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Food and Agriculture Organization of the United Nations

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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).

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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
The Land Fund of the Republic of Latvia Prepared by Ministry of Agriculture Department of the organization of the use of land (As of November 1, 1990)	M	Land use categories	1990	
Land use balance Prepared by State Land Service	M	Land use categories	2000, 2005, 2006, 2007, 2008	
Information of Forest resources prepared by The State Forest Service (Source - National Forest register)	M	Area of forest, forest infrastructure, gaps	1988, 1994, 2000, 2005	
Information of Forest resources from National Forest Inventory	H	Area of forest, forest infrastructure, gaps	2008	
FAOSTAT	H	Total land area Inland water bodies	2000, 2005	

1.2.2 Classification and definitions

National class	Definition
Forest	A forest is an ecosystem in all stages of its development, dominated by trees the height of which at the particular location may reach at least seven metres and the present or potential projection of the crown of which is at least 20 per cent of the area occupied by the forest stand;
Forest land	Forestland is land covered by forest, land under forest infrastructure facilities, as well as adjacent overflowing clearings, marshes and glades. A forest is an ecosystem in all stages of its development, dominated by trees the height of which at the particular location may reach at least seven metres and the present or potential projection of the crown of which is at least 20 per cent of the area occupied by the forest stand. The following shall not be regarded as forest: 1) Areas separate from forests, covered with trees, the size of which does not exceed 0.1 hectare; 2) Rows of trees of artificial or natural origin, the width of which is less than 20 metres; and 3) Orchards, parks, cemeteries and forest tree seed orchards.
Gaps	Small open areas in forest with characteristic plant cover.
Farmland	Farmland includes: arable land, orchards, meadows and pastures.
Bushland	Land, which is evenly overgrown with wooden plants, which does not have trunk normally (such as osiers, buckthorns, woodbines, guelder-roses, spindletrees, currants, hazels, junipers, rowan-trees, bird-cherries etc.).
Bogs	Humid peat land which can't be used in agriculture and which is not forest.
Yards	Land under buildings, constructions and courtyards, as well as land which is needed for maintenance of buildings and constructions.
Roads	Land under streets, roads and railways.
Water bodies	Land under rivers, lakes, ponds, water reservoirs
Other land	Sand areas, dingles, steep slopes, and land which is used for mineral mining and for other non-agricultural needs.

1.2.3 Original data

There are two main sources of information, which were used. The State Land Service Register, which maintain information on land use and the State Forest Service register which only contains information on forestland. Forest area used in table T1 is given according to the register of State Forest Service because it provides more detailed information on forestland.

Since 2008 information about forest area has been acquired from national forest inventory data.

National class	1988	1990	1994	2000
Forest land	3197	3224	3277	3209
Forest	2757	2778	2820	2888
Forest infrastructure, gaps, bogs and marches of which	440	446	457	321 (100%)
Forest infrastructure		89		64 (20%)
Gaps		40		28 (9%)
Bogs				218 (68%)
Marches				10 (3%)

Italic (1990) is estimated as following. Forest area in 1990 is calculated by liner interpolation using data 1998 and 1994. Likewise, forest infrastructure, gaps, bogs and marches in 1990 was estimated by interpolation. Forest infrastructure and gaps were calculated by multiplying the percentage of forest infrastructure and gaps among “forest infrastructure, gaps, bogs and marches” in 2000.

National class	Area, 1000 ha			
	1990	2000	2005	2008
Forest	2778	2888	2950	3220,9
Forest infrastructure	89	64	53	81,4
Gaps	40	28	35	28,8
Bushland	112	120	115	115
Orchards	21	29	29	29
Land under water	255	254	235	238
Total area for country	6459	6459	6459	6459

* Natural expected forests in abandoned agriculture land

1.3 Analysis and processing of national data

1.3.1 Calibration

The FAOSTAT figure for inland water in 2005 (230,000ha) differs from national data (254,000ha). In order to align the figure to FAOSTAT, the difference is allocated to the category “Other Land”, and the area of forest/other wooded land is not affected by the calibration.

The land area figures for country match with the land area figure with FAOSTAT. Therefore, there is no need to calibrate the national data of land area.

1.3.2 Estimation and forecasting

The data year 2008, the first cycle of national forest inventory, differs significantly from the data used till now. Data of national forest inventory are more precise compared to the data used till now. Difference between original data of years 2005 and 2008 does not characterize the changes in forest area. The difference is due to the use of more precise methods.

Hence the original data in 2008 is used as the basis for the estimation of forest, and apply the annual change rate.

$$EF_{2010} = DF_{2008} + DF_{2008} \times ACR_{2000-2005} \times 2$$

$$EF_{2005} = DF_{2008} - DF_{2008} \times ACR_{2000-2005} \times 3$$

$$EF_{2000} = DF_{2008} - DF_{2008} \times ACR_{2000-2005} \times 8$$

$$EF_{1990} = EF_{2000} - EF_{2000} \times ACR_{1990-2000} \times 10$$

* DF (Data of Forest), EF (Estimated Forest), ACR (Annual Change rate)

The same procedure was applied for estimating bushland area. Inland water was taken from FAOSTAT data and other land was estimated by difference.

Annual change rates

Year	1990- 2000			2001-2005		
	Change of forest area	Annual change	Annual change rate	Change of forest area	Annual change	Annual change rate
Forest	110	11	0.38%	62	12.4	0.42%
Forest infrastructure	-25	-2.5	-3.91%	-11	-2.2	-4.15%
Gaps	-12	-1.2	-4.29%	7	1.4	4.00%
Bushland	8	0.8	0.67%	-5	-1	-0.87%

Estimation of Forest, Forest infrastructure, Gaps and Bushland

National class	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	2994	3113	3180	3248
Forest infrastructure	150	108	92	75
Gaps	29	20	25	31
Bushland	115	123	118	113

1.3.3 Reclassification into FRA 2010 categories

	Forest	Other wooded land	Other land	Total	OLWTC
Forest	100%			100%	
Forest infrastructure	100%			100%	
Gaps	100%			100%	
Bush land		100%		100%	
Orchards			100%	100%	100%

1.4 Data for Table T1

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	3173	3241	3297	3354
Other wooded land	115	123	118	113
Other land	2916	2841	2814	2762
...of which with tree cover	21	29	29	29
Inland water bodies	255	254	230	230
Total for country	6459	6459	6459	6459

1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest	<p>Definitions used in national level differs from FRA 2010 definitions – minimal area for land use category is 0.1 ha not 0,5 ha.</p> <p>Another assumptions – 1) separate areas of bush land less than 0.5 ha is not considerable amount; 2) in reality variables used in national forest definition (the height of trees at the particular location may reach at least seven metres and the present or potential projection of the crown is at least 20 per cent of the area occupied by the forest stand) do not make significant changes in forest area.</p>	<p>In 2008 data of the first cycle of national forest inventory was acquired. The data acquired differs significantly from the data used till now. Data of national forest inventory are more precise compared to the data used till now.</p> <p>Difference between years 2005 and 2008 does not characterize the changes in forest area. The difference is due to the use of more precise methods.</p> <p>Increase in forest area is due to natural growth of forest in abandoned agricultural lands. Only over the last five years there have been no changes.</p>

		According to national forest inventory data, the actual beginning of this process started 40 years ago, but the most rapid decrease was in the last 10 years when the forest area reached 66 thousand ha.
Other wooded land		
Other land		
Other land with tree cover		
Inland water bodies		

Other general comments to the table

No original data available on year 1990 because in that time more detailed analysis of forest resources was prepared after every 5-year period (1983, 1988).

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

Field inventory	
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.
Categories related to the holder of management rights of public forest resources	
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
The Land Fund of the Republic of Latvia Prepared by Ministry of Agriculture Department of the organization of the use of land (As of November 1, 1990)	M	Forest ownership structure	1990	
Land use balance prepared by The State Forest Service	M	Forest ownership categories	2000	
National Real Estate Cadastre from State Land Service	M	Forest ownership categories	2005	

2.2.2 Classification and definitions

National class	Definition
1990	
Land of forestry enterprises	Land of forestry enterprises, organizations and institutions
Land of agricultural enterprises	Land of agricultural enterprises and soviet collective farms (kolkhozs)
Land of farms	Land of farms
Land of state reserve	Land of state reserve is all land not allocated to land users in permanent use or long-term lease
Land of urban territories	Land of urban territories
Land of industry, transport	Land allocated to industrial enterprises, transport enterprises, resorts in permanent use or long-term lease
2000, 2005	
Land owned or used by physical entity	Land owned by individuals and families.
Land owned or used by legal entity	Land owned by private corporations, co-operatives, companies and other business entities
Land owned or used by local governments	Land owned or used by local governments
Land owned or used by State or state institutions	Land owned or used by State or state institutions
Joint ownership land	Real estates formed by undivided shares which are owned by owners with different owner status (physical persons, legal persons, local governments or state and state institutions)
Free land	Land without renewed property rights during land reform, not transferred in ownership for payment or not transferred in permanent use to physical or legal persons, local governments or state institutions

2.2.3 Original data

National class	Percentage of forest area
1990	
Land of forestry enterprises	62.4
Land of agricultural enterprises	34.0
Land of farms	1.0
Land state reserve	0.3
Land of urban territories	0.7
Land of industry, transport	1.6
2000	
Land owned or used by physical entity	42.99
Land owned or used by legal entity	2.17
Land owned or used by local governments	4.03
Land owned or used by State or state institutions	49.93
Joint ownership land	0.01
Free land	0.87
2005	
Land owned or used by physical entity	41.41
Land owned or used by legal entity	4.47
Land owned or used by local governments	3.30
Land owned or used by State or state institutions	50.72
Joint ownership land	0.05
Free land	0.05

2.3 Analysis and processing of national data

2.3.1 Reclassification into FRA 2010 categories

FRA 2010 category	National category, 1990	National category, 2000, 2005
Public ownership	Land of forestry enterprises	Land owned or used by local governments
	Land of agricultural enterprises	Land owned or used by State or state institutions
	Land of urban territories	
	Land of industry, transport	
Private ownership owned by individuals		Land owned or used by physical entity
Private ownership owned by private business entities and institutions	Land of farms	Land owned or used by legal entity
Other types of ownership	Land state reserve	Joint ownership land
		Free land

2.4 Data for Table T2

Table 2a - Forest ownership

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public ownership	3132	1749	1781
Private ownership	32	1464	1513
...of which owned by individuals	0	1393	1365
...of which owned by private business entities and institutions	32	70	147
...of which owned by local communities	0	0	0
...of which owned by indigenous / tribal communities	0	0	0
Other types of ownership	10	29	3
TOTAL	3173	3241	3297

Note: If other types 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:		

Table 2b - Holder of management rights of public forests

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public Administration	3132	1749	1781
Individuals	0	0	0
Private corporations and institutions	0	0	0
Communities	0	0	0
Other	0	0	0
TOTAL	3132	1749	1781

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		
Management rights		

Other general comments to the table

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.
Categories of primary designated functions	
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.
Special designation and management categories	
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
Information of Forest resources prepared by The State Forest Service	M	Forest area by types of protected territories	1990, 2000, 2005, 2007	
Information of Forest resources prepared by The State Forest Service		State forest	1990, 2000, 2005, 2007	
Information of Forest resources prepared by The State Forest Service		Forest area with management plan	1990, 2000, 2005, 2007	
Information of Forest resources prepared by The State Forest Service		Forest area within protected areas in private forests	2000, 2005, 2007	

3.2.2 Classification and definitions

National class	Definition
Strict nature reserves	Strict nature reserves are territories untouched by human activities or nearly natural, in which territories unhindered development of natural processes shall be ensured in order to protect and study rare or typical ecosystems and parts thereof.
National parks	National parks are broad areas which are characterised by outstanding nature formations of national significance, landscapes and cultural heritage landscapes untouched by human activities or nearly natural, a diversity of biotopes, abundance of cultural and historical monuments, and peculiarities of cultural environment.
Nature reserves	Nature reserves are nature territories little transformed or transformed in varying degrees by human activities, which territories include habitats of specially protected wild plant and animal species, and specially protected biotopes.
North Vidzeme Biosphere Reserve	Biosphere reserves are broad territories in which landscapes and ecosystems of international significance are located. The goal of establishing biosphere reserves is to ensure the preservation of natural diversity and to promote sustainable social and economic development of the territory.
Nature parks	Nature parks are territories that represent the natural, cultural and historical values of a particular area, and that are suitable for recreation, education and the instruction of society.
Protected landscape areas	Protected landscape areas are territories remarkable for original and diverse landscapes and special beauty. The goals of such territories are to protect and preserve the cultural environment and landscapes characteristic of Latvia in all their diversity, as well as to ensure the preservation of environment appropriate for recreation of society and for tourism, and use of environment friendly management methods.
Protected dendrological plantations	Nature monuments are separate, isolated natural formations: protected trees, dendrological plantings, avenues, geological and geomorphological nature monuments and other natural rarities having scientific, cultural and historical, aesthetic or ecological value.
Protected geological and geomorphological nature monuments	Nature monuments are separate, isolated natural formations: protected trees, dendrological plantings, avenues, geological and geomorphological nature monuments and other natural rarities having scientific, cultural and historical, aesthetic or ecological value.
Micro-reserves	Micro Reserve – a territory that is determined in order to ensure protection of Specially Protected Species or Habitats outside Specially Protected Nature Territories, as well as within the Specially Protected Nature Territories, if protection is not ensured by any of the functional zones
Buffer zones around micro-reserves	Areas where restrictions on economic activity are prescribed in order to reduce the impact of intensive economic activities on the micro-reserves of specially protected bird species
Protection zones of coastal dunes along the Baltic Sea and Bay of Riga	A protection zone of coastal dunes the width of which depends on the width of dune zone, but not less than 300 metres in the direction of land, counting from the place where the natural land vegetation begins.
Restricted economic activity zone along the Baltic sea and Bay of Riga	A restricted economic activity zone up to a width of 5 kilometres is determined taking into account natural circumstances, in order to decrease the negative effects of pollution in the Baltic Sea, to preserve the protective functions of the forest, to eliminate the development of erosion processes, to protect the coastal landscapes, to ensure preservation and protection of coastal natural resources, including resources necessary for leisure and tourism and other territories important for society, and balanced and the continuous utilisation of them.
Surface water body protection zones	Surface water body protection zones are determined for reservoirs, water courses and artificial water bodies, in order to decrease the negative effects of pollution to water ecosystems, to eliminate the development of erosion processes, and to restrict economic activity in the flood zones, as well as to preserve the characteristic landscape of the area..
Protection zones along wetlands	Protection zones along wetlands are determined in order to preserve biological diversity and to stabilise the regime of humidity in the zone of contiguity (transition) of the forest and marsh.

Protection zones surrounding urban territories	Protection zones surrounding urban territories are determined to ensure appropriate conditions for recreation and improvement of health for urban population, as well as to decrease or compensate the negative effects of cities to environment.
Forests within the administrative territories of cities	Forests within the administrative territories of cities
Specially protected forest areas	Specially protected forest areas for protection of specially protected species, habitats with biological importance and objects with cultural and historic importance.
Plantation forest	Forest stands established by afforestation, intended for specific purposes and registered in the State Forest Register.

3.2.3 Original data

Forest area by types of protected territories

National class	Forest area * (1000 hectares)	
	1990	1994
Strict nature reserves	38,7	38,7
National parks	51,6	51,6
Nature parks	15,0	15,0
Nature reserves	87,6	87,6
Anti-erosion forests	44,4	44,4
Suburban parks	72,2	72,2
Protected landscape areas	55,1	55,1
Suburban forests	244,0	244,0
Specially protected forest areas	196,3	196,3
Total forest area within protected areas	560,9	560,9

* – area of gaps and infrastructure not included.

National class	Forest area*, ha		
	2000	2005	2007
Strict nature reserves	19155	8641	8883
National parks	50284	77393	102281
Nature reserves	61766	89592	89077
North Vidzeme Biosphere Reserve (Nature reserve zone)		2991	2939
Nature parks	28436	78540	61538
Protected landscape areas	54451	69588	73686
Protected dendrological plantations	-	569	625
Protected geological and geomorphological nature monuments		1245	1357
Micro-reserves		25295	28570
Buffer zones around micro-reserves		26196	28576
Protected belt of dunes along the Baltic Sea and Bay of Riga	5124	7954	8258
Belt of limited economic activity along the Baltic sea	57122	71003	67286
Protected zones along waters		27481	36606
Protected zones along wetlands		15192	19476
Protected zone surrounding urban territories	46766	33157	27827
Forests within the administrative territories of cities		3245	9832
Specially protected forest areas	179203	26343	19344
Specially protected Habitats of spaces	43113	-	-
Total forest area within protected areas	545 420	564 452	586 161

* – area of gaps and infrastructure not included.

National class	Forest area*, ha		
	2000	2005	2007
Scientific research forest**	23753	23753	23753
Forest area within protected areas in private forests	232634	193128	179191
State forests (gaps and infrastructure are included)	1498871	1546279	1557309

* – area of gaps and infrastructure not included.

** - expert estimation – there have not been considerable changes in the area of scientific research forests since 1990, therefore data for 2005 is used for years 2000 and 2007.

3.3 Analysis and processing of national data

3.3.1 Calibration

Calibration from national forest area categories to FRA forest area categories

	1990	2000	2005	2007
Forest area according to national categories	2778	2888	2950	3221
Forest area according to FRA categories	3173	3241	3297	3354
Calibration factor (Forest area according to FRA categories / Forest area according to national categories)	1.142	1.122	1.118	1.041

3.3.2 Reclassification into FRA 2010 categories

National class	FRA 2010 Categories
Strict nature reserves	Conservation of biodiversity
National parks	Conservation of biodiversity
Nature parks	Conservation of biodiversity
Nature reserves	Conservation of biodiversity
Anti-erosion forests	Protection of soil and water
Suburban parks	Social services
Protected landscape areas	Conservation of biodiversity
Suburban forests	Social services
Forests for environment protection	Conservation of biodiversity
Specially protected forest areas	Conservation of biodiversity
North Vidzeme Biosphere Reserve (Nature reserve zone)	Conservation of biodiversity
Protected dendrological plantations	Conservation of biodiversity
Protected geological and geomorphological nature monuments	Conservation of biodiversity
Micro-reserves	Conservation of biodiversity
Buffer zones around micro-reserves	Conservation of biodiversity
Protected belt of dunes along the Baltic Sea and Bay of Riga	Protection of soil and water
Belt of limited economic activity along the Baltic sea	Protection of soil and water
Protected zones along waters	Protection of soil and water
Protected zones along wetlands	Conservation of biodiversity
Protected zone surrounding urban territories	Social services
Forests within the administrative territories of cities	Social services
Specially protected Habitats of spaces	Conservation of biodiversity
Plantation forest	Production
Scientific research forest	Social services
Remaining area.	Production

FRA 2010 Categories	National class
Area of permanent forest estate 2000, 2005, 2010	State forest Forest area within protected areas in private forests
Area of permanent forest estate 1990	Forest area within protected areas

3.4 Data for Table T3

Table 3a – Primary designated function

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production	2254	2591	2624	2658
Protection of soil and water	51	71	122	128
Conservation of biodiversity	507	498	482	498
Social services	361	81	69	70
Multiple use	0	0	0	0
Other (please specify in comments below the table)	0	0	0	0
No / unknown	0	0	0	0
TOTAL	3173	3241	3297	3354

Table 3b – Special designation and management categories

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Area of permanent forest estate	641	1732	1739	1737
Forest area within protected areas	641	612	631	610
Forest area under sustainable forest management	3173	3241	3297	3354
Forest area with management plan	3173	3241	3297	3354

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		
Multiple use		
Other		
No / unknown designation		
Area of permanent forest estate		
Forest area within protected areas		
Forest area under sustainable forest management	<p>In Latvia all forests are managed sustainably. The Latvian forest policy identifies one general goal: the sustainable management of forests. The main criteria are as follows:</p> <ul style="list-style-type: none"> • prevention of reduction of forest area, • protection and improvement of the productivity and value of forest; • afforestation of non-agricultural and other lands. <p>Besides, forests of Latvia comply with the sustainable forest management criteria set out in FRA 2010 guidelines. In Latvia all state forests are certified. In private forests the certification process still continues.</p> <p>All forests where forestry activities take place have a long-term forest inventory for short-term planning of economic activity. Forest management requirements are strictly set out by laws and regulations. The supervision is carried out by State Forest service.</p> <p>Protected territories have secure boundaries and management requirements laid down by laws and regulations.</p>	
Forest area with management plan	<p>There is a mandatory requirement for forest owners in Latvia to carry out their forest inventory for forest management planning, which can be treated as equal to a forest management plan, only without economic activities to be carried out and the time of their implementation. However, the permissible economic activities and, in certain cases, the implementation of them are set out by laws and regulations.</p> <p>There are forest areas indicated in the table where forest inventory has been carried out. Besides, a greatest part of forest owners have elaborated forest management plans for economic activity.</p>	

Other general comments to the table

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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).
Characteristics categories	
Primary forest	Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Other naturally regenerated forest	Naturally regenerated forest where there are clearly visible indications of human activities.
Other naturally regenerated forest of introduced species (sub-category)	Other naturally regenerated forest where the trees are predominantly of introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
Planted forest of introduced species (sub-category)	Planted forest, where the planted/seeded trees are predominantly of introduced species.
Special categories	
Rubber plantations	Forest area with rubber tree plantations.
Mangroves	Area of forest and other wooded land with mangrove vegetation.
Bamboo	Area of forest and other wooded land with predominant bamboo vegetation.

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 Forest Service	M	Planted forest, planted forest of introduced species primary forest	2000, 2005, 2008	

4.2.2 Classification and definitions

National class	Definition
Strict and regulatory regime zone of nature reserves	Territories untouched by human activities or nearly natural, where unhindered development of natural processes is ensured, in order to protect and study rare and typical ecosystems and their parts. In the zone of strict regime all natural resources are completely excluded from economic and other activities.

Strict regime zone of national parks	National parks are broad areas which are characterised by outstanding nature formations of national significance, landscapes and cultural heritage landscapes untouched by human activities or nearly natural, a diversity of habitats, abundance of cultural and historical monuments, and peculiarities of cultural environment. In the zone of strict regime all natural resources are completely excluded from economic and other activities.
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4.2.3 Original data

Primary forest

	Forest area*, hectares		
	2000	2005	2008
Strict regime zone of nature reserves	1402	2828	2768
Regulatory regime zone of nature reserves	10553	5007	5327
Strict regime zone of national parks	3271	6145	6497
Total (primary forest)	15226	13980	14592

* – area of gaps and infrastructure not included.

Planted forest

National class	Forest area*, (1000 hectares)			
	1990	2000	2005	2008
Planted forest		631,8	618,7	603,2
of which of introduced species	1,7	1,7	1,7	1,7

* – area of gaps and infrastructure not included.

- expert estimation:

- 1) Primary forest area in the period of 1990 to 2000 has not changed.
- 2) Planted forest area in the period of 1990 to 2000 has changed according to the changes in the forest area.
- 3) Other naturally regenerated forest area is total forest area subtracted by planted forest area and primary forest area.

4.3 Analysis and processing of national data

4.3.1 Calibration

Calibration from national forest area categories to FRA forest area categories

	1990	2000	2005	2008
Forest area according to national categories	2778	2888	2950	3221
Forest area according to FRA categories	3173	3241	3297	3354
Calibration factor (Forest area according to FRA categories / Forest area according to national categories)	1.142	1.122	1.118	1.041

Calibrated national data

National class	Forest area, hectares		
	2000	2005	2008
Total primary forest	17087	15624	15195
Planted forest	709025	691476	628107

4.3.2 Estimation and forecasting

For year 2010 data of national forest inventory for year 2008 is used. Since national forest inventory data is collected in a five-year cycle and the first cycle was finished in 2008, for the next five years in the second cycle data of year 2008 will be used.

4.3.3 Reclassification into FRA 2010 categories

FRA 2010 Categories	National class
Primary forest	Strict and regulatory regime zone of nature reserves Strict regime zone of national parks
Other naturally regenerated forest	Remaining forest area
Planted forest	Planted forest
...of which of introduced species	Planted forest of introduced species

4.4 Data for Table T4

Table 4a

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest	17	17	16	15
Other naturally regenerated forest	2432	2515	2590	2711
...of which of introduced species	0	0	0	0
Planted forest	724	709	691	628
...of which of introduced species	1.9	1.9	1.9	1.8
TOTAL	3173	3241	3297	3354

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		
Rubber plantations		
Mangroves		
Bamboo		

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
State Forest Service	H	Afforestation, Reforestation	1988 – 2007	
Information of Forest resources from National Forest Inventory		Natural expansion of forest	1988 – 2007	

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. Cultivation of naturally overgrown agricultural lands and classification as forest not included.
Reforestation	Re-establishment of forest through planting and/or deliberate seeding on land classified as forest. Exclude natural regeneration of forest.

5.2.3 Original data

National class	hectares/year					
	1988	1989	1990	1991	1992	average for the year
Afforestation	0	0	0	0	0	0
Reforestation	6259	6114	5629	6813	5899	6143

National class	hectares/year					
	1998	1999	2000	2001	2002	average for the year
Afforestation	0	282	416	469	383	310
Reforestation	7412	8800	8609	8005	8774	8320

National class	hectares/year					
	2003	2004	2005	2006	2007	average for the year
Afforestation	886	1788	1804	2008	1917	1681
Reforestation	10408	11972	11676	10999	11451	11301

	1988 - 1997	1998 - 2007
Total natural expansion of forest in 10 year period, hectares	47240	66320
average for the year, hectares	4724	6632

5.3 Data for Table T5

FRA 2010 Categories	Annual forest establishment (hectares/year)			...of which of introduced species ¹⁾ (hectares/year)		
	1990	2000	2005	1990	2000	2005
Afforestation	0	310	1681	0	0	0
Reforestation	6143	8320	11301	0	0	0
...of which on areas previously planted	n.a.	n.a.	n.a.	0	0	0
Natural expansion of forest	4724	6632	6632	0	0	0

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		
Reforestation		
Natural expansion of forest		

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
Information of Forest resources prepared by The State Forest Service	M	Growing stock on forest	1988, 1994, 2000, 2005	
Information of Forest resources prepared by The State Forest Service	M	Growing stock by species	2000, 2005	
Information of Forest resources from National Forest Inventory	H	Growing stock on forest	2008	
Information of Forest resources from National Forest Inventory	M	Growing stock on other wooded land		
Table T1	M	Area of other wooded land	1990, 2000, 2005, 2008	

6.2.2 Classification and definitions

National class	Definition
Growing stock	Volume over bark of all living trees more than 0 cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm. Does not include branches.

6.2.3 Original data

National class	Million m ³				
	1988	1994	2000	2005	2008
Growing stock on forest	432	489	546	569	633

Growing stock on other wooded land m ³ per hectare	16,95
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National class	1990	2000	2005	2008
Area of other wooded land T1 (1000 hectares)	115	123	118	113
Growing stock on other wooded land, million m ³	1.9	2.1	2.0	1.9

Scientific name	Common name	2000	2005
<i>Pinus sylvestris</i>	Scots pine	233,30	245,44
<i>Betula*</i>	Silver birch	153,80	158,38
<i>Picea abies</i>	Norway spruce	90,46	87,30
<i>Alnus incana</i>	Grey alder	28,48	31,34
<i>Populus tremula</i>	Aspen	19,71	24,23
<i>Alnus glutinosa</i>	Common alder	13,71	15,25
<i>Fraxinus excelsior</i>	European ash	3,47	3,70
<i>Quercus robur</i>	Common oak	2,03	2,16
Remaining		1,04	1,2
01		546	569

* – *Betula pendula* and *Betula pubescens*

Species composition, 1994

Scientific name	Common name	Growing stock, %
<i>Pinus sylvestris</i>	Scots pine	40,5
<i>Betula*</i>	birch	24,2
<i>Picea abies</i>	Norway spruce	19,8
<i>Alnus incana</i>	Grey alder	4,6
<i>Populus tremula</i>	Aspen	6,1
<i>Alnus glutinosa</i>	Common alder	3,5
<i>Fraxinus excelsior</i>	European ash	0,6
<i>Quercus robur</i>	Common oak	0,4
Other		0,3

* – *Betula pendula* and *Betula pubescens*

6.3 Analysis and processing of national data

6.3.1 Calibration

Not needed.

6.3.2 Estimation and forecasting

Estimation for 1990 using linear interpolation - Calculation of differences

Δx (1994-1988)	6	Time between observations
$\Delta y_{\text{growing stock}}$ (489-432)	57	Difference between observed values
$\Delta y_{\text{growing stock}} / \Delta x$	9,5	Difference per year

Estimations

National class	Million m ³
	1990
Growing stock on forest	451

Forecasting

For year 2010 data of national forest inventory for year 2008 is used. Since national forest inventory data is collected in a five-year cycle and the first cycle was finished in 2008, for the next five years in the second cycle data of year 2008 will be used.

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	451	546	569	633	1.9	2.1	2.0	1.9
... of which coniferous	272	324	333	335	0	0	0	0
... of which broadleaved	179	222	236	298	1.9	2.1	2.0	1.9
Growing stock of commercial species	451	546	569	633	0	0	2.0	1.9

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 st	<i>Pinus sylvestris</i>	Scots pine	182.65	233.30	245.44
2 nd	<i>Betula pendula</i> *	Silver birch	109.14	153.80	158.38
3 rd	<i>Picea abies</i>	Norway spruce	89.30	90.46	87.30
4 th	<i>Alnus incana</i>	Grey alder	20.75	28.48	31.34
5 th	<i>Populus tremula</i>	Aspen	27.51	19.71	24.23
6 th	<i>Alnus glutinosa</i>	Common alder	15.78	13.71	15.25
7 th	<i>Fraxinus excelsior</i>	European ash	2.71	3.47	3.70
8 th	<i>Quercus robur</i>	Common oak	1.80	2.03	2.16
Remaining			1.36	1.04	1.2
TOTAL			451	546	569

* – White birch *Betula pubescens* also approximately 5 mln. cubic metres

Note: Rank refers to the order of importance in terms of growing stock, i.e. 1st 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 ¹ of trees included in growing stock (X)	0	
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	0	
Minimum diameter (cm) of branches included in growing stock (W)		Not included
Volume refers to “above ground” (AG) or “above stump” (AS)	AG	

6.5 Comments to Table T6

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total growing stock		The original data source doesn't mention why the growing stock increased substantially from 2005 to 2008, however it might be due to the more precise inventory method.
Growing stock of broadleaved / coniferous		
Growing stock of commercial species		According to experts, till 2005 wood from other wooded land was not commercially used, however with development of technologies and beginning of production of chipped wood, using also wood from brush land, it can be considered commercial.
Growing stock composition		

Other general comments to the table

¹ 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
Information of Forest resources from National Forest Inventory	H	Dead wood	2008	
Data from table T6	M	Growing stock	1990 2000 2005 2008	
LATVIA'S NATIONAL INVENTORY REPORT submitted under United Nations Convention on Climate Change	M	factors for converting growing stock to biomass		

7.2.2 Classification and definitions

National class	Definition
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

Dead wood for year 1990 and 2000 is 6 m³ per hectare (expert assumption)

Dead wood for year 2005 is 17,7 m³ per hectare (expert assumption based on data from National forest inventory)

Data for 2008 are original data from the national forest inventory

Dead wood on other wooded land is 0 (expert assumption)

	1990	2000	2005	2008
M ³ /ha	6	6	17,7	
Dead wood total milj.m ³	1,7	1,8	53,7	56,0

7.3 Analysis and processing of national data

7.3.1 Estimation and forecasting

There are used country specific factors for converting growing stock to biomass.

Forest

Year	Growing stock Million m ³	WD (basic wood density)	BEF (Biomass expansion factor)	AGB (above ground biomass)	R (root-shoot ratio)	BGB (below ground biomass)	Dead wood biomass	Conversion factor	Carbon in dead wood
1990	451	0,5	1,3	293,15	0,32	93,81	1,02	0,5	0,51
2000	546	0,5	1,3	354,9	0,32	113,57	1,08	0,5	0,54
2005	569	0,5	1,3	369,85	0,32	118,35	32,22	0,5	16,11
2008	633	0,5	1,3	411,45	0,32	131,66	33,6	0,5	16,8

Other wooded land

Year	Growing stock Million m ³	WD (basic wood density)	BEF (Biomass expansion factor)	AGB (above ground biomass)	R (root-shoot ratio)	BGB (below ground biomass)
1990	1,9	0,5	1,3	1,23	0,32	0,39
2000	2,1	0,5	1,3	1,36	0,32	0,43
2005	2,0	0,5	1,3	1,30	0,32	0,41
2008	1,9	0,5	1,3	1,23	0,32	0,39

For year 2010 data of national forest inventory for year 2008 is used. Since national forest inventory data is collected in a five-year cycle and the first cycle was finished in 2008, for the next five years in the second cycle data of year 2008 will be used.

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	293.15	354.9	369.85	411.45	1.23	1.36	1.30	1.23
Below-ground biomass	93.81	113.57	118.35	131.66	0.39	0.43	0.41	0.39
Dead wood	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TOTAL	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		
Below-ground biomass		
Dead wood	Original data shows super increase from 2000 to 2005, these data is insufficient to compare the trend of biomass. Hence these figures are reported as not available in the table.	

Other general comments to the table

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
Data from table T7	M	Biomass stock	1990 2000 2005 2008	
LATVIA'S NATIONAL INVENTORY REPORT Submitted under United Nations Convention on Climate Change	M	Biomass stock converting factor to carbon stock		
LATVIA'S NATIONAL INVENTORY REPORT Submitted under United Nations Convention on Climate Change	M	Average amount of litter found in the BioSoil plots (tonnes C ha-1)		
LATVIA'S NATIONAL INVENTORY REPORT Submitted under United Nations Convention on Climate Change	M	soil organic carbon stock in mineral soil (tonnes C ha-1)		
Data from table T1	M	Forest area, area of other wooded land	1990 2000 2005 2008	

8.2.2 Classification and definitions

No national classification is available.

8.2.3 Original data

Year	AGB (above ground biomass)	Conv erting factor	Carbon in above- ground biomass	BGB (below ground biomass)	Conve rting factor	Carbon in below- ground biomass	Dead wood biomass	Convert ing factor	Carbon in dead wood
1990	293.15	0.5	146.5	93.81	0.5	46.905	1.02	0.5	0.51
2000	354.9	0.5	177.45	113.57	0.5	56.785	1.08	0.5	0.54
2005	369.85	0.5	184.925	118.35	0.5	59.175	32.22	0.5	16.11
2008	411.45	0.5	205.725	131.66	0.5	65.83	33.6	0.5	16.8

Other wooded land

Year	AGB (above ground biomass)	Convertin g factor	Carbon in above- ground biomass	BGB (below ground biomass)	Convertin g factor	Carbon in below- ground biomass
1990	1.23	0.5	0.615	0.39	0.5	0.195
2000	1.36	0.5	0.68	0.42	0.5	0.215
2005	1.30	0.5	0.65	0.39	0.5	0.205
2008	1.23	0.5	0.615	0.39	0.5	0.195

Carbon stock in litter

Year	Average amount of litter found in the BioSoil plots (tonnes C ha-1)	Forest area (Million hectares)	Carbon in litter (Million metric tonnes)	Area of other wooded land (Million hectares)	Carbon in litter (Million metric tonnes)
1990	21.2	3.173	67.26	0.115	2.43
2000	21.2	3.241	68.70	0.123	2.60
2005	21.2	3.297	69.89	0.118	2.43
2008	21.2	3.331	70.61	0.113	2.33

Soil carbon

There are used IPCC default values per hectare (Guidelines for country reporting to FRA 2010 Appendix 5, table 5.10)

Year		Area of HAC soils (Million hectares)	Soil organic C stocks (Tones C ha-1)	Carbon (Million metric tonnes)	Area of sandy soil	Soil organic C stocks (Tones C ha-1)	Carbon (Million metric tonnes)
1990	Dry soil	1.086	50	54.30	0.319	34	10.85
	moist soil	0.306	95	29.07	0.090	71	6.39
2000	Dry soil	1.110	50	55.50	0.326	34	11.08
	moist soil	0.313	95	29.74	0.092	71	6.53
2005	Dry soil	1.129	50	56.45	0.332	34	11.29
	moist soil	0.318	95	30.21	0.094	71	6.67
2008	Dry soil	1.141	50	57.05	0.335	34	11.39
	moist soil	0.322	95	30.59	0.095	71	6.75

Year	Area of spodic soil	Soil organic C stocks (Tones C ha-1 in 0-30 cm depth)	Carbon (Million metric tonnes)	Area of wetland soil	Soil organic C stocks (Tones C ha-1 in 0-30 cm depth)	Carbon (Million metric tonnes)
1990	0.568	115	65.32	0.803	87	69.86
2000	0.580	115	66.7	0.820	87	71.34
2005	0.590	115	67.85	0.834	87	72.55
2008	0.596	115	68.54	0.843	87	73.34

Year		Area of OWL (Million hectares)	Soil organic C stocks (Tones C ha-1)	Carbon (Million metric tonnes)
1990	Dry soil	0.090	50	4.50
	moist soil	0.025	95	2.38
2000	Dry soil	0.096	50	4.80
	moist soil	0.027	95	2.57
2005	Dry soil	0.092	50	4.60
	moist soil	0.026	95	2.47
2008	Dry soil	0.088	50	4.40
	moist soil	0.025	95	2.38

Percentage of soil types (expert assumption)

HAC	43,9 %
Sandy soil	12,9 %
Spodic soil	17,9 %
Wetland soil	25,3 %
	100 %

Dry soil – 78 %; moist soil 22 %

8.3 Analysis and processing of national data

8.3.1 Estimation and forecasting

For year 2010 data of national forest inventory for year 2008 is used. Since national forest inventory data is collected in a five-year cycle and the first cycle was finished in 2008, for the next five years in the second cycle data of year 2008 will be used.

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	146.58	177.45	184.93	205.73	0.62	0.68	0.65	0.62
Carbon in below-ground biomass	46.90	56.78	59.18	65.83	0.20	0.22	0.21	0.20
Sub-total: Living biomass	193.48	234.23	244.11	271.56	0.82	0.90	0.86	0.82
Carbon in dead wood	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Carbon in litter	61.56	63.11	64.34	70.17	2.37	2.54	2.37	2.37
Sub-total: Dead wood and litter	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Soil carbon	235.79	240.89	245.03	247.66	6.88	7.37	7.07	6.78
TOTAL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Soil depth (cm) used for soil carbon estimates	30
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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		

Other general comments to the table

9 Table T9 – Forest fires

9.1 FRA 2010 Categories and definitions

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

9.2 National data

9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Information of Forest resources prepared by The State Forest Service	H	land area affected by forest fire	1988 – 1992, 1998-2007	
State Fire and Rescue Service	M	Number of dry grass fire in agriculture land	1998-2007	

9.2.2 Classification and definitions

National class	Definition
Dry grass fire in agriculture land	Unplanned, prohibited burning of dry grass, usually in springs, at the beginning of vegetation season.
Forest fire	Fire on forest land (according to the national forest definition - land covered by forest, land under forest infrastructure facilities, as well as adjacent overflowing clearings, marshes and glades) and adjacent areas

9.2.3 Original data

Forest fires

	Total land area affected by fire		of which on forest		... of which on other wooded land**		of which on other land	
	hectares	number of fires	hectares	number of fires*	hectares	number of fires	hectares	number of fires*
1988.	146	436	146	436	0	0	0	0
1989.	58	331	58	331	0	0	0	0
1990.	258	604	258	604	0	0	0	0
1991.	69	225	69	225	0	0	0	0
1992.	8412	1510	8412	1510	0	0	0	0
average for the 1988-1992	1789	621	1789	621	0	0	0	0

1998.	211	375	106				105	
1999.	1544	1196	597				948	
2000.	1341	915	582				760	
2001.	329	272	267				62	
2002.	2364	1742	2229				135	
average for the 1998-2002	1158	900	756	587*	0**	0**	433	313*
2003.	559	900	444				115	
2004.	485	647	427				57	
2005.	120	365	114				6	
2006.	3790	1929	3387				403	
2007.	331	425	272				59	
2008.	364	700	311				53	
average for the 2003-2007	1130	993	991	870	0**	0**	139	123*

* expert estimation taking into account the average area burnt during the fire

** In Latvia there is no separate land use category as other wooded land, therefore data about fire on other wooded land is not gathered. Since the area of other wooded land is a little percentage, number of fires and the area burnt may be considered almost zero.

Dry grass fire in agriculture land

	number of fires	Area (hectares)
1988.	479	35
1989.	683	121
1990.	729	628
1991.	1114	1200
1992.	816	628
average for the 1988-1992	764	522
1998.	826	1345
1999.	1718	2809
2000.	1764	2536
2001.	1593	5188
2002.	4329	12233
average for the 1998-2002	2046	4822
2003.	3847	14215
2004.	3155	7314
2005.	2023	2319
2006.	7453	23709
2007.	2651	4048
average for the 2003-2007	3825	10321

Planned fires

Year	number of fires	Area (hectares)
2000	1	600
2005	3	51

9.3 Analysis and processing of national data

FRA 2010 category	National category
Total land area affected by fire	Total forest fires, dry grass fires on agriculture land
... of which on forest	Forest fire on forests
... of which on other land	Forest fires on other land, dry grass fire on agriculture land

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	2.31	1385	6.02	2946	11.45	4818
... of which on forest	1.79	621	0.76	587	0.99	870
... of which on other wooded land	0	0	0	0	0	0
... of which on other land	0.52	764	5.26	2359	10.46	3948

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

9.5 Comments to Table T9

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Area affected by fire	Area of fires in other wooded land is very insignificant, therefore data for this category is not compiled separately.	
Number of fires	Number of fires in other wooded land is very insignificant, therefore data for this category is not compiled separately.	
Wildfire / planned fire	The number of planned fires in Latvia is very insignificant. During all the reporting period there have been only 4 cases of planned fires (less than 1%)	

Other general comments to the table

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
Information of Forest resources prepared by The State Forest Service	H	Destroyed forest stands by disturbance factors	1991-2007	

10.2.2 Classification and definitions

No national classification is available related to this table.

10.2.3 Original data

	Affected forest area (hectares)						Total
	Damaged by insects	Damaged by diseases	Damaged by animals	Damaged by snow, wind	Damaged by water**	Damaged by other abiotic factors*	
1988.	n.a	n.a	n.a	n.a	n.a	n.a	n.a
1989.	n.a	n.a	n.a	n.a	n.a	n.a	n.a
1990.	n.a	n.a	n.a	n.a	n.a	n.a	n.a
1991.	13	317	244	62	296	0	932
1992.	16	38	263	168	353	0	838
average for the 1988-1992	15	177	254	115	324	0	885
1998.	182	61	226	880	269	0	1618
1999.	144	125	236	497	208	0	1210
2000.	432	113	216	695	304	120	1880
2001.	348	69	343	1411	176	126	2473
2002.	375	47	245	1562	224	46	2499
average for the 1998-2002	296	83	253	1009	236	58	1936
2003.	430	89	263	473	177	54	1486
2004.	576	86	196	225	269	53	1405
2005.	128	53	32	18661	186	24	19084
2006.	157	41	81	1306	255	22	1862
2007.	717	62	87	983	171	10	2030
average for the 2003 – 2007	402	66	132	4330	212	33	5173

* - other damages include, for example, frost, drought, mechanical damages.

**The disturbance by water includes mostly areas which are covered with water because of action of beavers.

10.3 Analysis and processing of national data

10.3.1 Reclassification into FRA 2010 categories

National class	Damaged by insects	Damaged by diseases	Damaged by animals	Damaged by snow, wind	Damaged by water	Damaged by other abiotic factors
FRA 2010 categories	Disturbance by insects	Disturbance by diseases	Disturbance by other biotic agents	Disturbance caused by abiotic factors	Disturbance caused by abiotic factors	Disturbance caused by abiotic factors

10.4 Data for Table T10

Table 10a – Disturbances

FRA 2010 category	Affected forest area (1000 hectares)		
	1990	2000	2005
Disturbance by insects	0.02	0.30	0.40
Disturbance by diseases	0.18	0.08	0.07
Disturbance by other biotic agents	0.25	0.25	0.13
Disturbance caused by abiotic factors	0.44	1.31	4.57
Total area affected by disturbances	0.89	1.94	5.17

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)
<i>Gilpinia pallida</i>	<i>Pinus sylvestris</i>	1993 - 1995	5.0	
<i>Panolis flammea</i>	<i>Pinus sylvestris</i>	1994	0.1	
<i>Lymantria monacha</i>	<i>Pinus sylvestris</i>	1995 -1996	3.0	
Bupalus piniarius	<i>Pinus sylvestris</i>	1999	0.1	10 -12
Dessication of ash-trees	<i>Fraxinus excelsior</i>	2005-2007	0.5	
<i>Neodiprion sertifer</i>	<i>Pinus sylvestris</i>	2004-2008	20.0	
<i>Ips typographus</i>	<i>Picea abies</i>	2006 - ongoing	1.2	
<i>Ips accuminatus</i>	<i>Pinus sylvestris</i>	2006-2008	0.04	
<i>Lymantria dispar</i>	<i>Betula pewardula</i>	2008- ongoing	0.04	First in Latvia

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)
Total forest area affected by woody invasive species	

10.5 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	<p>There are no significant woody invasive species in Latvia that constitute, or are expected to constitute, a problem for forest ecosystem health and vitality.</p> <p>A great part of foreign species cannot compete with domestic species, therefore in natural ecosystems they can be found in comparatively small areas, or their life is not long.</p>	

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
Survey carried out by Latvian forestry and forest science society „Provision of national consumption of Latvia with timber and wood products” 1990	M	Industrial roundwood and woodfuel removals total volume under bark	1988, 1990	
Statistics	M	removals total volume under bark	1991	
Information on wood removals reported to EUROSTAT/ FAO/ ITTO/ UNECE in Appendix 3	M	Industrial roundwood and woodfuel removals total volume under bark	1992 – 2006	
Contract work of Riga Technical University „Study of actual fuel wood flow”, 2008	M	Bark factor	all	
JQ	M	Industrial roundwood removals total volume under bark	2007	
Contract work of Riga Technical University „Study of actual fuel wood flow”, 2008	M	woodfuel removals total volume	2007	

11.2.2 Classification and definitions

No national classification is available.

11.2.3 Original data

	industrial roundwood	woodfuel	Total
1988	2534,9	2336,1	4871,0
1989	n.a	n.a	n.a
1990	2282,3	2117,3	4460,4
1991*	2248,2	2144,0	4392,2

* – Distribution of industrial roundwood and woodfuel has been calculated taking into account percentage distribution of 1990.

Year	Total volume of industrial roundwood removals (1000 m ³ u.b.)	Total volume of woodfuel removals (1000 m ³ u.b.)*
1988.	2534,9	2336,1
1989.	n.a	n.a
1990.	2282,3	2117,3
1991.	2248,2	2144,0
1992.	2866,9	1133,1
average for the 1988, 1990, 1991, 1992	2483,1	1932,6
1998.	7185,0	2845,0
1999.	11518,0	2490,0
2000.	12624,0	1680,0
2001.	11261,0	1580,0
2002.	12267,9	1198,0
average for the 1998-2002	10971,2	1958,6
2003.	11925,0	990,8
2004.	11784,0	970,0
2005.	11892,6	950,0
2006.	11865,6	979,0
2007.	11144,9	1028,0
average for the 2003-2007	11722,4	983,6 (not used)

* – Information on wood removals reported to EUROSTAT/ FAO/ ITTO/UNECE in Appendix 3

Information from Contract work of Riga Technical University „Study of actual fuel wood flow”, 2008. According to experts, data of 2008 is equal to the data of average woodfuel removals for last 5 years.

National bark factor	1,12
Woodfuel removals from forest (1000 m ³ o.b.)	2530
Woodfuel removals from agriculture land (1000 m ³ o.b.)	700

11.3 Data for Table T11

FRA 2010 Category	Industrial roundwood removals			Woodfuel removals		
	1990	2000	2005	1990	2000	2005
Total volume (1000 m ³ o.b.)	2781.1	12287.7	13129.1	2164.5	2193.6	3230
... of which from forest	2781.1	12287.7	13129.1	2164.5	2193.6	2530
Unit value (local currency / m ³ o.b.)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total value (1000 local currency)	n.a.	n.a.	n.a.	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.

	1990	2000	2005
Name of local currency	LVL	LVL	LVL

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		

Other general comments to the table

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
<u>Plant products / raw material</u>
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
<u>Animal products / raw material</u>
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
Expert estimation	L	NWFP quantity and value	2005	

12.2.2 Classification and definitions

No national classification is available.

12.2.3 Original data

Hunted game animals

	Number	Mass, kg
Elks	2651	477 180
Red deer	3804	456 480
Roe deer	21080	421 600
Wild boars	19457	1167 420
Beaver	19838	138 866
Total		2 661 546

	Name of product	Unit	NWFP Removals (expert estimation)	Value 1000 LVL Per unit	Value 1000 LVL
1	Game products	tones	2661	1,6	4 257
2	Blueberry (bilberry)	tones	1 930	1,4	2 700
3	Bog- berries (cranberry)	tones	500	1,0	500
4	Cowberry (red bilberry)	tones	610	0,9	549
5	Mushrooms	tones	1 200	2,1	2 520
6	Birchen juice	tones	2850	0,3	855
7	Christmas trees	1000 ed	905	1,5	1 358
8	Branches and foliage for medicine and pharmaceuticals	tones	800		
9	Buds for medicine	tones	57	15,0	855

12.3 Data for Table T12

Rank	Name of product	Key species	Unit	NWFP removals 2005		NWFP category
				Quantity	Value (1000 local currency)	
1 st	Game products		tones	2661	4 257	12.
2 nd	Blueberry (bilberry)		tones	1 930	2 700	1.
3 rd	Mushrooms		tones	1 200	2 520	1.
4 th	Christmas trees	<i>Picea abies</i>	1000 ed.	905	1 358	6.
5 th	Birchen juice	<i>Betula pendula</i>	tones	2850	855	1.
6 th	Buds for medicine	<i>Pinus sylvestris</i> , <i>Betula pendula</i>	tones	57	855	3.
7 th	Cowberry (red bilberry)		tones	610	549	1.
8 th	Bog- berries (cranberry)		tones	500	500	1.
9 th	Branches and foliage for medicine and pharmaceuticals	<i>Pinus sylvestris</i> <i>Picea abies</i>	tones	800		3.
10 th						
	All other plant products					
	All other animal products					
	TOTAL				n.a.	

	2005
Name of local currency	LVL

12.4 Comments to Table T12

Variable / category	Comments related to data, definitions, etc.
10 most important products	There is no statistical data on non-wood forest products removals and value of removals in Latvia. This is an opinion of experts, taking into account the available non wood forest products and demand. Data on non-wood forest products on the market and non-wood forest products for personal consumption is not given separately.
Other plant products	
Other animal products	
Value by product	
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
National statistics on employment		Employment	1990, 2000, 2005	

13.2.2 Classification and definitions

No national classification is available.

13.2.3 Original data

FRA 2010 Category	Employment (years FTE)		
	1990	2000	2005
Employment in primary production of goods	15 000	19 000	35 000
...of which paid employment	15 000	19 000	33 761
...of which self-employment	n.a.	n.a.	1 239
Employment in management of protected areas (in administration offices of protected territories and the Nature Protection Board).	n.a.	n.a.	165

13.3 Data for Table T13

FRA 2010 Category	Employment (1000 years FTE)		
	1990	2000	2005
Employment in primary production of goods	15.0	19.0	35.0
...of which paid employment	15.0	19.0	33.8
...of which self-employment	n.a.	n.a.	1.2
Employment in management of protected areas	n.a.	n.a.	0.16

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		
Paid employment / self-employment		
Employment in management of protected areas		

Other general comments to the table

14 Table T14 – Policy and legal framework

14.1 FRA 2010 Categories and definitions

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

14.2 Data for Table T14

Indicate the existence of the following (2008)			
Forest policy statement with national scope	<input checked="" type="checkbox"/>	Yes	
	<input type="checkbox"/>	No	
If Yes above, provide:	Year of endorsement	1998	
	Reference to document	Latvian Forest Policy	
National forest programme (nfp)	<input checked="" type="checkbox"/>	Yes	
	<input type="checkbox"/>	No	
If Yes above, provide:	Name of nfp in country	Policy Baselines of Forest Related Sectors' Development	
	Starting year	2006	
	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			
Law (Act or Code) on forest with national scope	<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	2000	
	Year of latest amendment	2008	
	Reference to document	Forest Law	

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.		
Sub-national forest policy statements	<input type="checkbox"/>	Yes
	<input checked="" type="checkbox"/>	No
If Yes above, indicate the number of regions/states/provinces with forest policy statements		
Sub-national Laws (Acts or Codes) on forest	<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	
National forest programme (nfp)	Policy Baselines of Forest Related Sectors' Development are accepted in year 2006. This is a long term policy document where long term strategic goals of forest sector development, problems which prevent to reach them, basic principles of development policy and policy results, directions of action leading to reach goals of development policy are formulated.
Law (Act or Code) on forest with national scope	
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	
Level of subordination of Head of Forestry within the Ministry		1 st level subordination to Minister
	X	2 nd level subordination to Minister
		3 rd level subordination to Minister
		4 th or lower level subordination to Minister
Other public forest agencies at national level	State Forest Service	
Institution(s) responsible for forest law enforcement	State Forest Service	

Table 15b – Human resources

FRA 2010 Category	Human resources within public forest institutions					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Total staff	1688	27	1705	37	1598	37
...of which with university degree or equivalent	677	n.a.	992	n.a.	950	n.a.

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		

Other general comments to the table

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
Secretariat Forest Faculty of Latvia University of Agriculture	H	Graduates data	2000, 2005, 2008	
Secretariat of Ogre's Forest technical school	H	Graduates data	2000, 2005, 2008	
Director of Latvian State Forest Research Institute "Silava"	H	Professionals working data	2000, 2005, 2008	
Secretariat of Latvian State Institute of Wood Chemistry	H	Professionals working data	2000, 2005, 2008	

16.2.2 Original data

Ogre's Forest technical school

FRA 2010 Category	Graduation of students in forest – related education					
	2000		2005		2008	
	Number	Female%	Number	Female%	Number	Female%
Master's degree (MSc)	-	-	-	-	-	-
Bachelor's degree (BSc)	-	-	-	-	-	-
Certificate/ Diploma	87	8	34	24	51	0

Latvia University of Agriculture

FRA 2010 Category	Graduation of students in forest – related education					
	2000		2005		2008	
	Number	Female%	Number	Female%	Number	Female%
Master's degree (MSc)	10	20	19	32	17	12
Bachelor's degree (BSc)	24	4	9	11	18	39
Certificate/ Diploma	132	25	145	20	105	30

Professionals working in publicly funded forest research centres:

Latvian State Forest Research Institute "Silava"

	2000		2005		2008	
	Number	Female%	Number	Female%	Number	Female%
PhD	16	19	23	30	26	31
MSc	8	75	16	44	33	45
BSc	2	50	26	46	20	35

Latvian State Institute of Wood Chemistry

	2000		2005		2008	
	Number	Female%	Number	Female%	Number	Female%
PhD	37	51	34	50	32	50
MSc	3	67	5	60	8	25
BSc	18	67	22	59	19	74

Professionals working in publicly funded forest research centres (Silava and Wood Chemistry)

	2000		2005		2008	
	Number	Female%	Number	Female%	Number	Female%
PhD	53	42	57	42	58	41
MSc	37	59	48	48	57	51
BSc	20	65	48	52	39	54

16.3 Data for Table T16

FRA 2010 Category	Graduation ¹⁾ of students in forest-related education					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Master's degree (MSc) or equivalent	10	20	19	32	17	12
Bachelor's degree (BSc) or equivalent	24	4	9	11	18	39
Forest technician certificate / diploma	219	19	179	21	207	15
FRA 2010 Category	Professionals working in publicly funded forest research centres ²⁾					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Doctor's degree (PhD)	53	42	57	42	58	41
Master's degree (MSc) or equivalent	37	59	48	48	57	51
Bachelor's degree (BSc) or equivalent	20	65	48	52	39	54

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	<p>Higher education</p> <p>Latvia University of Agriculture Forest Faculty Ph D (Total duration PhD= BSc 4 years + MSc 2 years + PhD 3 years = 9 years): Wood materials and Technologies Forest science</p> <p>MSc (Total duration MSc=BSc 4 years + MSc 2 years = 6 years): Forest ecology and silviculture Forest operations and machinery Wood material and technologies Forest economics and politics Forest science</p> <p>BSc (4 years) Woodworking Woodworking technologies Forest science Forest engineering Silviculture</p>	

	<p>Vocational education Ogre’s Forest technical school Post elementary education (4 years) Silviculture Logging Forestry machinery</p> <p>Postal course (post secondary education) (2 years) Silviculture</p>	
Professionals working in public forest research centres	Public forest research centres in Latvia are: Latvian State Forest Research Institute "Silava" Latvian State Institute of Wood Chemistry	

Other general comments to the table

17 Table T17 – Public revenue collection and expenditure

No information is available for this table.