 80% of the trees revenue belongs to the communities and 20 to 40% belongs to the forest agencies.		

**Table 2b - Holder of management rights of public forests**

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public Administration	52.8	54.1	54.4
Individuals	0.00	0.00	0.00
Private corporations and institutions	0.00	0.00	0.00
Communities	0.00	0.00	0.00
Other	0.00	0.00	0.00
<b>TOTAL</b>	<b>52.8</b>	<b>54.1</b>	<b>54.4</b>

## 2.5 Comments to Table T2

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Public ownership		
Private ownership	Most of communities forests are managed by the national and regional forest agencies.	
Other types of ownership	No other types of ownership are considered	
Management rights	Management rights of all public forests belong to the Public Administration.	

### Other general comments to the table

For each territory (mainland, Azores and Madeira) there is only data for a single year. Therefore the public ownership percentage is applied to all reference years.

### 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
<b>Inventário Florestal Nacional, 3.ª Revisão. 2001. (4<sup>th</sup> National Forest Inventory - NFI4)</b>	H	Area of permanent forest estate, Forest area within protected areas and Forest area under sustainable forest management.	1995	Land cover and statistical information
<b>5.º Inventário Florestal Nacional (5<sup>th</sup> National Forest Inventory – NFI5)</b>	H	Area of permanent forest estate, Forest area within protected areas, Forest area under sustainable forest management, Primary designated function.	2005	Land cover and statistical information
<b>Inventário Florestal da Região Autónoma dos Açores (IFRAA) (Regional Forest Inventory)</b>	H	Area of permanent forest estate, Forest area within protected areas, Forest area under sustainable forest management, Primary designated function.	2007	Land cover and statistical information
<b>1.º Inventário Florestal da Região Autónoma da Madeira (IFRAM1) (regional forest inventory)</b>	H	Area of permanent forest estate, Forest area within protected areas, Forest area under sustainable forest management, Primary designated function.	2004	Land cover and statistical information
<b>MCPFE, 2003. State of Europe's Forests 2003</b>	H	Forest area within protected areas.	1995	
<b>Rede Nacional de Áreas Protegidas (national protected areas network)</b>	H	Forest area within protected areas, Primary designated function.		Cartographic information
<b>Rede Natura 2000 - Zonas de Protecção Especial - Zonas Especiais de Conservação (protected areas)</b>	H	Forest area within protected areas, Primary designated function.		Cartographic information
<b>Rede Nacional de Matas e Perímetros Florestais - RNMPF (national network of forest areas managed by national and regional forest agencies)</b>	H	Area of permanent forest estate, Forest area under sustainable forest management, Forest area with management plan, Primary designated function		Cartographic information
<b>Boletim estatístico da CELPA 2007 (pulp industry companies statistics)</b>	H	Forest area under sustainable forest management		Statistical information
<b>Forest management plans submitted to the AFN (National Forest Authority)</b>	H	Forest area with management plan		Statistical information
<b>FSC – Áreas de gestão florestal sustentável certificada (Areas certified by FSC as sustainable forest management)</b>	H	Forest area under sustainable forest management.		Statistical information

### 3.2.2 Classification and definitions

#### *Area of permanent forest estate*

Forest areas subjected to legislation that designates them to be retained as forest, disallowing land use conversions. For the mainland territory, these areas comprehend forest areas within *Rede Nacional de Matas e Perímetros Florestais* (national network of forest areas managed by national and regional forest agencies which are under the Forest Regime) and forest stands of *Quercus ilex* and *Quercus suber* (protected by a specific decree-law). For Azores and Madeira these areas comprehend forest areas managed by forest agencies and the primary forest areas.

#### *Forest areas within protected areas*

Forest areas within *Rede Natura 2000* and forest areas within *Rede Nacional de Áreas Protegidas* (national protected areas network).

#### *Forest areas under sustainable forest management*

As a national criterion, forest areas under sustainable management comprehend: forest areas within *Rede Nacional de Matas e Perímetros Florestais*, *Quercus ilex* and *Quercus suber* forest stands, forest areas managed by pulp industry companies and certified forest areas as sustainable forest management. For autonomous Regions of Azores and Madeira, areas under sustainable forest management were considered to be the primary forest areas as well as forest stands inside areas managed by forest agencies.

#### *Forest areas with management plan*

Forest areas with management plan comprehend forest areas which have a forest management plan approved by forest authorities.

#### *Primary function of forest areas*

The primary functions are established on a land cover basis and management/conservation status, defined by the national and regional forest agencies (Autoridade Florestal Nacional for the mainland territory, Direcção Regional dos Recursos Florestais for Azores and Direcção Regional de Florestas for Madeira).

### 3.2.3 Original data

Territory	Category	Area (1000 ha)
Mainland territory	Reference year	<b>2005</b>
	Production	1997
	Protection of soil and water	187
	Conservation of biodiversity	145
	Multiple use	1018
	Other (please specify in comments below the table)	0.00
	No / unknown	0.00
	<b>Total</b>	<b>3347</b>
Autonomous Region of Azores	Reference year	<b>2007</b>
	Production	17.4
	Protection of soil and water	28.3
	Conservation of biodiversity	9.49
	Social use/Multiple use	0.69
	Other (please specify in comments below the table)	0.00

	No / unknown	0.00
	<b>Total</b>	<b>56.0</b>
Autonomous Region of Madeira	Reference year	<b>2004</b>
	Production	0.00
	Protection of soil and water	16.5
	Conservation of biodiversity	16.1
	Multiple use	0.00
	Other (please specify in comments below the table)	0.00
	No / unknown	0.00
	<b>Total</b>	<b>32.7</b>

Territory	Category	Area (1000 ha)	
		1995	2005
Mainland territory	Reference year	<b>1995</b>	<b>2005</b>
	Area of permanent forest estate	1391	1237
	Forest area within protected areas	616	648
	Forest area under sustainable forest management	1590	1419
Autonomous Region of Azores	Reference year		<b>2007</b>
	Area of permanent forest estate		15.8
	Forest area within protected areas		23.6
	Forest area under sustainable forest management		20.3
Autonomous Region of Madeira	Reference year		<b>2004</b>
	Area of permanent forest estate		20.9
	Forest area within protected areas		24.4
	Forest area under sustainable forest management		17.5

### 3.3 Analysis and processing of national data

#### 3.3.1 Calibration

A slight calibration was required to assure that the sum of primary function areas matches the forest area reported in Table T1.

#### 3.3.2 Estimation and forecasting

For the mainland territory, the table T3a figures for the year 2010 were assumed to have the same relative distribution that the 2005 figures. For Table T3b, the year 2010 forecasted figures were estimated considering the same percentual increase of forest area reported in Table T1 between 2005 and 2010, with the exception of *forest area with management plan* figures, which were extrapolated by national forest authority, considering the expected increased due to the recent legal requirements.

For Azores and Madeira's territories the respective inventory data were used for every reference years (as explained at 1.3.2).

#### 3.3.3 Reclassification into FRA 2010 categories

Reclassification was made according the definitions presented at 3.2.2.



### 3.4 Data for Table T3

**Table 3a – Primary designated function**

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production	n.a.	n.a.	2015	2026
Protection of soil and water	n.a.	n.a.	232	234
Conservation of biodiversity	n.a.	n.a.	170	171
Social services	n.a.	n.a.	0	0
Multiple use	n.a.	n.a.	1019	1025
Other (please specify in comments below the table)	n.a.	n.a.	0.00	0.00
No / unknown	n.a.	n.a.	0.00	0.00
<b>TOTAL</b>	n.a.	n.a.	3437	3456

**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.	1352	1274	1281
Forest area within protected areas	n.a.	681	697	700
Forest area under sustainable forest management	n.a.	1544	1457	1465
Forest area with management plan	n.a.	n.a.	n.a.	1081

### 3.5 Comments to Table T3

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Production		
Protection of soil and water		
Conservation of biodiversity		
Social services	Social services function is reported as zero because this function of forest is considered in the reported area of multiple use function.	
Multiple use		
Other		
No / unknown designation		
Area of permanent forest estate		
Forest area within protected areas		
Forest area under sustainable forest management	As a national criterion, forest areas under sustainable management comprehend: forest areas within <i>Rede Nacional de Matas e Perímetros Florestais</i> , <i>Quercus ilex</i> and <i>Quercus suber</i> forest stands, forest areas managed by pulp industry companies and certified forest areas as sustainable forest management. For autonomous Regions of Azores and Madeira, areas under sustainable forest management were considered to be the primary forest areas as well as forest stands inside areas managed by forest agencies.	
Forest area with management plan	Most of the forest areas managed by forest agencies had forest management plans in 1990, 2000 and 2005 ( <i>planos de ordenamento, planos de arborização</i> or <i>planos de cortes</i> ). Although a significant part of these plans can be considered as forest management plans, at this point, it is not possible to report area data. The autonomous regions of Azores and Madeira are initiating the regional forest plans process. These plans will define the legal and technical scope to be followed by the property-level forest management plans. No forest management plan of Azores or Madeira is expected to be concluded by 2010.	

Other general comments to the table
Forest primary function values reported in FRA2005 (for the year 2000) are not reported in FRA2010 because they were produced with an old methodological approach. The new approach applied for the 2005 onwards data reflects the implementation of PROF (Regional Forest Plans), NFI (National Forest Strategy) as well as protected areas management plans, and newly available data on forest resources.

## 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 (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.
<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
<b>Inventário Florestal Nacional, 3.<sup>a</sup> Revisão, 2001. (4th National Forest Inventory - NFI4)</b>	H	Primary forest, other naturally regenerated forest and planted forest	1995	Mainland (continental territory).
<b>5.º Inventário Florestal Nacional (5th National Forest Inventory – NFI5)</b>	H	Primary forest, other naturally regenerated forest and planted forest	2005	Mainland (continental territory).
<b>Inventário Florestal da</b>	H	Primary	2007	Autonomous Region of Azores.

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Região Autónoma dos Açores (IFRAA) (regional forest inventory)		forest, other naturally regenerated forest and planted forest		
1.º Inventário Florestal da Região Autónoma da Madeira (IFRAM1) (regional forest inventory)	H	Primary forest, other naturally regenerated forest and planted forest	2004	Autonomous Region of Madeira.

#### 4.2.2 Classification and definitions

There is no official or commonly used classification or definition for these categories. The FRA definitions were adopted.

#### 4.2.3 Original data

Territory	Category	Area (1000 ha)	
		1995	2005
Mainland territory	Reference year		
	Primary forest	0.00	0.00
	Other naturally regenerated forest	2588	2553
	...of which of introduced species	116	120
	Planted forest	720	794
	...of which of introduced species	701	784
	Total	<b>3308</b>	<b>3347</b>
Autonomous Region of Azores	Reference year		<b>2007</b>
	Primary forest		7.97
	Other naturally regenerated forest		30.12
	...of which of introduced species		28.66
	Planted forest		17.87
	...of which of introduced species		17.87
	Total		<b>56.0</b>
Autonomous Region of Madeira	Reference year		<b>2004</b>
	Primary forest		16.1
	Other naturally regenerated forest		16.5
	...of which of introduced species		16.5
	Planted forest		0.00
	...of which of introduced species		0.00
	Total		<b>32.7</b>

### 4.3 Analysis and processing of national data

#### 4.3.1 Calibration

A calibration was required to assure that the sum of areas of different categories matches the forest area reported in Table T1.

### 4.3.2 Estimation and forecasting

For the mainland territory, the years 2000 and 2010 figures were interpolated/extrapolated from the NFI4 (1995) and NFI5 (2005).

For Azores and Madeira's territories the respective inventory data were used for every reference years (as explained at 1.3.2).

### 4.3.3 Reclassification into FRA 2010 categories

Reclassification was made by forest tree species. A category was assigned for each forest tree species, depending on the territory considered (mainland, Azores and Madeira).

## 4.4 Data for Table T4

**Table 4a**

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest	n.a.	24.1	24.1	24.1
Other naturally regenerated forest	n.a.	2620	2600	2583
...of which of introduced species	n.a.	163	165	166
Planted forest	n.a.	776	812	849
...of which of introduced species	n.a.	761	802	844
<b>TOTAL</b>	<b>n.a.</b>	<b>3420</b>	<b>3437</b>	<b>3456</b>

**Table 4b**

FRA 2010 Categories	Area (1000 hectares)			
	1990	2000	2005	2010
Rubber plantations (Forest)	0.00	0.00	0.00	0.00
Mangroves (Forest and OWL)	0.00	0.00	0.00	0.00
Bamboo (Forest and OWL)	n.a.	0.00	0.00	0.00

#### 4.5 Comments to Table T4

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Primary forest		
Other naturally regenerating forest		
Planted forest		
Rubber plantations	Inexistent	
Mangroves	Inexistent	
Bamboo	There are only a few small plantations, for which there is no data.	

Other general comments to the table

## 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
AFN/IFADAP Mainland publicly funded afforestation statistics (AFN internal data)	H	Afforestation	1991 to 2002	
IFAP Mainland publicly funded afforestation statistics	H	Afforestation	2003 to 2007	
DRRF Azores internal afforestation statistics	H	Afforestation	1998-2002; 2003-2007	
DRF Madeira internal (re)afforestation statistics	H	Afforestation	1998-2002; 2003-2007	

#### 5.2.2 Classification and definitions

The national classification matches the FRA2010 definition

#### 5.2.3 Original data

Territory	Year(s)	Total afforestation (ha)	Afforestation of Introduced species (ha)
Mainland Territory	1991-1992	42 550	16 293
	1998-2002	110 144	18 806
	2003-2007	56759	n.a.
Autonomous Region of Azores	1998-2002	72.5	72.5
Autonomous Region of Azores	2003-2007	40.0	40.0
Autonomous Region of Madeira	1988-1992	0.00	0.00
Autonomous Region of Madeira	1998-2002	0.00	0.00
Autonomous Region of Madeira	2003-2007	0.00	0.00

### 5.3 Analysis and processing of national data

#### 5.3.1 Calibration

Calibration is not required.

#### 5.3.2 Estimation and forecasting

Estimation and forecast are not required.

#### 5.3.3 Reclassification into FRA 2010 categories

Reclassification is not required.

### 5.4 Data for Table T5

FRA 2010 Categories	Annual forest establishment (hectares/year)			...of which of introduced species <sup>1)</sup> (hectares/year)		
	1990	2000	2005	1990	2000	2005
Afforestation	21 347	22 101	11 352	8 219	3 834	n.a.
Reforestation	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
...of which on areas previously planted	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Natural expansion of forest	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Note: The figures for the reporting years refer to the averages for the 5-year periods 1988-1992, 1998-2002 and 2003-2007 respectively.

### 5.5 Comments to Table T5

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Afforestation	The reported figures for 1990 include a year average of 1991 and 1992 figures	
Reforestation	There are no comprehensive statistics of reforestation areas. A significant amount of reforestation areas is not supported by public funding, and therefore are not traceable.	
Natural expansion of forest	This variable is not available as there is no effective monitoring system for this type of land cover change.	

Other general comments to the table



## 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
MCPFE, 2003. State of Europe's Forests 2003	H	Forest growing stock	1984	Secondary data source based on NFI3. The NFI3 area data were collected in a 12 year period, but 1982 is considered to be the reference year. Field data were collected in a 5 year period, but 1984 is considered to be the reference year.
Inventário Florestal Nacional, 3. <sup>a</sup> Revisão. 2001. (4 <sup>th</sup> National Forest Inventory - NFI4)	H	Forest growing stock	1998	Mainland (continental territory). The NFI4 area data were collected in 1995, while the field data were collected in 1997/1998.
5. <sup>o</sup> Inventário Florestal Nacional (5 <sup>th</sup> National Forest Inventory – NFI5)	H	Forest growing stock, OWL growing stock	2005	Mainland (continental territory). The NFI5 area data were collected in 2005, while the field data were collected mainly in 2005 but also in 2006.
Inventário Florestal da Região Autónoma dos Açores (IFRAA) (regional forest inventory)	H	Forest growing stock	2007	Azores data has been collected and updated till 2007.
1. <sup>o</sup> Inventário Florestal da Região Autónoma da Madeira (IFRAM1) (regional forest inventory)	H	Forest growing stock	2008	Madeira's area data were collected in 2004, while the field data were collected in 2008.

## 6.2.2 Classification and definitions

The NFI classification and definitions are as follows:

National class	Definition
Growing stock	Sum of the volume of all standing living trees. Includes: <ul style="list-style-type: none"> <li>• All trees with DBH higher than zero;</li> <li>• Stem volume, including the top end, stump and bark.</li> </ul> Excludes: <ul style="list-style-type: none"> <li>• Volume of branches, roots and leaves;</li> <li>• Dead trees</li> <li>• Downed trees;</li> <li>• Trees outside the forest.</li> </ul>
Growing stock of commercial species	Growing stock of forest species which have no specific-law that restricts its felling.

## 6.2.3 Original data

Territory	Category	Volume (million cubic meters over bark)		
		1984	1998	2005
Mainland territory	Reference year			
	Forest growing stock	185	185	167
	... of which coniferous	114	105	84.0
	... of which broadleaved	71.5	79.7	82.5
	Forest Growing stock of commercial species	149	153	136
	OWL Growing stock			1.73
Autonomous Region of Azores	Reference year			<b>2007</b>
	Forest growing stock			12.1
	... of which coniferous			6.70
	... of which broadleaved			5.44
	Forest Growing stock of commercial species			11.3
Autonomous Region of Madeira	Reference year			<b>2008</b>
	Forest growing stock			5.90
	... of which coniferous			1.81
	... of which broadleaved			4.09
	Forest Growing stock of commercial species			4.33

## 6.3 Analysis and processing of national data

### 6.3.1 Calibration

Calibration is not required.

### 6.3.2 Estimation and forecasting

The year 1990 figures were interpolated from the NFI3 (1984) and NFI4 (1998). In similar way, the year 2000 figures were interpolated from the NFI4 (1995) and NFI5 (2005).

The year 2010 forest forecasted figures were extrapolated from the NFI3 (1984), NFI4 (1998) and NFI5 (2005) figures.

Both Azores and Madeira's territories have only one single forest inventory each (IFRAM1 for Madeira and IFRAA for Azores). Although other sources of information are available for past years, these are not completely consistent and are not compatible with FAO definitions.

Therefore, for consistency reasons it was decided to adopt the forest inventory data of each territory for all reference years. Notice that Azores and Madeira's contributions for global figures of Portugal are relatively small, since these territories occupy only approximately 3% of the Portuguese total area.

Azores and Madeira territories do not have data regarding the OWL growing stock. To estimate these variables, the mainland's average growing stock (per hectare) was used.

### 6.3.3 Reclassification into FRA 2010 categories

Reclassification is not required.

## 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	203	198	185	186	n.a.	n.a.	1.79	1.80
... of which coniferous	118	107	92.5	90.8	n.a.	n.a.	n.a.	n.a.
... of which broadleaved	84.6	90.0	92.1	95.1	n.a.	n.a.	n.a.	n.a.
Growing stock of commercial species	166	163	152	154	n.a.	n.a.	n.a.	n.a.

**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>Pinus pinaster</i>	Maritime pine	n.a.	94.7	80.6
2 <sup>nd</sup>	<i>Eucalyptus spp.</i>	Eucalyptus	n.a.	41.4	45.1
3 <sup>rd</sup>	<i>Quercus suber</i>	Cork oak	n.a.	23.9	23.3
4 <sup>th</sup>	<i>Quercus ilex</i>	Holm oak	n.a.	7.87	7.12
5 <sup>th</sup>	Remaining <i>Quercus sp.</i>		n.a.	4.75	4.72
6 <sup>th</sup>	<i>Pinus pinea</i>	Umbrella pine	n.a.	4.72	4.06
7 <sup>th</sup>	<i>Castanea sativa</i>	Chestnut Oak	n.a.	1.77	1.43
8 <sup>th</sup>					
9 <sup>th</sup>					
10 <sup>th</sup>					
Remaining			n.a.	18.46	18.27
<b>TOTAL</b>			<b>n.a.</b>	<b>198</b>	<b>185</b>

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

Item	Value	Complementary information
Minimum diameter (cm) at breast height <sup>1</sup> of trees included in growing stock (X)	0	Although there is a dbh threshold of 5/7.5 cm (depending on the specie) for measuring individual trees, volume of smaller trees (dbh<5/7.5 cm) is considered as well (smaller trees are counted and the correspondent average height is recorded for every sample plot).
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	0	The reported growing stock includes the volume of the top end of the stem.
Minimum diameter (cm) of branches included in growing stock (W)		The reported growing stock does not include the volume of branches.
Volume refers to “above ground” (AG) or “above stump” (AS)	AG	The reported growing stock includes the stump volume.

## 6.5 Comments to Table T6

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total growing stock		
Growing stock of broadleaved / coniferous		
Growing stock of commercial species		
Growing stock composition	The NFI5 distinguishes 10 different forest species/genders, while the NFI4 (1995) only distinguishes 9 ( <i>acacia</i> spp. growing stock is reported in <i>remaining broadleaved species</i> ). In order to be comparable to the NFI4 value, growing stock of <i>acacia</i> spp in 2005 was reported in the <i>remaining broadleaved species</i> as well.	

### Other general comments to the table

The 1990 and 2000 figures were adjusted in this report. Recently processed data of past years was available and, therefore, adjustments were made.

<sup>1</sup> 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.

## 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
5.º Inventário Florestal Nacional (5th National Forest Inventory – NFI5)	H	Above ground biomass	2005	
Inventário Florestal da Região Autónoma dos Açores (IFRAA) (regional forest inventory)	M	Above ground biomass	2007	Biomass values were not estimated in this inventory. Growing stock values were converted to biomass values.
1.º Inventário Florestal da Região Autónoma da Madeira (IFRAM1) (regional forest inventory)	H	Above ground biomass	2004	

#### 7.2.2 Classification and definitions

The Portuguese definition of above-ground biomass is identical to the FRA 2010 definition. There is no national definition for below-ground biomass and dead-wood biomass.

### 7.2.3 Original data

Territory	Category	Units	Year	Value
	Above-ground biomass	1000 t	1998	n.a.
	Forest growing stock	1000 m <sup>3</sup>	1998	185
	... of which coniferous	1000 m <sup>3</sup>	1998	105
	... of which broadleaved	1000 m <sup>3</sup>	1998	79.7
	Above-ground biomass	1000 t	2005	137.7
	Forest growing stock	1000 m <sup>3</sup>	2005	167
	... of which coniferous	1000 m <sup>3</sup>	2005	84.0
	... of which broadleaved	1000 m <sup>3</sup>	2005	82.5
Autonomous Region of Azores	Above-ground biomass	1000 t	2007	n.a.
	Forest growing stock	1000 m <sup>3</sup>	2007	12.1
	... of which coniferous	1000 m <sup>3</sup>	2007	6.70
	... of which broadleaved	1000 m <sup>3</sup>	2007	5.44
Autonomous Region of Madeira	Above-ground biomass	1000 t	2008	5.08
	Forest growing stock	1000 m <sup>3</sup>	2008	5.90
	... of which coniferous	1000 m <sup>3</sup>	2008	1.81
	... of which broadleaved	1000 m <sup>3</sup>	2008	4.09

## 7.3 Analysis and processing of national data

### 7.3.1 Estimation and forecasting

The forecasted values for 2010 were obtained assuming the same ratio biomass:growing stock of 2005.

### 7.3.2 Reclassification into FRA 2010 categories

Reclassification is not required

## 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	n.a.	n.a.	153	154	n.a.	n.a.	n.a.	n.a.
Below-ground biomass	n.a.	n.a.	63.3	63.7	n.a.	n.a.	n.a.	n.a.
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	<p>For Azores forest inventory, above-ground biomass was not collected. For this territory, biomass values were estimated by converting growing stock to biomass values (BCEF were used).</p> <p>The reported above-ground biomass does not include the under storey biomass as it concerns to the tree biomass only.</p>	<p>The forecasted values for 2010 were obtained assuming the same ratio biomass:growing stock of 2005.</p>
Below-ground biomass	<p>Expansion factors to convert above-ground biomass to below-ground biomass were used. Values were collected from Table 5.3 of Appendix 5 of the Guidelines document.</p>	
Dead wood	<p>This variable can not be estimated since this kind of data is not collected in any of the Portuguese NFI.</p>	

<b>Other general comments to the table</b>
<p>The reported above-ground biomass figures do not include the understorey component as this information is not available.</p>

## 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

The biomass values reported at Table T7 were used as data sources.

#### 8.2.2 Classification and definitions

Used definitions correspond to the FRA 2010 definitions.

#### 8.2.3 Original data

Table T7 values were used as original data.

### 8.3 Analysis and processing of national data

#### 8.3.1 Calibration

No calibration is required.

#### 8.3.2 Estimation and forecasting

Not required.

#### 8.3.3 Reclassification into FRA 2010 categories

Data was directly obtained by multiplying the biomass values by the default value of carbon fraction of aboveground forest biomass indicated at Table 5.2 of Appendix 5 of the Guidelines document.



### 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	n.a.	n.a.	72.0	72.5	n.a.	n.a.	n.a.	n.a.
Carbon in below-ground biomass	n.a.	n.a.	29.8	29.9	n.a.	n.a.	n.a.	n.a.
<b>Sub-total: Living biomass</b>	n.a.	n.a.	102	102	n.a.	n.a.	n.a.	n.a.
Carbon in dead wood	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Carbon in litter	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
<b>Sub-total: Dead wood and litter</b>	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Soil carbon	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.

Soil depth (cm) used for soil carbon estimates	-
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### 8.5 Comments to Table T8

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Carbon in above-ground biomass		
Carbon in below-ground biomass		
Carbon in dead wood		
Carbon in litter		
Soil carbon		

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

## 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
Estatísticas de áreas ardidas, AFN, 2009	H	Number of fires, area affected by fire (mainland territory)	1988-1992, 1998-2002, 2003-2007	
Estatísticas de áreas ardidas, DRF Madeira, 2009	H	Number of fires, area affected by fire (Madeira's territory)	1990-1992, 1998-2002, 2003-2007	Data for 1988 and 1989 is not available. A three year average was produced.

#### 9.2.2 Classification and definitions

In the national statistics of forest fires, two land use classes are used: "Povoamentos" and "Matos". The OWL affected area is not collected separately. For this matter, it is assumed that the OWL affected area is accounted in the forest affected area.

### 9.2.3 Original data

Number of forest fires and area damaged by forest fire

Territory	Year	Number of fires	Area affected by fire		
			Forest&OWL	Other land	Total
			1000 ha		
Mainland territory	1988	6131	8.63	13.8	22.4
	1989	21896	62.2	64.1	126
	1990	10745	79.5	57.7	137.3
	1991	14327	125	57.0	182.5
	1992	14954	39.7	17.3	57.0
	1998	34676	57.4	101	158.4
	1999	25477	31.1	39.6	70.6
	2000	34109	68.6	91.0	160
	2001	26942	45.3	66.6	112
	2002	26488	65.2	59.3	124
	2003	26195	286	140	426
	2004	21970	56.1	73.4	130
	2005	35697	125	214	338
	2006	19929	36.3	39.2	75.5
	2007	18722	9.64	21.8	31.5
Autonomous Region of Madeira	1990-1992 annual average	55	0.51	0.02	0.53
	1998-2002 annual average	57	0.19	0.16	0.35
	2002-2007 annual average	93	1.28	0.74	2.02

## 9.3 Analysis and processing of national data

### 9.3.1 Reclassification into FRA 2010 categories

No consistent reclassification is possible to estimate the OWL affected area. Furthermore, it is assumed that this variable is accounted in the forest affected area figures.

## 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	106	13666	125	29595	202	24596
... of which on forest	63.6	n.a.	53.7	n.a.	104	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	42.0	n.a.	71.6	n.a.	98.3	n.a.

Note: as explained, the forest affected area includes the OWL affected area (separation is not possible)

**Table 9b**

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

Note: The 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

### 9.5 Comments to Table T9

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Area affected by fire	The area affected by fire on the other wooded land is not collected separately. It is assumed that the OWL affected area is accounted in the forest affected area.	
Number of fires	The number of fires concerns to fires on forest, OWL and other land, as no separation is possible.	
Wildfire / planned fire	There are no statistical data for planned fires exclusively on forest land. Nevertheless, since they concern a small forest area, it is assumed that the planned fire proportion is below 0.5%.	

#### Other general comments to the table

Forest fires at Azores are quite rare and insignificant, therefore this territory is not considered in the results.

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

### 10.1 FRA 2010 Categories and definitions

Term	Definition
Disturbance	Damage caused by any factor (biotic or abiotic) that adversely affects the vigour and productivity of the forest and which is not a direct result of human activities.
Invasive species	Species that are non-native to a particular ecosystem and whose introduction and spread cause, or are likely to cause, socio-cultural, economic or environmental harm or harm to human health.
Category	Definition
Disturbance by insects	Disturbance caused by insect pests.
Disturbance by diseases	Disturbance caused by diseases attributable to pathogens, such as bacteria, fungi, phytoplasma or virus.
Disturbance by other biotic agents	Disturbance caused by biotic agents other than insects or diseases, such as wildlife browsing, grazing, physical damage by animals, etc.
Disturbance caused by abiotic factors	Disturbances caused by abiotic factors, such as air pollution, snow, storm, drought, etc.

### 10.2 National data

#### 10.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
AFN/Forest Focus Regulation	H	Disturbances areas; Major outbreaks	1990, 2000, 2005	
5.º Inventário Florestal Nacional (5th National Forest Inventory – NFIS)	H	Area of forest affected by woody invasive species	2005	This source concerns <i>Accacia</i> spp. area.
Inventário Florestal da Região Autónoma dos Açores (IFRAA) (regional forest inventory)	H	Area of forest affected by woody invasive species	2007	This source concerns <i>Accacia</i> spp. area.
1.º Inventário Florestal da Região Autónoma da Madeira (IFRAM1) (regional forest inventory)	H	Area of forest affected by woody invasive species	2004	This source concerns <i>Accacia</i> spp. area.

#### 10.2.2 Classification and definitions

Same as FRA definitions.

#### 10.2.3 Original data

Original data is directly reported in 10.4.

### 10.3 Analysis and processing of national data

#### 10.3.1 Calibration

Calibration is not required.

#### 10.3.2 Estimation and forecasting

Estimation and forecasting are not required.

### 10.4 Data for Table T10

**Table 10a – Disturbances**

FRA 2010 category	Affected forest area (1000 hectares)		
	1990	2000	2005
Disturbance by insects	366	210	604
Disturbance by diseases	86.8	49.8	143
Disturbance by other biotic agents	26.9	15.4	44.4
Disturbance caused by abiotic factors	36.5	20.9	51.2
<b>Total area affected by disturbances</b>	<b>516</b>	<b>296</b>	<b>843</b>

Notes: The 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.

The total area affected by disturbances is not necessarily the sum of the individual disturbances as these may be overlapping.

**Table 10b – Major outbreaks of insects and diseases affecting forest health and vitality**

Description / name	Tree species or genera affected (scientific name)	Year(s) of latest outbreak	Area affected (1000 hectares)	If cyclic, approx. cycle (years)
Pinewood Nematode / <i>Bursaphelenchus xylophilus</i>	Conifers (Coniferales), except <i>Thuja L</i>	1999 - Setúbal Península; 2008 – Center Region	519	

Note: Area affected refers to the total area affected during the outbreak.

**Table 10c – Area of forest affected by woody invasive species**

Scientific name of woody invasive species	Forest area affected 2005 (1000 hectares)
<i>Acacia</i> spp.	13.9
<b>Total forest area affected by woody invasive species</b>	n.a.

Note: The total forest area affected by woody invasive species is not necessary the sum of the values above, as these may be overlapping.

### 10.5 Comments to Table T10

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Disturbance by insects	Data obtained from the level 1 sample plots net, within the Forest Focus (European Community Regulation).	
Disturbance by diseases	Data obtained from the level 1 sample plots net, within the Forest Focus (European Community Regulation).	
Disturbance by other biotic agents	Data obtained from the level 1 sample plots net, within the Forest Focus (European Community Regulation).	
Disturbance caused by abiotic factors	The reported areas include disturbances due to climate and edaphic factors, according to the Forest Focus data.	
Major outbreaks	Pinewood Nematode	
Invasive species	Acacias are the only species for which is possible to present data as it is the only invasive specie that has an individualized area evaluation in NFI.	

Other general comments to the 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
FAOSTAT – ForesSTAT <a href="http://faostat.fao.org/site/626/default.aspx#ancor">http://faostat.fao.org/site/626/default.aspx#ancor</a>	H	Industrial roundwood removals volume, woodfuel removals volume	1988-1992, 1998-2002, 2003-2007	Under bark values
INE – Estatísticas Agrícolas.	H	Industrial roundwood removals unit price	1998-2002, 2004-2006	Average prices of 3 years were used because, the 2007 data is not yet available
DGF/IPF – Estatísticas de preços de madeira 1974-1996 (National forest authority internal information)	H	Industrial roundwood removals unit price	1988-1992	

#### 11.2.2 Classification and definitions

The classification and definitions used are those used by FAO at ForesStat and FRA 2010.



## 11.2.3 Original data

Territory	Category	Removals (1000 m3)					
		1988	1989	1990	1991	1992	Annual average
Portuguese territory	<b>Reference year</b>	<b>1988</b>	<b>1989</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>Annual average</b>
	Coniferous Sawlogs+Veneer Logs (under bark)	3 290	3 990	4 700	3 730	3 591	3 860
	Other coniferous industrial roundwood (under bark)	1 414	1 693	1 834	1 832	1 535	1 662
	Non-coniferous Sawlogs+Veneer Logs (under bark)	200	152	180	180	398	222
	Other non-coniferous industrial roundwood (under bark)	3 935	3 870	3 991	4 567	4 254	4 091
	<b>Total industrial roundwood</b>	<b>9 339</b>	<b>10 205</b>	<b>11 205</b>	<b>10 809</b>	<b>6 024</b>	<b>9 516</b>
	Wood fuel volume (under bark)	500	500	500	500	500	500
	<b>Total roundwood</b>	<b>8 839</b>	<b>9 705</b>	<b>10 705</b>	<b>10 309</b>	<b>5 524</b>	<b>9 016</b>
	<b>Reference year</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>Annual average</b>
	Coniferous Sawlogs+Veneer Logs (under bark)	3 072	2 961	3 546	2 540	2 215	2 867
	Other coniferous industrial roundwood (under bark)	1 112	1 219	1 436	1 218	870	1 171
	Non-coniferous Sawlogs + Veneer Logs (under bark)	300	269	42	35	79	145
	Other non-coniferous industrial roundwood (under bark)	3 464	3 929	5 207	4 553	4 978	4 426
	<b>Total industrial roundwood</b>	<b>7 948</b>	<b>8 378</b>	<b>10 231</b>	<b>8 346</b>	<b>8 142</b>	<b>8 609</b>
	Wood fuel volume (under bark)	600	600	600	600	600	600
	<b>Total roundwood</b>	<b>8 548</b>	<b>8 978</b>	<b>10 831</b>	<b>8 946</b>	<b>8 742</b>	<b>9 209</b>
	<b>Reference year</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>Annual average</b>
	Coniferous Sawlogs+Veneer Logs (under bark)	2 363	2 194	2 369	2 396	2 568	2 378
	Other coniferous industrial roundwood (under bark)	969	1 783	899	1 105	1 069	1 165
	Non-coniferous Sawlogs + Veneer Logs (under bark)	190	52	114	114	106	115
Other non-coniferous industrial roundwood (under bark)	5 551	6 240	6 763	6 589	6 480	6 325	
<b>Total industrial roundwood</b>	<b>9 073</b>	<b>10 269</b>	<b>10 145</b>	<b>10 204</b>	<b>10 223</b>	<b>9 983</b>	

	Wood fuel volume (under bark)	600	600	600	600	600	600
	<b>Total roundwood</b>	<b>9 673</b>	<b>10 869</b>	<b>10 745</b>	<b>10 804</b>	<b>10 823</b>	<b>10 583</b>

Territory	Category	Annual average price (€/m3)				
		1988	1989	1990	1991	1992
Portuguese territory	<b>Reference year</b>	<b>1988</b>	<b>1989</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>
	Coniferous Sawlogs+Veneer Logs price (under bark)	19.0	23.8	28.1	23.8	21.2
	Other coniferous industrial roundwood price (under bark)	13.6	14.0	15.1	11.9	10.6
	Non-coniferous industrial roundwood price (under bark)	17.1	20.0	24.9	21.4	19.6
	<b>Reference year</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
	Coniferous Sawlogs+Veneer Logs price (under bark)	42.7	40.8	62.0	55.1	47.2
	Other coniferous industrial roundwood price (under bark)	35.7	34.9	32.4	28.5	18.7
	Non-coniferous Sawlogs + Veneer Logs price (under bark)	46.6	43.7	59.8	53.6	51.3
	Other non-coniferous industrial roundwood price (under bark)	47.9	48.7	28.0	28.6	26.8
	<b>Reference year</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>		
	Coniferous Sawlogs+Veneer Logs price (under bark)	53.5	48.4	60.8		
	Other coniferous industrial roundwood price (under bark)	23.6	26.2	20.8		
	Non-coniferous Sawlogs + Veneer Logs price (under bark)	47.8	44.7	36.5		
	Other non-coniferous industrial roundwood price (under bark)	27.7	26.2	15.5		
	Wood fuel price (under bark)	17.8	10.2	20.7		

### 11.3 Analysis and processing of national data

#### 11.3.1 Calibration

Calibration is not required.

#### 11.3.2 Estimation and forecasting

Estimation and forecasting is not required.

#### 11.3.3 Reclassification into FRA 2010 categories

Reclassification is not required.

## 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.)	12 662	10 958	12 578	627	732	732
... of which from forest	12 662	10 958	12 578	627	n.a.	732
Unit value (local currency / m <sup>3</sup> o.b.)	15.8	29.5	24.5	n.a.	n.a.	16.8
Total value (1000 local currency)	200 654	323 304	307 827	n.a.	n.a.	12 328

Note: The figures for the reporting years refer to the annually averages of 5-year periods 1988-1992, 1998-2002 and 2003-2007 respectively.

	1990	2000	2005
Name of local currency	Euros	Euros	Euros

## 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	National conversion factors were used to convert under bark to over bark volume. In coniferous species, bark corresponds to 25% of the over-bark volume; In non-coniferous, bark corresponds to 18% of the over-bark volume.	
Total volume of woodfuel removals	National conversion factors were used to convert under bark to over bark volume. In coniferous species, bark corresponds to 25% of the over-bark volume; In non-coniferous, bark corresponds to 18% of the over-bark volume.	
Unit value	The presented unit price is a result of a weighted average of coniferous and non-coniferous price, according the quantities removed of each category. All unit prices in escudos were converted to euros (1€= 200.482 escudos).	
Total value		

### Other general comments to the table

Values for 1990 and 2000 were adjusted, as new national conversion factors for bark were made available. In FRA 2005, the Faostat removal values (under bark) were converted to over bark values using the general conversion factor of 1.15 suggested in the guidelines.

## 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
<p><b><u>Plant products / raw material</u></b></p> <ol style="list-style-type: none"> <li>1. Food</li> <li>2. Fodder</li> <li>3. Raw material for medicine and aromatic products</li> <li>4. Raw material for colorants and dyes</li> <li>5. Raw material for utensils, handicrafts &amp; construction</li> <li>6. Ornamental plants</li> <li>7. Exudates</li> <li>8. Other plant products</li> </ol> <p><b><u>Animal products / raw material</u></b></p> <ol style="list-style-type: none"> <li>9. Living animals</li> <li>10. Hides, skins and trophies</li> <li>11. Wild honey and bee-wax</li> <li>12. Wild meat</li> <li>13. Raw material for medicine</li> <li>14. Raw material for colorants</li> <li>15. Other edible animal products</li> <li>16. Other non-edible animal products</li> </ol>

### 12.2 National data

#### 12.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
SICOP – Forest Information System on Products Prices in the Production	H	Cork harvest and price; pine cones price	2005	
INE – Estatísticas Agrícolas.	H	Wild-honey harvest; resin harvest and price	2005	
Mendes, A., 2005 In Valuing Mediterranean Forests, ed. Merlo, M. & Croitoru, L., Wallingford, U.K.: CAB International.	M	Mushrooms harvest and price; Carob harvest and price	2004	

<b>MCPFE, 2003. State of Europe's Forests 2003</b>	M	Game harvest and price	2000	
<b>GPPAA - Anuário vegetal.</b>	H	Chestnuts harvest and price; pine cones harvest	2005	
<b>IDRHA – Produtos tradicionais com nomes protegidos</b>	M	Wild-honey price	2005	Although this source is made for products under Protected Designation of Origin, it presents prices for wild-honey out of the PDO.

### 12.2.2 Original data

Territory	Category	Year	Quantity / price
Portuguese territory	Reproduction cork removals	2005	85 000 t
	Reproduction cork price	2005	2.34€/kg
	Virgin cork removals	2005	15 000 t
	Virgin cork price	2005	0.37 €/kg
	Chestnut removals	2005	22 169 t
	Chestnut price	2005	1.13 €/kg *
	Wild honey removals	2005	5 686 t
	Wild honey price	2005	3.4€/kg
	Wild-mushrooms removals	2004	6 500 t
	Wild-mushrooms price	2004	2.5 €/t
	Pine cones removals	2005	65 000 000 cones
	Pine cone average weight	-	325 g/cone
	Pine cones price	2005	0.40 €/cone
	Resin removals	2005	4644 t
	Resin price	2005	0.61€/kg
	Carob removals	2004	31 500 t
	Carob price	2004	0.2723 €/kg
	Game harvest removals	2000	2634 t
Game harvest price	2000	14.0€/kg**	

\* Average price of different regional prices.

\*\* Weighted average price of different game species.

## 12.3 Analysis and processing of national data

### 12.3.1 Calibration

Calibration is not required.

### 12.3.2 Estimation and forecasting

Estimation and forecasting are not required.

### 12.3.3 Reclassification into FRA 2010 categories

Reclassification is not required.

## 12.4 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>	Cork	<i>Quercus suber</i>	t	100 000	203 993	5
2 <sup>nd</sup>	Game Harvest	<i>Orientalis cuniculus</i> ; <i>Alectoris rufa</i>	t	2 634	36 835	9
3 <sup>rd</sup>	Pine cones	<i>Pinus pinea</i>	t	21 125	26 000	1
4 <sup>th</sup>	Chestnuts	<i>Castanea sativa</i>	t	22 169	25 014	1
5 <sup>th</sup>	Wild-honey	<i>Apis mellifera</i>	t	5 686	19 332	11
6 <sup>th</sup>	Edible wild mushrooms	<i>Hydnum repandum</i> ; <i>Cantharellus tubaeformis</i> ; <i>Cantharellus lutescens</i> ; <i>Craterellus cornucopioides</i> ; <i>Lactarius deliciosus</i> ; <i>Thicholoma equestre</i> ; <i>Boletus edulis</i>	t	6 500	16 250	1
7 <sup>th</sup>	Carob	<i>Ceratonia siliqua</i>	t	31 500	8 577	1
8 <sup>th</sup>	Resin	<i>Pinus pinaster</i> ; <i>Pinus pinea</i>	t	4 644	1 416	7
9 <sup>th</sup>						
10 <sup>th</sup>						
All other plant products						
All other animal products						
<b>TOTAL</b>					337 418	

	2005
Name of local currency	Euros

## 12.5 Comments to Table T12

Variable / category	Comments related to data, definitions, etc.
10 most important products	
Other plant products	There is no statistical sources to estimate this variable
Other animal products	There is no statistical sources to estimate this variable
Value by product	All unit prices in escudos were converted to euros.
Total value	

Other general comments to the table

## 13 Table T13 – Employment

### 13.1 FRA 2010 Categories and definitions

Category	Definition
Full-time equivalents (FTE)	A measurement equal to one person working full-time during a specified reference period.
Employment	Includes all persons in paid employment or self-employment.
Paid employment	Persons who during a specified reference period performed some work for <u>wage or salary</u> in cash or in kind.
Self-employment	Persons who during a specified reference period performed some work for <u>profit or family gain</u> in cash or in kind (e.g. employers, own-account workers, members of producers' cooperatives, contributing family workers).

### 13.2 National data

#### 13.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
ILO statistics of Employment in forestry, logging and related services, 2003		Employment in primary production of goods		Employment in forestry, logging and related services (secondary data reported at FRA 2005)
Gabinete de Estratégia e Planeamento - SISED – Ministério do Trabalho e da Solidariedade Social – National employment statistics	H	Employment in primary production of goods (full-time equivalents; Employment Paid; Self-employment)	2005	These statistics do not include workers related to part of the forest support services, as forest inventory, forest management, timber assessment and forest pest control. The national employment statistics do not provide data for these types of workers.

#### 13.2.2 Classification and definitions

The ILO statistics provide aggregated data for the employment in forestry, logging and related service activities.

The national employment statistics provides individualized data for the following national professions classes (CNP):

- 6.1.4.1 – Forest workers
- 9.2.1.2 – Forest workers with no qualification
- 6.1.2.3 – Beekeepers
- 5.1.6.1 – Fire fighters
- 6.1.1.2.15 – Cork extractor
- 6.1.4.2.10 – Resin extractor
- 8.3.3.1.90 – Other agriculture and forest heavy machinery drivers

### 13.2.3 Original data

Category	FRA Category	Reference year		
		1990	2000	2005
Total employment in forestry, logging and related services	Total employment	16192	10990	
CNP 6.1.4.1 – Forest workers	Paid employment			2184
CNP 9.2.1.2 – Forest workers with no qualification	Paid employment			1371
CNP 6.1.2.3 – Beekeepers	Paid employment			559
CNP 5.1.6.1 – Fire fighters	Paid employment			2734
CNP 6.1.1.2.15 – Cork extractor	Paid employment			56
CNP 6.1.4.2.10 – Resin extractor	Paid employment			35
CNP 8.3.3.1.90 – Other agriculture and forest heavy machinery drivers	Paid employment			410
CNP 6.1.4.1 – Forest workers	Self-employment			257
CNP 9.2.1.2 – Forest workers with no qualification	Self-employment			5
CNP 6.1.2.3 – Beekeepers	Self-employment			18
CNP 5.1.6.1 – Fire fighters	Self-employment			0
CNP 6.1.1.2.15 – Cork extractor	Self-employment			7
CNP 6.1.4.2.10 – Resin extractor	Self-employment			1
CNP 8.3.3.1.90 – Other agriculture and forest heavy machinery drivers	Self-employment			3

## 13.3 Analysis and processing of national data

### 13.3.1 Calibration

Calibration is not required.

### 13.3.2 Estimation and forecasting

Estimation and forecasting is not required.

### 13.3.3 Reclassification into FRA 2010 categories

The ILO figures, as well as the GEP/MTSS statistics are considered to belong to the FRA 2010 category Primary production of goods, although none of them exactly matches this definition.

## 13.4 Data for Table T13

FRA 2010 Category	Full Time Employment (1000 person-years)		
	1990	2000	2005
<b>Employment in primary production of goods</b>	16.2	11.0	7.64
...of which paid employment	n.a.	n.a.	7.35
... of which self-employment	n.a.	n.a.	0.29
<b>Employment in management of protected areas</b>	n.a.	n.a.	n.a.



### 13.5 Comments to Table T13

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Employment in primary production of goods		Different data sources were used between 1990/2000 and 2005. Nevertheless, the reported trend is consistent with the social change whit in the primary sector.
Paid employment / self-employment		
Employment in management of protected areas		

<b>Other general comments to the table</b>
The 1990 and 2000 values reported in FRA 2005 were adopted in this report.

## 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 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	2006	
	Reference to document	Estratégia Nacional para as Florestas (Resolução do Conselho de Ministros n.º 114/2006)	
<b>National forest programme (nfp)</b>	<input checked="" type="checkbox"/>	Yes	
	<input type="checkbox"/>	No	
If Yes above, provide:	Name of nfp in country	No name (please read the <i>comments to table</i> section)	
	Starting year	1996	
	Current status	<input type="checkbox"/>	In formulation
		<input checked="" type="checkbox"/>	In implementation
		<input type="checkbox"/>	Under revision
Reference to document or web site	Process temporarily suspended		
<b>Law (Act or Code) on forest with national scope</b>	<input type="checkbox"/>	Yes, specific forest law exists	
	<input checked="" type="checkbox"/>	Yes, but rules on forests are incorporated in other (broader) legislation	
	<input type="checkbox"/>	No, forest issues are not regulated by national legislation	
If Yes above, provide:	Year of enactment	1996	
	Year of latest amendment	Has never been amended	

	Reference to document	Lei de Bases da Política Florestal (Lei n.º 33/96, de 17 de Agosto)
<p><b>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></p>		
<b>Sub-national forest policy statements</b>		Yes
	X	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>	X	Yes
		No
If Yes above, indicate the number of regions/states/provinces with Laws on forests		3

### 14.3 Comments to Table T14

Variable / category	Comments related to data, definitions, etc.
Forest policy statement with national scope	
National forest programme (nfp)	Portugal understands a NFP as an iterative <u>process</u> , - that takes on board instruments reflecting current needs - <u>not necessarily formal</u> and not a static and closed document, <u>in line with the “proposals for action of the IPF”, which is the only international consensus regarding the NFP principles and concept</u> . Portugal always had instruments (varied in nature) that ruled and supported forest management, regardless of the nomenclature used. On the other hand, the principles of <u>NFP</u> further translated to the European conditions by the Vienna Resolution 1 of the MCPFE are the ones that have been ruling the development of the Portuguese forest policy, even before the Vienna Conference. It is somehow difficult to indicate a precise year, but we could point out 1996 as crucial, as it was the year of approval of the Forest Policy Act (unanimously by the Parliament) and the starting process of the National Plan for the Sustainable Development of the Portuguese Forests, that followed it. Since then, the forest policy process has been in permanent monitoring, reviewing and adjustment, leading to the new Forest Strategy approved in 2006. We can't therefore classify its “current status”, as the <u>NFP</u> is composed of several different instruments (legislation, plans, and programs) and each one is in a different phase in a permanent, iterative, process.
Law (Act or Code) on forest with national scope	A New forest Code was recently approved (Decree-Law 254/2009).
Sub-national forest policy statements	
Sub-national Laws (Acts or Codes) on forest	

Other general comments to the table

## 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 Data for Table T15

**Table 15a – Institutions**

FRA 2010 Category	2008	
Minister responsible for forest policy formulation : please provide full title	Minister of Agriculture, Rural Development and Fisheries	
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	Inexistent	
Institution(s) responsible for forest law enforcement	Autoridade Florestal Nacional; Direcção Regional dos Recursos Florestais (Azores); Direcção Regional de Florestas (Madeira); Instituto da Conservação da Natureza e da Biodiversidade; Guarda Nacional Republicana	

**Table 15b – Human resources**

FRA 2010 Category	Human resources within public forest institutions					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Total staff	1992	17.7%	2778	27.0%	1623	36.2
...of which with university degree or equivalent	160	47%	381	41.5%	361	40.4

Notes:

1. Includes human resources within public forest institutions at sub-national level

2. Excludes people employed in State-owned enterprises, education and research, as well as temporary / seasonal workers.

### 15.3 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	The reported values include: Autoridade Florestal Nacional; Direcção Regional dos Recursos Florestais (Azores); Direcção Regional de Florestas (Madeira).	The increase from 2000 to 2005 was (at least to some extent) the result of a reorganization within the Ministry of Agriculture, which led to an allocation of human resources from agriculture departments to forestry departments. The decrease from 2005 to 2008 is due (at least to some extent) to the forest rangers unit from the <i>Autoridade Florestal Nacional</i> to the Republican National Guard, as well as to a government workers mobility programme which led to a reduction of the forest human resources.

#### Other general comments to the table

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## 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 a 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
Direcção-Geral do Ensino Superior – Estatísticas de Diplomados (national graduation statistics)	H	Master's degree (MSc) or equivalent; Bachelor's degree (BSc) or equivalent	2000, 2005 and 2007	The 2008 statistics are not yet available. These statistics were substituted by the 2007 statistics.

### 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	124	52.4	210	56.2	125	55.2
Bachelor's degree (BSc) or equivalent	51	58.8	0	n.a.	23	56.5
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)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Master's degree (MSc) or equivalent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bachelor's degree (BSc) or equivalent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

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	There are no available statistics concerning forest technician certificate/diploma graduations.	The 2008 statistics are not yet available. These statistics were substituted by the 2007 statistics.
Professionals working in public forest research centres		

#### Other general comments to the table

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## 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
IFAP – Public forestry total payments	H	Public expenditure in forest	2000 and 2005	Statistics for the year 2000 were incomplete, so the 2001 statistics were used.
AFN, DRRF and DRF expenditures	H	Public expenditure in forest	2000 and 2005	
AFN forest revenues	H	Forest revenues	2000 and 2005	

#### 17.2.2 Classification and definitions

The FRA2010 definitions were used



### 17.2.3 Original data

Original data is directly reported in 17.4.

## 17.3 Analysis and processing of national data

### 17.3.1 Calibration

Calibration is not required.

### 17.3.2 Estimation and forecasting

Estimation and forecasting are not required.

### 17.3.3 Reclassification into FRA 2010 categories

Reclassification is not required.

## 17.4 Data for Table T17

Table 17a - Forest revenues

FRA 2010 Categories	Revenues (1000 local currency)	
	2000	2005
Forest revenue	5 720	12 495

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	19 369	46 140	1	708	19 370	46 848
Transfer payments	38 994	51341	15 271	27821	54 265	79 162
<b>Total public expenditure</b>	<b>58 363</b>	<b>97 481</b>	<b>15 272</b>	<b>28 529</b>	<b>73 635</b>	<b>126 010</b>
If transfer payments are made for forest management and conservation, indicate for what specific objective(s) - Please tick all that apply.	<input checked="" type="checkbox"/>	Reforestation				
	<input checked="" type="checkbox"/>	Afforestation				
	<input type="checkbox"/>	Forest inventory and/or planning				
	<input checked="" type="checkbox"/>	Conservation of forest biodiversity				
	<input checked="" type="checkbox"/>	Protection of soil and water				
	<input checked="" type="checkbox"/>	Forest stand improvement				
	<input type="checkbox"/>	Establishment or maintenance of protected areas				
	<input type="checkbox"/>	Other, specify below				

**17.5 Comments to Table T17**

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest revenue	The reported values concerns AFN.	
Operational expenditure	The reported values of domestic funding of operational expenditure concerns AFN, DRF and DRRF. The reported values of external funding of operational expenditure concerns as well the INRB (Instituto Nacional de Recursos Biológicos).	
Transfer payments		

Other general comments to the table