



**Forestry Department**

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

**GLOBAL FOREST RESOURCES  
ASSESSMENT 2010**

**COUNTRY REPORT**

**SERBIA**

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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.

## Contents

1	TABLE T1 – EXTENT OF FOREST AND OTHER WOODED LAND.....	5
2	TABLE T2 – FOREST OWNERSHIP AND MANAGEMENT RIGHTS.....	8
3	TABLE T3 – FOREST DESIGNATION AND MANAGEMENT.....	12
4	TABLE T4 – FOREST CHARACTERISTICS.....	18
5	TABLE T5 – FOREST ESTABLISHMENT AND REGENERATION.....	21
6	TABLE T6 – GROWING STOCK.....	23
7	TABLE T7 – BIOMASS STOCK.....	26
8	TABLE T8 – CARBON STOCK.....	28
9	TABLE T9 – FOREST FIRES.....	30
10	TABLE T10 – OTHER DISTURBANCES AFFECTING FOREST HEALTH AND VITALITY.....	33
11	TABLE T11 – WOOD REMOVALS AND VALUE OF REMOVALS.....	37
12	TABLE T12 – NON-WOOD FOREST PRODUCTS REMOVALS AND VALUE OF REMOVALS.....	40
13	TABLE T13 – EMPLOYMENT.....	43
14	TABLE T14 – POLICY AND LEGAL FRAMEWORK.....	45
15	TABLE T15 – INSTITUTIONAL FRAMEWORK.....	47
16	TABLE T16 – EDUCATION AND RESEARCH.....	49
17	TABLE T17 – PUBLIC REVENUE COLLECTION AND EXPENDITURE.....	51

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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
FAOSTAT	M	Land area	2005	
State Statistical Office	M	Forest cover	1990, 2000, 2007	Statistical Bulletin "Forestry"; national census from year 1979; incomplete national inventory data from 2008. Not completely comparative with main classes.
Faculty of Forestry	M/L	Forest cover	2007	Available data from forest management plans.
Public Enterprises "Srbijasume" and "Vojvodinasume"	M	Forest cover	2008	Official data of two PE's.
National Forest Inventory	H/M	Forest cover Forest origin	2008	

### 1.2.2 Classification and definitions

National class	Definition
Forest	A forest is every area over 5 are covered with forest trees in the form of stands having a protective function but is used for production of forest assortments or has a special purpose. Tree line paths, parks in inhabited places, forest tree nurseries, and groups of forest trees on an area under 5 are are not considered a forest.
High forest	High forests are those originated mainly from seed.
Coppice	Coppices are forests, which originated mainly from shoots from stumps.
Shrubs	Shrubs are devastated coppices of small growth and stunted trees mostly used for grazing and browsing of livestock.
Bushes	Bushes (shrubberies) are devastated coppices where bushes prevail.
Maquis	Specific degradation forms in Mediterranean areas. Maquis are evergreen coppices originated by repression of English oak in the Mediterranean climatic zone of our country.
Other forest land (OFL)	Land which is predominantly used for forestry purposes, but without trees on it, and available for afforestation.

### 1.2.3 Original data

	Total country area 1000 ha	Forest area 2008			Forest cover %	Other wooded land 1000 ha
		1000 ha	%	per inhabitant ha		
Serbia	8,836	2,713	100.0	0.36	30.7	410
Central	5,597	2,098	77.3	0.38	37.5	ID
Vojvodina	2,151	154	5.7	0.08	7.2	ID
Kosovo & Metohija	1,089	461	17.0	0.24	42.3	ID

	Total country area 1000 ha	Forest area 2005			Forest cover %	Other wooded land 1000 ha
		1000 ha	%	per inhabitant ha		
Serbia	8,836	2,476	100.0	0.33	28.2	521
Central	5,597	1,944	78.5	0.36	34.7	ID
Vojvodina	2,151	103	4.2	0.05	4.8	ID
Kos.&Metoh	1,089	429	17.3	0.22	39.4	ID

	Total country area 1000 ha	Forest area 2000			Forest cover %	Other wooded land 1000 ha
		1000 ha	%	per inhabitant ha		
Serbia	8,836	2,460	100.0	0.32	27.8	521
Central	5,597	1,943	79.0	0.31	34.7	ID
Vojvodina	2,151	101	4.1	0.05	4.7	ID
Kos.&Metoh	1,089	416	16.9	0.27	38.2	ID

Cultivation form (2008)	1000 ha	Structure, as %
High forest	794	29.3
Coppices	1,630	60.1
Artificial forests	289	10.6
Total	2,713	100.0

## 1.3 Analysis and processing of national data

### 1.3.1 Calibration

Concerning source of national data and FAOSTAT, it is important to emphasise fact that Republic of Serbia for the first time has unique data provided by National Forest Inventory and for the first time present data only for Serbia, respectively. Nevertheless, leaded by mentioned facts, opinion of National Correspondent is that Calibration is not needed for this reporting period since there are no data from previous period for comparison. For next reporting periods year 2010 will be the referent year for Serbia data.

### 1.4 Data for Table T1

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	2,313	2,460	2,476	2,713
Other wooded land	287	521	521	410
Other land	6,146	5,765	5,749	5,623
...of which with tree cover	272	257	256	75
Inland water bodies	90	90	90	90
<b>TOTAL</b>	<b>8,836</b>	<b>8,836</b>	<b>8,836</b>	<b>8,836</b>

### 1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest	Basis for Kosovo and Metohija data provided from State statistical office (year 1996/97), as well as census of 1979 and available data from forest inventory in 2005. Original data refers year 2000, since it is collected and calculated according to the FRA 2000 methodology (including shrubs, bushes and maquis in total forest areas)	Differences in forest areas in years 1990 and 2000, arisen because of 10,000 ha of planted forests in 10 years period (afforestation) Significantly reducing of total forest areas for year 2005, arisen because of entirely using of European criteria and terminology, whereas shrubs, bushes and maquis are now in category other wooded land, Significantly reducing of total forest areas for year 2010, arisen because of Montenegro independence.  The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Other wooded land	Area increased for 2005, because of FRA 2005 definitions (shrubs, bushes and maquis excluded from forest areas)	The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Other land	For FRA 2010 only data for Serbia is used (before was data for Serbia and Montenegro)	
Other land with tree cover	Data used form National forest inventory from 2008.	The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Inland water bodies	Data from National Forest Inventory	

#### Other general comments to the table

Years 1990, 2000 and 2005 contains data from Statistical Office, while year 2010 contains data from National Forest Inventory.

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

Field inventory	2007/2008
Remote sensing survey / mapping	

## 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 ( <i>sub-category of Private ownership</i> )	Forest owned by individuals and families.
Private business entities and institutions ( <i>sub-category of Private ownership</i> )	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 ( <i>sub-category of Private ownership</i> )	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 ( <i>sub-category of Private ownership</i> )	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
State Statistical Office	M	Ownership category	1990, 2000, 2007	Statistical Bulletin "Forestry"; national census from year 1979; national inventory data from 2008. Not completely comparative with main classes.
Faculty of Forestry	M/L	Ownership category	2007	Unofficial data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Ownership category	2008	Official data of two PE's, but for some of main classes.
Directorate of Forests of Serbia	L	Ownership category	2008	Secondary information of ownership category
National Forest Inventory	H/M	Forest cover Forest origin	2008	Data from national forest inventory

### 2.2.2 Classification and definitions

National class	Definition
Private ownership	Land owned by individuals, but also religious communities.
State ownership	Land owned by the State or government-owned institutions or co-operatives or other public bodies including cities and educational institutions.
Other types of ownership	Unspecified ownership (areas of unknown ownership) in Kosovo and Metohija

### 2.2.3 Original data

Encompassed in the table T2.

## 2.3 Analysis and processing of national data

### 2.3.1 Calibration

Not applicable.

### 2.3.2 Estimation and forecasting

Not needed.

### 2.3.3 Reclassification into FRA 2010 categories

National Classes of Ownership	Percentage of a National Class belonging to a FRA Class		
	Public Ownership	Private Ownership	Other or unspecified ownership
	%		
Forests	51.0	45.0	4.0

## 2.4 Data for Table T2

**Table 2a - Forest ownership**

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Public ownership	1,143	1,246	1,252	1,382
Private ownership	1,170	1,214	1,224	1,213
...of which owned by individuals	1,170	1,214	1,224	1,213
...of which owned by private business entities and institutions	0	0	0	0
...of which owned by local communities	0	0	0	0
...of which owned by indigenous / tribal communities	0	0	0	0
Other types of ownership	0	0	0	118
<b>TOTAL</b>	<b>2,313</b>	<b>2,460</b>	<b>2,476</b>	<b>2,713</b>

Note: If other type of ownership is 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 checked="" type="checkbox"/>	Yes
	<input type="checkbox"/>	No
If No above, please describe below how the two differ:		

Ownership	Area (1000 hectates)							
	1990		2000		2005		2010	
	Forest	OWL	Forest	OWL	Forest	OWL	Forest	OWL
Private ownership	1,170	41	1,214	103	1,224	103	1,213	206
Public ownership	1,143	246	1,246	418	1,252	418	1,382	204
Other ownership	-	-	-	-	-	-	118	-
<b>TOTAL</b>	<b>2,313</b>	<b>287</b>	<b>2,460</b>	<b>521</b>	<b>2,476</b>	<b>521</b>	<b>2,713</b>	<b>410</b>

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

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2008
Public Administration	1,143	1,246	1,252	1,382
Individuals	0	0	0	0
Private corporations and institutions	0	0	0	0
Communities	0	0	0	0
Other	0	0	0	0
<b>TOTAL</b>	<b>1,143</b>	<b>1,246</b>	<b>1,252</b>	<b>1,382</b>

## 2.5 Comments to Table T2

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Public ownership		
Private ownership		
Other types of ownership	Unspecified ownership (areas of unknown ownership) in Kosovo and Metohija	
Management rights		

Other general comments to the table
<p>Basis for Kosovo and Metohija data provided from State statistical office, as well as from census of 1979 and available data from forest inventory in Kosovo and Metohija 2005, provided by Norwegian Forestry Group. Significantly reducing of total forest areas arisen by entirely usage of European criteria and terminology, whereas shrubs, bushes and maquis (covers 410,000 ha) are now in category other wooded land</p> <p>Significantly reducing of total forest areas for year 2008, arisen because of Montenegro independence</p> <p>Other type of ownership is identified in Kosovo and Metohija, where was not possible to define the ownership</p>

### 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
FAOSTAT	M/L	Forest cover, Forest plantations	2006	FRA 2005
State Statistical Office	M/L	Forest cover and growing stock	1990, 2000, 2007	Statistical Bulletin "Forestry"; national census from year 1979; national inventory data from 2008. Not completely comparative with main classes.
Faculty of Forestry	M/L	Designated purposes of forests	2004	Collection of available data from forest management plans
Public Enterprises "Srbijasume" and	M/L	Designated purposes of	2006	Official data of two PE's, but for some of main classes.

"Vojvodinasume"		forests		
National Forest Inventory	H/M	Designated forest functions	2008	

### 3.2.2 Classification and definitions

National class	Definition
Production function	Those forest and forest land (other wooded land) designated for maximal production and utilisation of productive potentials of stands without conflicts.
Protective function	Forest complexes with different type of protection as a main purpose of management.
Biodiversity conservation	Forest and forest land (other wooded land) designated for biodiversity conservation as well as biotope protection (conservation).
Recreational forests	Forests and forest land (other wooded land) designated for provision of recreational service as a part of social function.
Multiple function	Forest and forest land (other wooded land) designated as combination of different functions like: production of goods, protection of soil and water, conservation of biodiversity and provision of social services and where none of these alone can be considered as being significantly more important than the others.
No or unknown function	Forest and forest land (other wooded land) for which a specific function has not been designated or where designated function is unknown.

### 3.2.3 Original data

	10 Forests and forest land with productive function	31,600.0
	11 Forests and forest land with productive-protection function	23,600.0
	12 Forests with protection function	8,400.0
	16 Nature park	2,000.0
	17 National Parks	10,800.0
	21 Special nature reserve	800.0
	27 Teaching base	1,200.0
<b>1 High natural stands</b>	<b>TOTAL</b>	<b>621,200.0</b>
	10 Forests and forest land with productive function	109,200.0
	11 Forests and forest land with productive-protection function	71,200.0
	12 Forests with protection function	18,400.0
	13 Forests for recreation and other culture and education function	400.0
	14 Picnic area	400.0
	16 Nature park	3,600.0
	17 National Parks	19,200.0
	19 Game park	2,800.0
	23 Game reservation	1,600.0
<b>2 Natural coppice stands</b>	<b>TOTAL</b>	<b>1,456,400.0</b>
	10 Forests and forest land with productive function	4,000.0
	11 Forests and forest land with productive-protection function	5,600.0
	12 Forests with protection function	400.0
	16 Nature park	400.0
	24 Forests with special defense purpose	400.0
	27 Teaching base	400.0
<b>3 Artificially established stands</b>	<b>TOTAL</b>	<b>174,800.0</b>
<b>TOTAL</b>		<b>2,252,400.0</b>

Source: National Forest Inventory 2008.

PURPOSE	AREA (ha)
Forests and forest stands with productive function	1,704,855
Forests and forest stands with productive-protection function	100,400
Forests with priority protection function	27,200
Protected natural areas <sup>1</sup>	412,745
Game parks and reserves	4,400
Forests designated for recreation and with cultural and educational functions	800
Educational base	1,600
Forests designated for country defense	400
<b>TOTAL</b>	<b>2,252,400</b>

Without data for Kosovo and Metohija

<sup>1</sup> Source: Nature Protection Office of the Republic of Serbia

#### Data for Kosovo and Metohija

PURPOSE	AREA (ha)
Forests and forest stands with productive function	371,087
Forests and forest stands with productive-protection function	49,080
Protected natural areas <sup>1</sup>	39,000
Game parks and reserves	1,633
<b>TOTAL</b>	<b>460,800</b>

Source: Internal data from PE "Srbijasume" and data from "The National Forest Inventory of the Republic of Serbia-the growing stock of the Republic of Serbia" (2009)

<sup>1</sup> Source: Nature Protection Office of the Republic of Serbia

FRA 2005 Categories / Designated function*	Area (1000 hectares)		
	Primary function		
	1990	2000	2005
<b>Forest</b>			
Production	2,416	2,379	1,865
Protection of soil and water	229	281	671
Conservation of biodiversity	135	137	140
Social services	52	64	69
Multiple purpose	ID	33	65
No or unknown function	52	ID	ID
<b>Total - Forest</b>	<b>2,884</b>	<b>2,894</b>	<b>2,810</b>

\*Data for Serbia and Montenegro

### 3.3 Analysis and processing of national data

#### 3.3.1 Reclassification into FRA 2010 categories

National Classes	Percentage of a National Class belonging to a FRA Class				
	Productive function	Protection function	Conservation function	Social function	Multifunctional
	%				
Forests	88	6	6	0	0
OWL	54	33	4	6	3

#### 3.4 Data for Table T3

Table 3a – Primary designated function

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production	2,013	1,952	1,628	2,402
Protection of soil and water	125	286	586	177
Conservation of biodiversity	123	125	128	126
Social services	52	64	69	2
Multiple use	0	33	65	6
Other (please specify in comments below the table)	0	0	0	0
No / unknown	0	0	0	0
<b>TOTAL</b>	<b>2,313</b>	<b>2,460</b>	<b>2,476</b>	<b>2,713</b>

Table 3b – Special designation and management categories

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Area of permanent forest estate	2,313	2,460	2,476	2,713
Forest area within protected areas	ID	239	380	452
Forest area under sustainable forest management	1,143	1,246	1,252	1,236
Forest area with management plan	2,313	1,999	1,985	2,252

### 3.5 Comments to Table T3

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Production		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Protection of soil and water		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Conservation of biodiversity	Regarding to Law on Nature Protection, there are three levels/degrees of nature protection, while biodiversity conservation is achieved in 1st and 2nd degrees.	The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Social services		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Multiple use		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Other		
No / unknown designation		
Area of permanent forest estate	Area of permanent forest estate was clearly defined in national Law of Forests where is emphasized that reduction of forest area is forbidden (whit rare exceptions in specific cases related with general/public interest).	
Forest area within protected areas		
Forest area under sustainable forest management	Main criteria for SFM are area of state forests managed by management plans by public enterprises where improvement of forest stands is visible and emphasised by forest users (public enterprises). Difference between data in T2b and T3b is because of 146,000 ha of forests in Kosovo & Metohija and forests near administrative borders with K&M with large pressure of illegal logging.	
Forest area with management plan	Differences between year 1990, and later period clearly shows the economic situation in state for this period when forest management plans were created only for state forests and in very low extent for private forests. Also, it is visible improvement of situation if we compare situation in 2000 and 2010	

**Other general comments to the table**

Basis for years 1990, 2000 and 2005 was Statistical Office, while data for year 2010 is from National Forest Inventory

In Table 3b, under the lines "Forest area under sustainable forest management" and "Forest area with management plan", for years 2000 and 2005, include data for Kosovo and Metohija, but based on experts estimation relayed on data from previous period (~1995-2000) for state forests with an estimation for private forests

Qualification of specific functional purposes was done according to the spatial disposal and define categorisation, using more strict criteria

Collection of data provided from NFI and forest management plans for the central part of Serbia, Autonomous Province Vojvodina and National Parks

Available data from Kosovo and Metohija used from forest inventory provided by NFG in 2005, and by estimation and forecasting.

## 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
State Statistical Office	L	Forest characteristics	1990, 2007	Statistical Bulletin "Forestry"; national census from year 1979; national inventory data from 2008. Not completely comparative with main classes.
Faculty of Forestry	M/L	Designated purposes of forests	2004	Collection of available data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Designated purposes of forests	2006	Official data of two PE's, but for some of main classes.
National Forest Inventory	H/M	Forests by naturalness	2008	

#### 4.2.2 Classification and definitions

National class	Definition
Primary forests	Forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Semi-natural forests	Forest of naturally regenerated native species where there are clearly visible indications of human activities, as well as forests established through planting, seeding or assisted natural regeneration.
Plantations	Forest of native species and in some cases introduced species, established through planting or seeding mainly for production of wood or non wood goods, as well as protecting functions mainly for soil protection.

#### 4.2.3 Original data

Forest origin	Area			
	Total ha	Forests		% of TOTAL
		ha	%	
Other land	6,122,900.0	-	-	69.3
1. High natural stands	794,600.0	794,600.0	29.3	9.0
2. Natural coppice stands	1,656,877.0	1,656,877.0	61.1	18.8
3. Artificially established stands	180,123.0	180,123.0	6.6	2.0
4. Unknown origin	81,600.0	81,600.0	3.0	3.0
<b>TOTAL SERBIA</b>	<b>8,836,100.0</b>	<b>2,713,200.0</b>	<b>30.7</b>	<b>0.9</b>

Source: National Forest Inventory (2008) and PE "Srbijasume"

#### 4.3 Analysis and processing of national data

Reported figures have been taken from National forest inventory.

#### 4.4 Data for Table T4

Table 4a

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest	1	1	1	1
Other naturally regenerated forest	2,273	2,420	2,436	2,532
...of which of introduced species	0	0	0	-
Planted forest	39	39	39	180
...of which of introduced species	0	0	0	-
<b>TOTAL</b>	<b>2,313</b>	<b>2,460</b>	<b>2,476</b>	<b>2,713</b>

Table 4b

FRA 2010 Categories	Area (1000 hectares)			
	1990	2000	2005	2010
Rubber plantations (Forest)	0	0	0	0
Mangroves (Forest and OWL)	0	0	0	0
Bamboo (Forest and OWL)	0	0	0	0

#### 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		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Rubber plantations		
Mangroves		
Bamboo		

#### Other general comments to the table

Data for previous period are available for Socialistic Federative Republic of Yugoslavia, for Federal Republic of Yugoslavia, or for Serbia and Montenegro as a whole, and present in proposed table for Serbia is possible only in accordance with previously adopted criteria.

Differences in class of plantations and planted forests, arisen because of different national classification in Serbia for previous years (1990, 2000, 2005), where plantations are artificially established stands no older than 20 years. All other artificially established stands older than 20 years are forest.

Also, previous reporting years are emphasised data from Kosovo and Metohija, while for last reporting years there are no accurate data for K&M.

## 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
State Statistical Office	L/M	Afforestation data	1990, 1998, 2001, 2007	Statistical Bulletin "Forestry"; national census from year 1979; national inventory data from 2008. Not completely comparative with main classes.
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Afforestation data	2006	Official data of two PE's, but for some of main classes.
National Forest Inventory	H/M	Afforestation data	2008	

#### 5.2.2 Classification and definitions

National class	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).

#### 5.2.3 Original data

Region	Afforestation performed in period:										
	1946-1954.	1955-1960.	1961-1965.	1966-1970.	1971-1975.	1976-1980.	1981-1985.	1986-1990.	1991-1995.	1995-2000.	2001-2006.
Central Serbia		19,636	31,910	33,247	29,275	64,722	73,356	42,526	24,476	7,380	4,683
Vojvodina		19,103	26,745	14,835	7,511	9,336	15,512	12,145	2,323	701	1,652
Kosovo & Metoh.		1,708	1,175	4,651	3,034	7,360	8,978	5,517	978	295	-
Total	65,616	40,477	59,830	52,733	39,802	81,418	97,846	60,188	27,777	8,376	6,335
Annually	6,562	6,741	11,966	10,547	7,960	16,284	19,569	12,038	5,555	1,675	1,056
<b>Total 1946-2006.</b>	<b>540,368</b>										

### 5.3 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	12,038	1,675	1,056	ID	ID	ID
Reforestation	ID	ID	ID	ID	ID	ID
...of which on areas previously planted	ID	ID	ID	ID	ID	ID
Natural expansion of forest	ID	ID	ID	ID	ID	ID

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

### 5.4 Comments to Table T5

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Afforestation	Data for 1990 = average 1986-1990 Data for 2000 = average 1995-2000 Data for 2005 = average 2001-2006	
Reforestation		
Natural expansion of forest		

#### Other general comments to the table

Data collected from different sources (Statistical Office, Public Enterprises, Directorate of Forests, etc), often incompatible.

## 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
FAOSTAT	M	Growing stock	2006	FRA 2005
State Statistical Office	M/L	Forest cover and growing stock	1990, 2000, 2007	Statistical Bulletin "Forestry"; national census from year 1979; national inventory data from 2008.
Faculty of Forestry	M/L	Growing stock	2005	Collection of available data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Growing stock	2007	Official data of two PE's, but for some of main classes.
National Forest Inventory	H/M	Growing stock	2008	Complete national inventory data from 2008.

#### 6.2.2 Classification and definitions

National class	Definition
Growing stock	Volume over bark of all living trees more than 11 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 7 cm, and may also include branches to a minimum diameter of 7 cm.
Growing stock of commercial species	The part of the growing stock of species that are considered as commercial or potentially commercial under current market conditions, and with a diameter at breast height of 11 cm or more.

### 6.2.3 Original data

Stand categories	Area	Volume	Increment
	ha	m3	m3
Broadleaves	2,038,852	317,930,253	7,341,228
Conifers	213,548	44,557,165	1,738,545
TOTAL	2,252,400	362,487,418	9,079,773

Without data for Kosovo and Metohija

Stand categories for Kosovo and Metohija	Area	Volume	Increment
	ha	m3	m3
Broadleaves	-	47,352,000.0	1,172,000.0
Conifers	-	5,543,000.0	192,000.0
TOTAL	460,800.0	52,895,000.0	1,364,000.0

### 6.3 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	235	250	298	415	6	3	3	n.a.
... of which coniferous	24	26	30	50	ID	ID	ID	ID
... of which broadleaved	211	224	268	365	ID	ID	ID	ID
Growing stock of commercial species	ID	ID	251	350	ID	ID	ID	ID

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>Fagus Moesiaca</i>	Beach (Bukva)	120	101	127
2 <sup>nd</sup>	<i>Quercus Cerris</i>	Turkey Oak (Cer)	27	15	18
3 <sup>rd</sup>	<i>Quercus Petraea</i>	Sessile Oak (Kitnjak)	19	11	13
4 <sup>th</sup>	<i>Quercus Robur</i>	Common Oak (Lužnjak)	3	5	4
5 <sup>th</sup>	<i>Picea Abies</i>	Norway Spruce (Smrča)	11	4	3
6 <sup>th</sup>	<i>Quercus Frainetto</i>	Hungarian Oak (Sladun)	3	4	4
7 <sup>th</sup>	<i>Carpinus Betulus</i>	Common Hornbeam (Grab)	3	4	5
8 <sup>th</sup>	<i>Abies Alba</i>	Silver Fir (Jela)	6	3	4
9 <sup>th</sup>	<i>Tilia Argentea</i>	Silver Lime (Srebrna lipa)	2	3	2
10 <sup>th</sup>	<i>Robinia Pseudoacacia</i>	Black Locust (Bagrem)	2	2	3
Remaining			39	98	115
<b>TOTAL</b>			<b>235</b>	<b>250</b>	<b>298</b>

Note: Rank refers to the order of importance in terms of growing stock, i.e. 1<sup>st</sup> is the species with the highest growing stock. Year 2000 is the reference year for defining the species list and the order of the species.

**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)	11	Minimum diameter for coppice forests at breast height is 6 cm
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	7	
Minimum diameter (cm) of branches included in growing stock (W)	7	
Volume refers to “above ground” (AG) or “above stump” (AS)	AG	

#### 6.4 Comments to Table T6

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total growing stock		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Growing stock of broadleaved / coniferous		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Growing stock of commercial species		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Growing stock composition		

Other general comments to the table
Year 2008 (2010) should be a referent year for Serbia because of National Forest Inventory data. Data for year 2000 obtained by original data from FRA 2005 (with exemption of Montenegro). Data for year 2005 obtained by reducing for Montenegro data from FRA 2005.

<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
FAOSTAT	M	Biomass stock	2006	FRA 2005
Faculty of Forestry	M/L	Biomass stock	2004	uncompleted research data; National Forest Inventory data 2008.
National Forest Inventory	H/M	Biomass stock	2008	Complete national inventory data from 2008.

#### 7.2.2 Classification and definitions

National class	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.

### 7.2.3 Original data

Species	GS (mill. m3 o.b)	GS (mill. m3 o.b)	GS (mill. m3 o.b)	WD	BCEF	R	AGB	BGB	DW	TOTAL
Beach	146.85083	15.96300	162.81383	0.58	0.80	0.23	130.2511	29.95774		
Spruce	18.81055	1.40200	20.21255	0.40	0.75	0.29	15.15941	4.396229		
Hornbeam	15.15724	3.70600	18.86324	0.58	1.60	0.23	30.18118	6.941672		
Black Pine	12.65903	2.01900	14.67803	0.42	0.70	0.29	10.27462	2.979639		
Black Locust	11.24394		11.24394	0.55	1.50	0.23	22.01704	5.063919		
Fir	8.30492	1.57700	9.88192	0.40	0.90	0.20	8.893731	1.778746		
Other	50.70874	18.64600	69.35474	0.40	0.65	0.23	45.08058	10.36853		
Turkey Oak	46.98045	5.17600	52.15645	0.58	1.40	0.81	73.01902	59.14541		
Sessile Oak	21.54289	4.27700	25.81989	0.58	1.05	0.28	27.11088	7.591048		
Hungarian Oak	20.98646	0.12900	21.11546	0.58	1.05	0.27	22.17124	5.986234		
Common Oak	9.24237		9.24237	0.58	1.10	0.12	10.16661	1.219993		
Quercus spp.	98.75217	9.58200	108.33417	0.58	1.27	0.36	137.5844	49.53038		
<b>TOTAL</b>	<b>362.48742</b>	<b>52.89500</b>	<b>415.38242</b>		<b>1.15</b>		<b>399.442</b>	<b>111.0169</b>	<b>16.26041</b>	<b>526.7193</b>

### 7.3 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	201.1	227.7	241.7	399.4				
Below-ground biomass	58.5	66.3	70.4	111.0				
Dead wood	36.3	41.2	43.7	16.3				
<b>TOTAL</b>	<b>295.9</b>	<b>335.1</b>	<b>355.8</b>	<b>526.7</b>				

### 7.4 Comments to Table T7

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Above-ground biomass		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Below-ground biomass		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Dead wood	Data for dead wood was taken from National Forest Inventory 2008.	The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.

#### Other general comments to the table

Calculation done in accordance to "Guidelines for Country Reporting to FRA 2010 and forest inventory data. Basis for calculation were National Forest Inventory data 2008.

## 8 Table T8 – Carbon stock

### 8.1 FRA 2010 Categories and definitions

Category	Definition
Carbon in above-ground biomass	Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.
Carbon in dead wood	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in litter	Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm), lying dead in various states of decomposition above the mineral or organic soil.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a specified depth chosen by the country and applied consistently through the time series.

### 8.2 National data

#### 8.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAOSTAT	M	Carbon stock	2006	FRA 2005
Faculty of Forestry	M/L	Carbon stock	2004	Uncompleted research data (not for whole country); National Forest Inventory data 2008.
National Forest Inventory	H/M	Carbon stock	2008	Complete national inventory data from 2008.

#### 8.2.2 Classification and definitions

National class	Definition
Carbon in above-ground biomass	FRA 2010 definition used.
Carbon in below-ground biomass	FRA 2010 definition used.
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.
Carbon in litter	Carbon in all non-living biomass with a diameter less than the minimum diameter of 10 cm, lying dead in various states of decomposition above the mineral or organic soil. This includes the litter, fomic and humic layers.
Soil carbon	Organic carbon in mineral and organic soils in soil profile to a parent rock (substratum).

### 8.2.3 Original data

Forest area 1000 ha	AGB mill. T	BGB mill. T	Carbon fraction	Carbon content in litter	Carbon content in soil	Carbon in AGB	Carbon in BGB	Carbon in DW	Carbon in litter	Soil carbon	Total
				t C/ha		million tonnes					
2,713	399	111	0.47	28	50	187.53	52.17	7.64	75.96	135.65	458.96

### 8.3 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	94.5	107.0	113.6	187.7				
Carbon in below-ground biomass	27.5	31.2	33.1	52.2				
<b>Sub-total: Living biomass</b>	<b>122.0</b>	<b>138.2</b>	<b>146.7</b>	<b>239.7</b>				
Carbon in dead wood	17.1	19.4	20.5	7.7				
Carbon in litter	ID	ID	ID	76.0				
<b>Sub-total: Dead wood and litter</b>	ID	ID	ID	<b>83.7</b>				
Soil carbon	ID	ID	ID	135.6				
<b>TOTAL</b>	ID	ID	ID	<b>459.2</b>				

Soil depth (cm) used for soil carbon estimates	30 cm
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### 8.4 Comments to Table T8

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Carbon in above-ground biomass		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Carbon in below-ground biomass		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Carbon in dead wood		The reported trend for the period 2005-2010 does not reflect an actual change but is rather a result of incompatible datasets.
Carbon in litter		
Soil carbon		

Other general comments to the table
Calculation done in accordance to "Guidelines for Country Reporting to FRA 2010 and forest inventory data.

## 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
FAOSTAT	M	Disturbances	2006	FRA 2005
State Statistical Office	M/L	Damages to forest	1990, 2001, 2008	Statistical Bulletin "Forestry"; national census from year 1979; national inventory data from 2007.
Faculty of Forestry	M/L	Growing stock	2004	Collection of available data from forest management plans;
Forestry Public Enterprises and National Parks	M/H	Forest fires	2006	Official data of all PE's.
National Forest Inventory	H/M	Growing stock	2008	Complete national inventory data from 2008.
Directorate of Forests	H	Forest fires	2005-2008	DF database

#### 9.2.2 Classification and definitions

National class	Definition
Number of forest fires	Number of forest fires per year in the country.
Area affected by forest fires	Area affected by forest fires per year in the country.

## 9.2.3 Original data

Period	Total No. of Fires on Forest, Other Wooded Land, & Other Land	Total Area Burned on Forest, Other Wooded Land, & Other Land	Area of Forest Burned	Area of Other Wooded Land Burned	Human Causes	Natural Causes	Unknown Causes
	No.	ha	ha	ha	% of No.	% of No.	% of No.
1988	25	76	45	31	56	12	32
1989	48	165	14	151	54	0	46
1990	161	2,901	1,131	1,770	52	0	48
1991	85	1,168	427	741	55	0	45
1992	126	654	149	505	36	1	63
1993	259	5,675	1,328	4,347	53	1	46
1994	116	1,009	82	927	51	0	49
1995	21	397	14	383	48	0	52
1996	87	3,201	1,653	1,548	44	0	56
*1997	56	884	15	869	75	0	25
*1998	124	1,749	249	1,500	61	3	36
*1999	26	193	2	191	69	0	31
*2000	339	13,201	1,769	11,432	48	1	51
*2001	54	877	102	775	57	0	43
*2002	134	4,608	1,373	3,235	85	0	15
*2003	102	676	430	246	90	0	10
*2004	22	98	12	86	90	0	10
*2005	15	63	53	10	100	0	0
*2006	29	569	537	31	94	0	6
*2007	482	34,001	16,582	17,419	80	2	18
*2008	45	530	530	-	90	0	10

\* Without data for Kosovo and Metohija  
Source: Directorate of Forests Database

### 9.3 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	1.0	89	4.1	135	7.1	130
... of which on forest	0.3	ID	0.7	ID	3.5	ID
... of which on other wooded land	0.6	ID	3.4	ID	3.6	ID
... of which on other land	ID	ID	ID	ID	ID	ID

**Table 9b**

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

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

### 9.4 Comments to Table T9

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Area affected by fire		
Number of fires	There are no divide statistics regarding number of fires in forests, other wooded land and other land, only overall number of forest fires, affected also all mentioned categories.	
Wildfire / planned fire		

Other general comments to the table
Data for years 1990 and 2000 obtained from Statistical Yearbook of Serbia, while data for year 2005, obtained from Directory of Forests database. Data contains full numbers of all forests from ignition point which caused forest fires.

## 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
FAOSTAT	M	Disturbances	2006	FRA 2005
State Statistical Office	L/M	Damages to insects and diseases	2007	Statistical Bulletin "Forestry"; national census from year 1979; national inventory data from 2007.
Faculty of Forestry	M/L	Growing stock; forest insects and diseases	2004	Collection of available data from forest management plans; data from research and teaching materials
Forestry Public Enterprises and National Parks Public Enterprises	M	Forest insects and diseases	2006	Official data of all PE's.
National Forest Inventory	H/M	Growing stock	2008	Complete national inventory data from 2008.
Directorate of Forests	H	Damages to insects and diseases	2008	Official and accurate data regarding disturbances and damages caused by insects and diseases. DF database

## 10.2.2 Classification and definitions

National class	Definition
Disturbance	Damage caused by any factor (biotic or abiotic) that adversely affects the vigour and productivity of the forest.
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 grazing, physical damage by animals, etc.
Disturbance caused by abiotic factors	Disturbances caused by abiotic factors, such as air pollution, snow, storm, drought, etc.

## 10.2.3 Original data

No	Years		Outbreak duration
	Beginning	Ending	
1.	1862	1865	4
2.	1870	1875	6
3.	1882	1885	4
4.	1889	1894	6
5.	1898	1900	3
6.	1906	1908	3
7.	1911	1914	4
8.	1922	1926	5
9.	1930	1935	6
10.	1939	1942	4
11.	1947	1949	3
12.	1953	1957	5
13.	1963	1966	4
14.	1970	1973	4
15.	1984	1987	4
16.	1995	1998	4
17.	2003	2006	4

Source: R. Marovic at all (1998): "Outbreak of Gipsy Moth in Serbia"

### *Insect outbreak*

Year	Name	Infested areas (1000 ha)	Affected forests
1995	Gipsy Moth	10	All broadleaves
1996	Gipsy Moth	80	All broadleaves
1997	Gipsy Moth	500	All broadleaves
1998	Gipsy Moth	425	All broadleaves
1999	-	-	-
2000	-	-	-
2001	-	-	-
2002	Bark beetle	1	Fir and Spruce
2003	Gipsy Moth	163	All broadleaves
2003	Bark beetle	1	Fir and Spruce
2004	Gipsy Moth	360	All broadleaves
2004	Bark beetle	1	Fir and Spruce
2005	Gipsy Moth	64	All broadleaves

Source: Directorate of Forests (2008)

### 10.3 Data for Table T10

**Table 10a – Disturbances**

FRA 2010 category	Affected forest area (1000 hectares)		
	1990	2000	2005
Disturbance by insects	1	85	118
Disturbance by diseases	-	-	-
Disturbance by other biotic agents	1	-	-
Disturbance caused by abiotic factors	-	-	-
<b>Total area affected by disturbances</b>	<b>2</b>	<b>85</b>	<b>118</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)
Gipsy Moth ( <i>Lymantria Dispar</i> )	<i>Oak forests (Quercus spp), Beach forests (Fagus spp)</i>	2003-2006	650	5
Typographer (Bark-beetle) <i>Ips Typhographus</i> and Bark-beetle ( <i>Pityogenes Chalcographus</i> )	<i>Fir and Spruce forests</i>	2002-2004	1	-

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)
<b>Total forest area affected by woody invasive species</b>	

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

#### 10.4 Comments to Table T10

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Disturbance by insects		
Disturbance by diseases		
Disturbance by other biotic agents		
Disturbance caused by abiotic factors		
Major outbreaks		
Invasive species		

<b>Other general comments to the table</b>
Data provided by Directorate of Forests database. Not enough relevant data regarding woody invasive species.

## 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	M	Wood removal	2006	FRA 2005
State Statistical Office	M	Cutting in forests and outside forests	2007	Statistical Bulletin "Forestry"; national census from year 1979; incomplete national inventory data from 2007.
Forestry Public Enterprises and National Parks Public Enterprises	M	Cutting in forests	2006	Official data of all PE's.
National Forest Inventory	H/M	Growing stock	2008	Complete national inventory data from 2008.
Directorate of Forests	H	Cutting in forests	2008	Data from forest management plans

#### 11.2.2 Classification and definitions

National class	Definition
Total wood stock cut	Gross volume which covers cut industrial, technical wood and fuelwood-all produced forest assortments and total residue, so that they represent the total volume of wood removal measured on stump.
Industrial wood	It has favourable physical and chemical properties, intended for various technical purposes.
Fuelwood	The wood removed for energy production purposes.

#### 11.2.3 Original data

##### Cutting by assortments in Serbia

Year	Total 1000 m <sup>3</sup>	Technical wood 1000 m <sup>3</sup>	Fuelwood 1000 m <sup>3</sup>	Forest residuals 1000 m <sup>3</sup>
1988				
1989				
1990	3,657	1,149	1,761	747
1991				
1992				

1998	2,704	909	1,173	622
1999 <sup>1</sup>	2,459	857	1,337	265
2000 <sup>1</sup>	2,947	1,079	1,260	608
2001 <sup>1</sup>	2,194	931	952	311
2002 <sup>1</sup>	2,745	953	1,223	569
2003 <sup>1</sup>	2,592	985	1,416	191
2004 <sup>1</sup>	2,718	1,027	1,334	357
2005 <sup>1</sup>	2,485	986	1,238	261
2006 <sup>1</sup>	2,610	1,073	1,303	234
2007 <sup>1</sup>	2,341	941	1,238	162

Source: Statistical Office of Serbia

<sup>1</sup>Without data for Kosovo and Metohija

### Cutting by kind of stands in Serbia

Year	Broadleaved 000 m <sup>3</sup>	Coniferous 000 m <sup>3</sup>	Total 000 m <sup>3</sup>
1988			
1989			
1990	3,327	330	3,657
1991			
1992			
1998	2,447	257	2,704
1999 <sup>1</sup>	2,247	212	2,459
2000 <sup>1</sup>	2,653	294	2,947
2001 <sup>1</sup>	1,991	203	2,194
2002 <sup>1</sup>	2,547	198	2,745
2003 <sup>1</sup>	2,400	193	2,593
2004 <sup>1</sup>	2,526	192	2,718
2005 <sup>1</sup>	2,274	211	2,485
2006 <sup>1</sup>	2,393	217	2,610
2007 <sup>1</sup>	2,027	220	2,247

Source: Statistical Office of Serbia

<sup>1</sup>Without data for Kosovo and Metohija

### 11.3 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.)	1,149	946	1,002	1,761	1,189	1,306
... of which from forest	1,149	946	1,002	1,585	1,070	1,175
Unit value (local currency / m <sup>3</sup> o.b.)	800	3,271	4,514	400	1,308	2,708
Total value (1000 local currency)	919,200	3,094,366	4,522,777	704,400	1,555,688	3,536,875

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.

	1990	2000	2005
Name of local currency	YUD	YUD	CSD

#### 11.4 Comments to Table T11

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

Other general comments to the table
Data obtained by Statistical Yearbooks of Serbia and from Public Enterprises for management of forests.

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

### 12.1 FRA 2010 Categories and definitions

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

### NWFP categories

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

### 12.2 National data

#### 12.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAOSTAT	M/L	Non-wood forest product removal	2004	GFRA 2005
Statistical Office	L	Utilisation of non-wood forest products	2005	Statistical bulleting "Forestry"; Statistical Yearbooks.
Nature Protection Institute of the Republic of Serbia	L	Utilisation of non-wood forest products	2005	Report of trade of mushrooms, plants and animals under collection control.
Hunting organisation of Serbia	M	Utilisation and hunting of game	2005	HOS database
Faculty of Forestry		NWFP	2005	FoF database

## 12.2.2 Classification and definitions

National class	Definition
Non-Wood Forest Products	Non-wood forest products are forest products for human or animal consumption or for industrial purposes.

## 12.2.3 Original data

Plant products/raw material	Ref. year	Plant products/raw material		Animal products/raw material	Ref. year	Animal products/raw material	
		Unit	pcs			Unit	pcs
Christmas trees	2005	1000 pcs	50.0	Wild meet	2005	tonnes	909.1
	2000		75.0		2000		4,171.9
	1990		-		1990		5,738.1
Mushrooms	2005	tonnes	5,498.1	Game shot	2005	1000 pcs	331.3
	2000		2,300.0		2000		303.0
	1990		-		1990		1,199.0
Fruits and berries	2005	tonnes	107.8	Hides, skins and trophies	2005	1000 pcs	10.6
	2000		193.2		2000		5.3
	1990		119.0		1990		12.8
Herbs and aromatic plants	2005	tonnes	18.3	Wild honey and bee-wax	2005	tonnes	3,665.0
	2000		3.1		2000		2,663.0
	1990		18.1		1990		2,659.0
Other plant products (seeds, roots, plant parts)	2005	tonnes	557.5	Other animal products	2005	tonnes	1,230.5
	2000		27.2		2000		1,100.0
	1990		59.9		1990		-

Source: Directorate of Forests database (2007)

### 12.3 Data for Table T12

Rank	Name of product	Key species	Unit	NWFP removals 2005		NWFP category
				Quantity	Value (1000 CSD)	
1 <sup>st</sup>	Mushrooms, berries, herbs, animals	Boletus Edulis, Cantharellus Cibarius, Vaccinium Myrtillus, Rosa Canina, Helix spp, etc.	t	7,822	337,468	1
2 <sup>nd</sup>	Wild honey and bee-wax	Black Locust, meadow herbs and plants	t	3,665	366,500	11
3 <sup>rd</sup>	Medicinal herbs and aromatic plants	Achillea Millefolium, Juniperus communis, Hypericum perforatum, Sambucus nigra etc.	t	2,435	22,606	3
4 <sup>th</sup>	Wild meat	Roe, deer, wild boar, hare, pheasant, partridge, chamois etc.	t	909	227,250	12
5 <sup>th</sup>	Game shot	Roe, deer, wild boar, hare, pheasant, partridge, chamois, bear etc.	pcs	331,300	930,000	10
6 <sup>th</sup>	Christmas trees and ornamental plants	Spruce, Fir, Douglas fir,	pcs	50,000	5,000	8
7 <sup>th</sup>	Trophies	Roe, deer, wild boar, hare, chamois, etc.	pcs	10,600	295,740	10
8 <sup>th</sup>						
9 <sup>th</sup>						
10 <sup>th</sup>						
All other plant products					83,700	
All other animal products					184,500	
<b>TOTAL</b>					<b>2,452,764</b>	

	2005
Name of local currency	Republic of Serbia and Montenegro dinar (CSD)

### 12.4 Comments to Table T12

Variable / category	Comments related to data, definitions, etc.
10 most important products	
Other plant products	
Other animal products	
Value by product	
Total value	

Other general comments to the table
Value and prices of NWFP are mainly estimated on very rough basis.

## 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
FAOSTAT	H	Employment in forestry	1990, 2000	FRA 2000
State Statistical Office	M/L	Employment	1990, 2000, 2005	Statistical Bulletin "Forestry"; Statistical yearbooks.
Faculty of Forestry	M/L	Employment	2005, 2008	Collection of available data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Employment	2005, 2008	Official data of two PE's (forest management plans).
Directorate of Forests	H	Employment	2007	Directorate of Forests database

#### 13.2.2 Classification and definitions

National class	Definition
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).

### 13.2.3 Original data

Forestry Public Enterprises	Human resources within public forest enterprises					
	2000		2005		2008	
	Staff No.	%	Staff No.	%	Staff No.	%
Srbijasume	10,470	94	3,640	59	3,202	58
Vojvodinasume	-	-	1,878	31	1,780	32
National Parks	640	6	580	9	500	9
Borjak <sup>1</sup>	ID	ID	51	1	47	1
<b>TOTAL</b>	<b>11,110</b>	<b>100</b>	<b>6,149</b>	<b>100</b>	<b>5,529</b>	<b>100</b>

<sup>1</sup> Municipal public enterprise for management of spa's forests.

### 13.3 Data for Table T13

FRA 2010 Category	Employment (1000 years FTE)		
	1990	2000	2005
Employment in primary production of goods	12	8	6.6
...of which paid employment	12	8	5.6
...of which self-employment	0	ID	1.0
Employment in management of protected areas	ID	ID	0.6

### 13.4 Comments to Table T13

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Employment in primary production of goods	Data received from public forest enterprises, national parks, faculty of forestry and waterworks organisations	Decreasing trend mainly because of privatisation in public forest enterprise where almost all forestry workers goes into self-employment category
Paid employment / self-employment	Data received from public forest enterprises, national parks, faculty of forestry and waterworks organisations	Increasing trends because of privatisation process and expansion of self-employment category
Employment in management of protected areas	Data from national parks and public forest enterprises	Increasing trend because of increasing of protected areas

Other general comments to the table
Data performed from previous FRA reports as well as from Directorate of Forests database, public forest enterprises, national parks, faculty of forestry and waterworks organisations, but also in Statistical Yearbooks of Serbia. From year 2000, till year 2005, there are a lot of structural changes in management of public enterprise Srbijasume. First of all it was established new forest enterprise Vojvodinasume, and also number of employees from Kosovo and Metohija become a part of K&M forest service. Trend of reduction number of employees is continuities.

## 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	<a href="http://www.minpolj.gov.rs">www.minpolj.gov.rs</a>	
<b>National forest programme (nfp)</b>	<input checked="" type="checkbox"/>	Yes	
	<input type="checkbox"/>	No	
If Yes above, provide:	Name of nfp in country		
	Starting year	2005	
	Current status	<input checked="" type="checkbox"/>	In formulation
		<input type="checkbox"/>	In implementation
		<input type="checkbox"/>	Under revision
<input type="checkbox"/>		Process temporarily suspended	
Reference to document or web site	<a href="http://www.forestryprojectserbia.org">www.forestryprojectserbia.org</a>		
<b>Law (Act or Code) on forest with national scope</b>	<input checked="" type="checkbox"/>	Yes, specific forest law exists	
	<input 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	1991	
	Year of latest amendment	1995	
	Reference to document	<a href="http://www.minpolj.gov.rs">www.minpolj.gov.rs</a>	

In case the responsibility for forest policy- and/or forest law-making is decentralized, please indicate the existence of the following and explain in the comments below the table how the responsibility for forest policy- and law-making is organized in your country.		
<b>Sub-national forest policy statements</b>	<input type="checkbox"/>	Yes
	<input checked="" type="checkbox"/>	No
If Yes above, indicate the number of regions/states/provinces with forest policy statements		
<b>Sub-national Laws (Acts or Codes) on forest</b>	<input type="checkbox"/>	Yes
	<input checked="" type="checkbox"/>	No
If Yes above, indicate the number of regions/states/provinces with Laws on forests		

### 14.3 Comments to Table T14

Variable / category	Comments related to data, definitions, etc.
Forest policy statement with national scope	Forestry Development Strategy of the Republic of Serbia, 2006.
National forest programme (nfp)	Under preparation process, but main work has been completed during the project: "Forestry Sector Development in Serbia"
Law (Act or Code) on forest with national scope	Law on Forests exists from the year 1991, with amendment from 1995, but it is under revision and new Law on Forests is expected to be brought till the end of 2009.
Sub-national forest policy statements	Doesn't exist. Forest policy is centralised in Serbia.
Sub-national Laws (Acts or Codes) on forest	Doesn't exist. Forest law issue is centralised in Serbia.

Other general comments to the table
NFP is under preparation and app. 80% of NFP was completed. It is expected to be completed and adopted till the end of 2009.

## 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, Forestry and Water Management Director of the Directorate of Forests	
Level of subordination of Head of Forestry within the Ministry	x	1 <sup>st</sup> level subordination to Minister
		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	Inspectorate General Forestry and Hunting Inspection	
Institution(s) responsible for forest law enforcement	Directorate of Forests and Inspectorate General as part of the Ministry of Agriculture, Forestry and Water Management Public Forest Enterprises "Srbijasume", Belgrade and "Vojvodinasume", Petrovaradin National Parks Public Enterprises	

Table 15b – Human resources

FRA 2010 Category	Human resources within public forest institutions					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Total staff	121	35	98	36	94	37
...of which with university degree or equivalent	118	34	96	35	92	36

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	Minister of Agriculture, Forestry and Water Management of the Republic of Serbia	
Level of subordination of Head of Forestry within the Ministry	Director of the Directorate of Forests, Director of the Inspectorate General and the Head of Forestry and Hunting Inspection within Inspectorate General	
Other public forest agencies at national level		
Institution(s) responsible for forest law enforcement	Directorate of Forests, Inspectorate General - Forestry and Hunting Inspection	
Human resources within public forest institutions		

Other general comments to the table
Data for T 15b obtained in Directorate of Forests database

## 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
State Statistical Office	M/H	Education	2000, 2005	Statistical yearbooks; statistical office database
Faculty of Forestry	M/H	Employment, student registers	2000, 2005, 2008	Collection of available data from forest management plans;
Forestry institutes	M/H	Employee database	2005, 2008	Institutes employee database
Forestry high schools	M/L	Employment, pupil registers	2000, 2005, 2008	Official data from forestry high schools
Directorate of Forests	M	Education and research	2009	Directorate of Forests database

#### 16.2.2 Original data

FRA 2010 Category	Graduation <sup>1)</sup> of students in forest-related education																					
	2000						2005						2008									
	MSc	Female	BSc	Female	FT	Female	MSc	Female	BSc	Female	FT	Female	MSc	Female	BSc	Female	FT	Female				
Faculty of Forestry	5	2	129	56			10	3	190	105			17	8	204	116						
Forestry high schools					134	21											98	9			95	5

FRA 2010 Category	Professionals working in publicly funded forest research centres <sup>2)</sup>																	
	2000						2005						2008					
	PhD	Female	MSc	Female	BSc	Female	PhD	Female	MSc	Female	BSc	Female	PhD	Female	MSc	Female	BSc	Female
Faculty of Forestry	138	34	49	16	74	37	70	19	37	23	33	19	69	17	48	27	40	22
Research Institutes	23	8	17	8	25	12	17	7	18	8	23	10	20	8	25	12	11	5
Forestry high schools	0	0	1	0	77	20	0	0	2	0	82	24	0	0	2	0	103	43

Note: Table shows total number of graduate students and professionals, with overall number of females.

### 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	5	40	10	30	17	47
Bachelor's degree (BSc) or equivalent	129	43	190	55	204	57
Forest technician certificate / diploma	144	16	98	9	95	5
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)	161	26	87	30	89	28
Master's degree (MSc) or equivalent	67	36	57	54	75	52
Bachelor's degree (BSc) or equivalent	176	44	193	27	198	37

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		
Professionals working in public forest research centres		

Other general comments to the table
Data obtained in Statistical Office, but also in all education and research institutions Data for "Forest technician" include also technicians for wood processing Data for year 2000

## 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
Statistical Office	M	Investment and money	2005, 2007	Official statistic data
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/H	Annual business reports 2005.	2005, 2008	Official data of two PE's
Directorate of Forests	M/H	Financial and budgetary allocations	2007	Directorate of Forests database

#### 17.2.2 Classification and definitions

National class	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; and non-wood forest products, it exclude the income of publicly owned business entities.

Public expenditure	All government expenditure on forest related activities.
Subventions ( <i>sub-category to Public expenditure</i> )	All government expenditure on public institutions solely engaged in the forest sector. Where the forest administration is part of a government structure (e.g. directorate, department or ministry), this include the forest sector component of the directorate's total expenditure, with exemption of the expenditure of publicly owned business entities.
Extension services - technical-expert works in private forests ( <i>sub-category to Public expenditure</i> )	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.

### 17.2.3 Original data

Relative share of different expenditure categories and the share of self-financing during 1997 – 2006 in publicly owned business entities

Year	Total expenditure (1000 YUD, CSD)	Share of expenditure categories (%)				Share of self-financing (%)
		Operational expenditure	Investments	Biological Investments	Charges	
1997	698 164	81	10	7	1	85
1998	910 903	79	11	9	1	80
1999	1 693 524	86	10	3	1	86
2000	4 158 129	79	12	8	2	92
2001	4 673 832	87	8	4	2	94
2002	5 107 846	83	6	9	2	95
2003	5 300 949	83	4	11	1	91
2004	5 752 536	85	4	10	2	86
2005	6 185 934	81	4	12	2	80
2006	7 100 230	82	5	11	2	84

Source: www.forestryprojectserbia.org

#### Public expenditure for forests improvements and protection

2005				
Economic classification	DESCRIPTION	Budget	Expenses from additional incomes of institution	Total
411	Salaries, overheads, fees for employees	61,668,000		61,668,000
412	Social contributions of employer	11,039,000		11,039,000
413	In kind tax	100,000		100,000
414	Social allowances to employees	100,000		100,000
415	Employees tax	1,300,000		1,300,000
421	Permanent expenditures	2,500,000		2,500,000
422	Travel expenditures	2,000,000		2,000,000
423	Contracts services	700,000		700,000
424	Specialized services	1,500,000	3,500,000	5,000,000
425	Regular expenditures		2,000,000	2,000,000
426	Material	2,000,000	6,500,000	8,500,000

451	<b>Subvention to public non-profit enterprises and organisations (Resources of this appropriation designate for):</b>	<b>193,000,000</b>	<b>200,000,000</b>	<b>393,000,000</b>
<b>Total €</b>				<b>4,912,500</b>
	- Technical-expert works in private forests			0
	- Improvement and conduction of protection in forests			0
	- Improvement and development of hunting			0
	- Report, diagnosis and forecasting service			0
482	Taxes and fees	500,000		500,000
483	Money fees and court decisions penalties	50,000		50,000
512	Machineries and equipments			0
<b>Directorate of Forests financial sources:</b>				
1	Budget incomes	276,457,000		276,457,000
4	Own incomes of budgetary users		112,000,000	112,000,000
13	Nondisposable surplus of incomes from previous years		100,000,000	100,000,000
<b>Total state budget (CSD):</b>		<b>276,457,000</b>	<b>212,000,000</b>	<b>488,457,000</b>
<b>Total €</b>				<b>6,105,713</b>

Source: Directorate of Forests

### 17.3 Data for Table T17

**Table 17a - Forest revenues**

FRA 2010 Categories	Revenues (1000 CSD <sup>1</sup> )	
	2000	2005
Forest revenue	NDA	670,803

<sup>1</sup> Republic of Serbia and Montenegro Dinar

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

FRA 2010 Categories	Domestic funding (1000 CSD)		External funding (1000 CSD)		Total (1000 CSD)	
	2000	2005	2000	2005	2000	2005
Operational expenditure	NDA	95,457	0	50,985	NDA	146,442
Transfer payments	NDA	393,000	0	0	NDA	393,000
<b>Total public expenditure</b>	NDA	488,457	0	50,985	NDA	539,442
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 checked="" 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 checked="" type="checkbox"/>	Establishment or maintenance of protected areas				
	<input checked="" type="checkbox"/>	Other, specify below				
Forest roads, Forest seed and seedlings, Forest protection (pests, diseases, fires), Forest melioration.						

**17.4 Comments to Table T17**

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest revenue	National definition regarding forest revenue consider all revenue collecting from forests in sense of trade, but also in collecting all taxes related to forests (3% tax for cutting wood). Only this tax of 3%, for cutting wood goes directly on budget allocation which is using for development and improving of forests. All other taxes and revenues go in state budget and it is not possible to track money flow. Figure of 568,633,000 CSD is rough estimation based on incomplete information from forest users in Serbia (public enterprises) and forest owners.	No accurate data for year 2000, because of different budget and account system.
Operational expenditure	On national level, it is named as subventions.	No accurate data for year 2000
Transfer payments	On national level, defined as extension services-expert and technical works in private forests	No accurate data for year 2000

<b>Other general comments to the table</b>
It was not possible to provide data for year 2000, because of different methodology for forest revenue accounting, and because of uncompleted financial archive.