



Forestry Department

Food and Agriculture Organization of the United Nations

**GLOBAL FOREST RESOURCES
ASSESSMENT 2010**

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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
Forest Code of the Ukraine	H	Forest	2006	
Land Code of the Ukraine	H	Other land area	2002	
Manual for Management of the State Forest Cadastre and Primary Inventory of Forests	H	Forest	2007	
State Land Cadastre for 2003-2007	H	Other land area	2003-2007	
State Forest Cadastre for 1988-2002	H	Forest	1988-2002	
FAOSTAT	H	Total country area, Land area, Inland water bodies	1990, 2000	

1.2.2 Classification and definitions

National class	Definition
Forest	The unity of land, vegetation (where trees and bushes are dominant), animals, microorganisms and other components of nature, the developments of which are biologically inter-related and which influence surrounding environment
Forest Fund	All forests on the territory of the Ukraine are parts of the Forest Fund. The FF includes shelterbelts, protective plantations along railways and motorways, canals, hydro-technical constructions and water bodies. The FF also includes land parcels not covered with forest vegetation but reserved for forest management needs
a) Forest land	Areas covered or not covered by forest vegetation (trees and bushes), areas which have to be afforested (clear cut areas, burned areas, sparse stands and bare land), forest roads, openings, fire-breaks, un-closed plantations and nurseries
- Land covered by forest vegetation	Land areas covered by forest vegetation which are occupied by young stands with the density of 0.4 (around 40% canopy cover) and higher and stands of other age groups with the density of 0.3 (around 30% canopy cover) and higher
- Land not covered by forest vegetation	Land areas not covered by forest vegetation but reserved for forest restoration (sparse vegetation, burned areas, dead stands, clear cut areas, glades and bare lands)
b) Non-forest land	Areas occupied by buildings which are used for forest management needs, electric power transmission lines, pipelines and underground communication cables
Vegetation which is not included in the FF	All types of vegetation within populated areas, which are not included in the forest category; individual trees and groups of trees, bushy vegetation on agricultural lands, lands of private households, lands adjacent to private households, summer cottages and gardens

1.2.3 Original data

FRA 2005 categories	National categories
Forest	“Forest land” except: shelterbelts, protective forest plantations along railways, motorways and canals and bushes
Other Wooded Land (OWL)	“Forest land” covered with bushes and scrubland
Other Land with Tree Cover (OLWTC)	Territories covered by woody plants but excluded from the ‘forest land’ category (except bushes), areas with perennial tree cover and urban parks

Classes	Area (1000 ha)		
	1988	1996	2002
Forest	9213	9458	9536
Other wooded land	26	36	n.a
Other land	48697	48442	n.a
...of which with tree cover ¹⁾	934	916	n.a
Inland water bodies	2419	2419	n.a
TOTAL	60355	60355	n.a

1.3 Analysis and processing of national data

1.3.1 Calibration

The FAOSTAT figure for Inland water is used for the reporting to make the total country area tally with the official total country area (FAOSTAT). Other land (1990, 2000 and 2005) is calculated as Total country area less: Forest, Other wooded land and Inland water bodies.

1.3.2 Estimation and forecasting

The Estimation for 1990 is made by linear interpolation (1988 and 1996). Forecasting Other wooded land and Other land with tree cover for 2000 is made by linear extrapolation (1988-1996), the forest area is interpolated using forest area 1996-2002. Forest area 2005 is linearly extrapolated using forest area (1996-2002). Forest area 2010 is linearly extrapolated using forest area (2006-2007). Based on expert estimates, the forecasted values for Other wooded land and Other land with tree cover in 2010 are equal to those in 2000 and 2005.

	Area 1000 hectares					
	1988	1990	1996	2000	2005	2010
Forest	9213	9274	9458	9510	9575	9705
Other wooded land	26	29	36	41	41	41
Other land	48696	48632	48441	48384	48161	48189
...of which with tree cover ¹⁾	934	930	916	907	907	907
Inland water bodies ²⁾	2435	2435	2435	2435	2435	2435
TOTAL country area	60370	60370	60370	60370	60370	60370

¹⁾ Area of "Other land with tree cover" is included in the area reported under "Other land" and should therefore be excluded when calculating the total area for the country.

²⁾ FAOSTAT figure.

1.3.3 Reclassification into FRA 2010 categories

Not applied. Described in p.1.2.3.

1.4 Data for Table T1

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	9274	9510	9575	9705
Other wooded land	28	41	41	41
Other land	48633	48384	48322	48192
...of which with tree cover	930	907	907	907
Inland water bodies	2420	2420	2417	2417
TOTAL	60355	60355	60355	60355

1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest	The minimum area that is being accounted for as a forest is 0.1 hectares	Forest areas are changed due creation new forest on in-arable and low productive agricultural lands - 30 thou ha in general
Other wooded land		
Other land		
Other land with tree cover		
Inland water bodies	FAOSTAT data.	

Other general comments to the table

It was foreseen in the period of 2009-2013 to carry out national inventory based on statistical sampling method and European standards. Before this work it should be developed theoretical and methodological normative documents, provided pilot methodology testing and results estimation at regional level. Now it was created department of national forest inventory within Forest management and design enterprise.

NFI providing in Ukraine is reasonable and possible at first time as experimental work on pilot territories trough inviting educational and scientific entities keeping in mind elaborating methodology and its providing based on national features.

Because of financial crises and limited financing in years 2009 and 2010 NFI will be provided as experimental work in Sumy and Chernivzi region on area around 700 thou ha.

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

Field inventory	2009-2013*
Remote sensing survey / mapping	

*please see comment above

2 Table T2 – Forest ownership and management rights

2.1 FRA 2010 Categories and definitions

Category	Definition
Public ownership	Forest owned by the State; or administrative units of the public administration; or by institutions or corporations owned by the public administration.
Private ownership	Forest owned by individuals, families, communities, private co-operatives, corporations and other business entities, private religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.
Individuals (sub-category of Private ownership)	Forest owned by individuals and families.
Private business entities and institutions (sub-category of Private ownership)	Forest owned by private corporations, co-operatives, companies and other business entities, as well as private non-profit organizations such as NGOs, nature conservation associations, and private religious and educational institutions, etc.
Local communities (sub-category of Private ownership)	Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area. The community members are co-owners that share exclusive rights and duties, and benefits contribute to the community development.
Indigenous / tribal communities (sub-category of Private ownership)	Forest owned by communities of indigenous or tribal people.
Other types of ownership	Other kind of ownership arrangements not covered by the categories above. Also includes areas where ownership is unclear or disputed.
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
Land Code of the Ukraine	H	Other land area	2002	
Forest Code of the Ukraine	H	Forest	2006	
State Forest Cadastre for 1988-2002	M	Forest	1988-2002	
State Land Cadastre for 1990-2008	M	Other land area	1988-2008	

2.2.2 Classification and definitions

National class	Definition
State	All forests of Ukraine excluding communal and private forest
Communal	Forest stands within the boundaries of settlements other than those in the state and private property as well as beyond the boundaries of the settlements on the objects of communal property
Private	<ul style="list-style-type: none"> Forest stands on land plots up to 5 ha within agricultural and farming lands. Forest stands grown up on private land plots.

2.2.3 Original data

See final reporting table.

2.3 Data for Table T2

Table 2a - Forest ownership

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public ownership	9274	9503	9568
Private ownership	0	7	7
...of which owned by individuals	0	7	7
...of which owned by private business entities and institutions	0	0	0
...of which owned by local communities	0	0	0
...of which owned by indigenous / tribal communities	0	0	0
Other types of ownership	0	0	0
TOTAL	9274	9510	9575

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	6865	8034	8678
Individuals	0	0	0
Private corporations and institutions	0	0	0
Communities	1813	245	12
Other	596	1224	878
TOTAL	9274	9503	9568

2.4 Comments to Table T2

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Public ownership	Include state and communal ownership	
Private ownership		
Other types of ownership		
Management rights	State forest area is given for permanent use to different Ministries and agencies. The biggest forest areas are used by State Forestry Committee 68% and Ministry of Agrarian Policy 17%. In column "Communities" is given area under collective farms - "kolhozes" responsibilities In column "Other" is given area of reserve lands	

Other general comments to the table

In compliance with the new Land Code adopted in 2001 three types of property was declared in Ukraine: state, communal and private. Land plots up to 5 ha from the agricultural and farming lands may be transferred to the private property. Besides, legal and physical persons have the right to purchase land plots of abandoned and degraded lands for the purpose of afforestation. Communal property should include the forest stands within the boundaries of settlements other than those in the state and private property as well as beyond the boundaries of the settlements on the objects of communal property. However, a procedure for demarcation of the lands has not yet been determined. Almost 0.4 million ha are not in any permanent use and located on areas of reserve fund. These forest are not in a good condition because of absence thinning, protection against fires, pests and disease, illegal logging.

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
Forest Code of the Ukraine	H	Forest	2006	
State Forest Cadastre for 1988-2002	H	Forest	1988-1996	
Order of dividing forest by target use and creation especially protection plots	H	Forest	2007	
State Cadastre of territories and objects of Nature Reserve Fund	M		2006-2007	

3.2.2 Classification and definitions

National class	Definition
Before year 2006	
Forests of the second group	Forests with ecological and exploitative functions managed under the limited use regime with the aim to maintain their protective functions as well as continuous and inexhaustible use
Forests of the first group including:	
Forests primarily fulfilling water protective functions	Protective forest belts along rivers and around lakes, dams and other water bodies. Forest belts protecting spawning areas of commercially valuable fish species
Forests primarily fulfilling protective functions	Forests preventing soil erosion, protective forest belts along rail- and motorways, especially valuable forest massifs, protective forest belts of state importance, forests of steppe and forest-steppe zones and mountainous regions with highly important environment protection function
Forests with special functions	Forests within specifically protected territories (nature reserves - 'zapovedniki', national parks, natural monuments, reserved areas, regional landscape parks), forests of scientific or historical importance and sub-alpine communities of woody plants
Forests fulfilling sanitary-hygienic and recreational functions	Forests near population centers, green belts around population centers and industrial enterprises, forests of the first and second belts within sanitary watershed zones and forests within sanitary protection districts of recreational territories
After year 2006	
Forests primarily fulfilling protective functions	Forest with mainly water, soil and other protective function.
Forests fulfilling health-improving and recreational functions	Forest with mainly sanitary-hygienic, health-improving and recreational functions.
Forests primarily fulfilling nature protection, scientific, historic-cultural functions	Forest with especially nature protection, esthetic, scientific functions.
Commercial forest	All other forests

3.2.3 Original data

FRA 2005 categories	Area 1000 hectares	
	1988	1996
Primary function		
Production	4423	4533
Protection of soil and water	2764	2878
Conservation of Biodiversity	276	248
Social services	1750	1799
Total forest	9213	9458

3.3 Analysis and processing of national data

3.3.1 Calibration

Not applied.

3.3.2 Estimation and forecasting

For 1990, linear Interpolation of (1988-1996) was applied. The percentage of primary function in 1996 was applied to forest area in 2000 and 2005.

FRA 2005 categories	Area 1000 hectares				
	1988	1990	1996	2000	2005
Primary function					
Production	4423	4450	4533	4558	4589
Protection of soil and water	2764	2793	2878	2894	2914
Conservation of Biodiversity	276	269	248	249	251
Social services	1750	1762	1799	1809	1821
Total forest	9213	9274	9458	9510	9575

3.3.3 Reclassification into FRA 2010 categories

Reclassification pattern (national classes according to classification after 2006)

National category	FRA 2010 Categories							Total
	Production	Protection of soil and water	Conservation of biodiversity	Social services	Multiple use	Other	No / unknown	
Protection forest	0%	100%	0%	0%	0%	0%	0%	100%
Recreation and aesthetic forest	0%	0%	0%	100%	0%	0%	0%	100%
Forest of nature protection, scientific, historical and cultural purpose	0%	0%	100%	0%	0%	0%	0%	100%
Commercial forest	100%	0%	0%	0%	0%	0%	0%	100%
Total	100%	100%	100%	100%				

3.4 Data for Table T3

Table 3a – Primary designated function

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production	4450	4558	4589	4511
Protection of soil and water	2793	2894	2914	3044
Conservation of biodiversity	269	249	251	350
Social services	1762	1809	1821	1800
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	9274	9510	9575	9705

Table 3b – Special designation and management categories

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Area of permanent forest estate	9274	9510	9575	9705
Forest area within protected areas	n.a	n.a	n.a	n.a
Forest area under sustainable forest management	8678	8296	8697	8900
Forest area with management plan	8678	8296	8697	8900

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 that is designated to be retained as forest and may not be converted to other land use	
Forest area within protected areas		
Forest area under sustainable forest management	According article 48 of Forest Code availability of forest management plan is obligatory condition for forest management, planning and forecasting of forest resources	Forest legislation stipulates that forest management documents are mandatory for forest management. However, currently for about 0.4 million hectares of forests nor the owner neither the permanent users cannot be identified. They are included in the land registry as forest lands; however they are classified as reserve lands, i.e. lands not given to anyone for use. For those forests forest management plans are not available.
Forest area with management plan	According article 47 of Forest Code forest management planning is obligatory for whole Ukraine	

Other general comments to the table

The structure of forest in 2010, was forecasted with taking into consideration of the status of environmental programs on the increase the protected areas. New objects of nature-preservation fund are created in accordance with the decrees of the President.

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 Cadastre for 1988-2002	H	Forest	1988-2002	
Expert assessment	M	Other naturally regenerated forest, Planted forest	All years	

4.2.2 Classification and definitions

National class	Definition
Naturally regenerated forest	Stands established by nature regeneration from seeds

Planted forests	Stands established by planting or sowing
Coppice forest	Stands regenerated naturally from sprouting

4.2.3 Original data

4.3 Analysis and processing of national data

4.3.1 Reclassification into FRA 2010 categories

Area of primary forest is taken as a permanent value corresponding to previous questionnaires. Other naturally regenerated forest - this category is equal to half of forest area minus area of primary forests. Planted forest is assumed to be 50% of the total forest area.

4.4 Data for Table T4

Table 4a

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest	59	59	59	59
Other naturally regenerated forest	4578	4696	4729	4800
...of which of introduced species	n.a.	n.a.	n.a.	n.a.
Planted forest	4637	4755	4787	4846
...of which of introduced species	n.a.	n.a.	n.a.	n.a.
TOTAL	9274	9510	9575	9705

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	As primary the forests without any forest management were reported, mostly because of difficult to access (mainly in Carpathians) owing to poor forest road network in this region.	The area of primary forest has been assumed as unchanged (59 000 ha according to FRA 2000).
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
About forestry activities (statistical bulletin)	H	Volume of afforestation/reforestation/natural regeneration	yearly	

5.2.2 Classification and definitions

National class	Definition
Afforestation	Establishment of forest through planting or sowing on land that, until then, was not classified as forest.
Reforestation	Re-establishment of forest through planting sowing on land classified as forest.
Natural regeneration	Natural regeneration on land classified as forest

5.2.3 Original data

	1988	1989	1990	1991	1992	Total for 5 years	Average annual value
	hectares						
Afforestation	17100	17100	17205	12600	11674	75679	15136
Reforestation	35400	39103	35352	31204	28652	169711	33942
...of which on areas previously planted							
Natural regeneration of forest	2000	2000	2106	2000	2970	11076	2215

	1998	1999	2000	2001	2002	Total for 5 years	Average annual value
	hectares						
Afforestation	4668	5925	5187	4260	5000	25040	5008
Reforestation	30152	29867	29802	34267	37394	161482	32296
...of which on areas previously planted							
Natural regeneration of forest	6665	8715	8004	8315	8460	40159	8032

	2003	2004	2005	2006	2007	Total for 5 years	Average annual value
	hectares						
Afforestation	3787	3643	9500	19000	26670	62600	12520
Reforestation	38353	42596	36355	35008	33381	185693	37139
...of which on areas previously planted							
Natural regeneration of forest	9907	11293	12783	12682	13573	60238	12048

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	15136	5008	12520	n.a.	n.a.	n.a.
Reforestation	33942	32296	37139	n.a.	n.a.	n.a.
...of which on areas previously planted	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Natural expansion of forest	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

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

5.4 Comments to Table T5

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Afforestation		
Reforestation	Additionally to an artificial regeneration, natural regeneration of forest is getting more significance in Ukraine. The area of forest regenerated through those way in 1990 was 2215 ha, in 2000 -8032 ha and in 2005 - 12048 ha	

Natural expansion of forest	There are processes of natural expansions of forest in Ukraine but until today there are no available information about this process	
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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
State Forest Cadastre for 1988-2002	H	Growing stock and Growing stock composition	1988-1996	

6.2.2 Classification and definitions

National class	Definition
Growing stock	Volume over bark of all living trees of forest fund more than 2 cm in diameter at breast height. Includes the stem from ground level.

6.2.3 Original data

National data	Growing stock (million m ³)	
	1988	1996
Forest growing stock	1320	1696

6.3 Analysis and processing of national data

6.3.1 Estimation and forecasting

For Growing stock estimation linear interpolation and extrapolation were applied

Growing stock composition

	Interval (1996-1988)	1988	1996	Difference	Difference per year	Estimation 1990	Estimation 2000	Estimation 2005	Estimation 2010
Pine	8	502	645	143	17,875	538	717	762	806
Oak	8	277	355	78	9,75	297	395	420	443
Spruce	8	164	211	47	5,875	176	235	250	264
Beech	8	149	192	43	5,375	159	214	228	240
Alder	8	54	69	15	1,875	58	76	81	86
Birch	8	53	68	15	1,875	57	75	80	85
Fir	8	30	39	9	1,125	32	43	46	49
Hornbeam	8	25	29	4	0,5	26	31	32	34
Ash	8	20	26	6	0,75	21	29	31	33
Acacia	8	15	22	7	0,875	17	25	27	30
Remaining	8	31	40	9	1,125	33	44	47	49
Total		1320	1696	376	47	1414	1884	2004	2119

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	1414	1884	2004	2119	n.a.	n.a.	n.a.	n.a.
... of which coniferous	748	997	1061	1122	n.a.	n.a.	n.a.	n.a.
... of which broadleaved	666	887	943	997	n.a.	n.a.	n.a.	n.a.
Growing stock of commercial species	1414	1884	2004	2119	n.a.	n.a.	n.a.	n.a.

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

FRA 2010 category / Species name			Growing stock in forest (million cubic meters)		
Rank	Scientific name	Common name	1990	2000	2005
1 st	<i>Pinus</i>	Pine	538	717	762
2 nd	<i>Quercus</i>	Oak	297	395	420
3 rd	<i>Picea</i>	Spruce	176	235	250
4 th	<i>Fagus</i>	Beech	159	214	228
5 th	<i>Alnus</i>	Alder	58	76	81
6 th	<i>Betula</i>	Birch	57	75	80
7 th	<i>Abies</i>	Fir	32	43	46
8 th	<i>Carpinus</i>	Hornbeam	26	31	32
9 th	<i>Fraxinus</i>	Ash	21	29	31
10 th	<i>Robinia</i>	Acacia	17	25	27
Remaining			33	44	47
TOTAL			1414	1884	2004

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)	2	
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	2	
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		
Growing stock of broadleaved / coniferous		
Growing stock of commercial species	According to article 70 of forest Code of Ukraine it is prohibited felling and damaging valuable and rare trees entered in Red Book of Ukraine	
Growing stock composition	In table 6a it is given growing stock in forests available for final felling providing. Following the FRA definitions and Reporting Guidelines total volume of growing stock and growing stock of commercial species in Ukraine are equal. Growing stock of not commercial species (taking in Red book) is about 0,1 mio m3.	

Other general comments to the table

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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
State Forest Cadastre for 1988-2002	H	Growing stock and Growing stock composition	1988-1996	
Lakida P., Nilsson S., Shvidenko A. Estimation of Forest Phytomass for Selected Countries of the Former European USSR /WP - 95 – 79. - Laxenburg, IIASA, 1995. – 33 p.		Biomass expansion factors		

7.2.2 Original data

7.3 Analysis and processing of national data

7.3.1 Calibration

7.3.2 Estimation and forecasting

Calculation of biomass are made according to method given in following publication: Lakida P., Nilsson S., Shvidenko A. Estimation of Forest Phytomass for Selected Countries of the Former European USSR /WP - 95 – 79. - Laxenburg, IIASA, 1995. – 33 p.

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	803	1066	1146	1226	n.a.	n.a.	n.a.	n.a.
Below-ground biomass	194	258	277	296	n.a.	n.a.	n.a.	n.a.
Dead wood	7	9	9	10	n.a.	n.a.	n.a.	n.a.
TOTAL	1004	1333	1432	1532	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	In Ukraine there is not data for reporting according to these categories. Official reporting in Ukraine permit receiving data about above-ground biomass which include data about stem, and merchantable wood from crown.	
Below-ground biomass		
Dead wood		

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

In Ukraine there is not data reporting according to this categories. Official national reporting is only in stage of elaborating

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
State Forest Cadastre for 1988-2002	H	Growing stock and Growing stock composition	1988-1996	
Lakida P., Nilsson S., Shvidenko A. Estimation of Forest Phytomass for Selected Countries of the Former European USSR /WP - 95 – 79. - Laxenburg, IIASA, 1995. – 33 p.		Biomass to carbon recalculation factors, Carbon in soil and humus		

8.2.2 Original data

8.3 Analysis and processing of national data

8.3.1 Calibration

8.3.2 Estimation and forecasting

Lakida P., Nilsson S., Shvidenko A. Estimation of Forest Phytomass for Selected Countries of the Former European USSR /WP - 95 – 79. - Laxenburg, IIASA, 1995. – 33 p.

8.3.3 Reclassification into FRA 2010 categories

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	402	533	573	613	n.a.	n.a.	n.a.	n.a.
Carbon in below-ground biomass	97	129	138.5	148	n.a.	n.a.	n.a.	n.a.
Sub-total: Living biomass	499	662	711.5	761	n.a.	n.a.	n.a.	n.a.
Carbon in dead wood	3.5	4.5	4.8	5.0	n.a.	n.a.	n.a.	n.a.
Carbon in litter	49.1	50.3	50.5	50.6	n.a.	n.a.	n.a.	n.a.
Sub-total: Dead wood and litter	52.6	54.8	55.3	55.6	n.a.	n.a.	n.a.	n.a.
Soil carbon	231.8	237.8	238.6	239.4	n.a.	n.a.	n.a.	n.a.
TOTAL	783.4	954.6	1005.4	1056.0	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
About forestry activities (statistical bulletin)	H	Forest fires	Yearly, since 1988	

9.2.2 Classification and definitions

National class	Definition
Forest fire	Accidental fire distribution within forest lands
Types of forest fires	Ground, crown and peat fires
Ground fire	Fires which are spreaded due ground cover
Crown fire	Fires which are spreaded due crown cover. In this case ground fire is considered as part of crown fire
Peat fire	Fires supported by burning of peat without flame

9.2.3 Original data

	1988	1989	1990	1991	1992	Total for 5 years	Average annual value
	1000 hectares						
Disturbance by fire	0,8	1,3	2,4	1,7	4,3	10,5	2,1
number of fires				2771	5869		

	1998	1999	2000	2001	2002	Total for 5 years	Average annual value
	1000 hectares						
Disturbance by fire	4,7	6,5	1,9	3,8	5	21,9	4,4
number of fires	3915	6070	3696	3116	6383	23180	4636

	2003	2004	2005	2006	2007	Total for 5 years	Average annual value
	1000 hectares						
Disturbance by fire	3	0,6	2,4	4,3	13,8	24,1	4,8
number of fires	4527	1876	4233	3842	6100	20578	4116

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	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
... of which on forest	2.1	n.a.	4.4	4636	4.8	4116
... of which on other wooded land	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
... of which on other land	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table 9b

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

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		
Wildfire / planned fire		

Other general comments to the table
Those forest areas are given, where combating measures are essential.

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
About forestry activities (statistical bulletin)	H		Yearly, since 1988	

10.2.2 Original data

	1988	1989	1990	1991	1992	Total for 5 years	Average annual value
	1000 hectares						
Disturbance by insects	95,2	105,6	37,3	87,9	90,3	416,3	83
Disturbance by diseases	123,4	130,5	127,3	124	121,9	626,9	125
Other disturbance							

	1998	1999	2000	2001	2002	Total for 5 years	Average annual value
1000 hectares							
Disturbance by insects	107,5	92,4	99,3	118,8	226,1	644,1	129
Disturbance by diseases	120,8	124,5	119,2	123,1	108,5	596,1	119
Other disturbance			224,2			224,2	45

	2003	2004	2005	2006	2007	Total for 5 years	Average annual value
1000 hectares							
Disturbance by insects	273,9	183,7	111,2	79,4	90	738,2	148
Disturbance by diseases	111,7	126,6	124,9	118,3	101,7	583,2	117
Disturbance by other biotic agents	0,027	0,087	0,364	0,082	0,055	0,615	0,12
Disturbance caused by abiotic factors	6,6	4,1	6,1	5,2	15,3	37,3	7

10.3 Data for Table T10

Table 10a – Disturbances

FRA 2010 category	Affected forest area (1000 hectares)		
	1990	2000	2005
Disturbance by insects	83	129	148
Disturbance by diseases	125	119	117
Disturbance by other biotic agents	n.a.	n.a.	0.12
Disturbance caused by abiotic factors	n.a.	45	7
Total area affected by disturbances	n.a.	n.a.	272.12

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)
Pine sawfly (<i>Diprion pini</i>)	<i>Pinus sylvestris</i>	2002–2005	133	
European pine sawfly (<i>Neodiprion sertifer</i>)	<i>Pinus sylvestris</i>	1999–2004	101	
Pine beauty moth (<i>Panolis flammea</i>)	<i>Pinus sylvestris</i>	1999	57	
Pine looper moth (<i>Bupalus piniarius</i>)	<i>Pinus sylvestris</i>	2003–2004	1.7	
Pine moth (<i>Dendrolimus pini</i>)	<i>Pinus sylvestris</i>	2004–2006	23	
Processionary moth (<i>Thaumetopoea processionea</i>)	<i>Quercus robur</i>	2003–2004	18	
Gypsy moth (<i>Lymantria dispar</i>)	<i>Quercus robur</i>	2003–2006	24	
Brown-tail moth (<i>Euproctis chrysorrhoea</i>)	<i>Quercus robur</i>	2004	6	
Pea-green oak twist (<i>Tortrix viridana</i>)	<i>Quercus robur</i>	2005–2006	89	
Winter moth (<i>Operophtera brumata</i>)	<i>Quercus robur</i>	1999–2003 2006	43.4	

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)
	n.a.
Total forest area affected by woody invasive species	

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	Those forest areas are given, where combating measures are essential.	
Disturbance by diseases	Those forest areas are given, where combating measures are essential.	
Disturbance by other biotic agents		

Disturbance caused by abiotic factors	The information about other disturbances (windfall, storm damage) is only given for State forest cadastre.	
Major outbreaks		
Invasive species	<p>Invasive species – Red oak (<i>Quercus rubra</i>), Honey locust (<i>Gleditschia triacanthos</i>), Japanese larch (<i>Larix leptolepis</i>), European larch (<i>Larix decidua</i>), Siberian larch (<i>Larix sibirica</i>), Douglas fir (<i>Pseudotsuga taxifolia</i>), Black walnut (<i>Juglans nigra</i>), White walnut (<i>Juglans cinerea</i>), Manchurian walnut (<i>Juglans mandshurica</i>), Weymouth pine (<i>Pinus strobus</i>), Gray pine (<i>Pinus banksiana</i>), Yellow pine (<i>Pinus ponderosa</i>), Engelmann spruce (<i>Picea engelmannii</i> Engelm.), Colorado spruce (<i>Picea pungens</i>), Black locust (<i>Robinia pseudoacacia</i>), Canadian maple (<i>Acer negundo</i>).</p> <p>Majority of these species do not have obvious impact on forest. Black locust can in some places compete with a pine, but quantitatively nobody takes it into account. In other side it is maybe good in case of appearing mixed stand; more resistant to fires, damage insects, root sponge (quantitative information on this is not present).</p> <p>Gray pine can interbreed with a Norway fir (the only one from invasion pine) and it can result in degradation of gene pool.</p> <p>Red oak is, undoubtedly, more resistant to insects, what common oak (<i>Quercus robur</i>), but forestry specialists consider that quality of Red oak wood is worse. Whether to consider its distribution as harmful, is a question, because on the east of Ukraine there is a threat in general decreasing amount of oak in forest stands.</p> <p>Canadian maple can be a weed in the green belt of cities, anymore even in settlements, but in forest it scarcely force main species – quantitative information on it is not present.</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
About forestry activities (statistical bulletin)	H		Yearly, since 1988	

11.2.2 Classification and definitions

National class	Definition
Plywood raw material	The wood for plywood production
Sawlogs	The wood for sawn timber production
Construction timber	
Pulpwood	
Industrial raw material	
Fuel wood	The wood for energy production purposes

11.2.3 Original data

Category	Harvested in Ukraine without bark, thou m3						
	1988	1989	1990	1991	1992	Total for 5 year	Average
Industrial round-wood removals	8535	8552	8670	7070	7120	39947	7989
Woodfuel removals	5013	5131	4941	4242	4020	23347	4669
Total	13548	13683	13611	11312	11140	63294	12659

Category	Harvested in Ukraine without bark, thou m3						
	1998	1999	2000	2001	2002	Total for 5 year	Average
Industrial round-wood removals	6681	6456	7202	7774	8284	36397	7279
Woodfuel removals	3868	3853	4060	4248	4543	20572	4114
Total	10549	10309	11262	12022	12827	56969	11394

Category	Harvested in Ukraine without bark, thou m3						
	2003	2004	2005	2006	2007	Total for 5 year	Average
Industrial roundwood removals	9500	10500	10366	10819	11848	53033	10607
Woodfuel removals	4766	4932	4878	5030	5036	24642	4928
Total	14266	15432	15244	15849	16884	77675	15535

11.3 Analysis and processing of national data

Category	Average for the 5-year period	Coefficient with bark	1990	Removals (95% of harvested amount)
Industrial roundwood removals	7989	1,13	9028	8577
Woodfuel removals	4669	1,13	5276	5013
Total	12659		14304	13590

Category	Average for the 5-year period	Coefficient with bark	2000	Removals (95% of harvested amount)
Industrial roundwood removals	7279	1,13	8226	7814
Woodfuel removals	4114	1,13	4649	4417
Total	11394		12875	12231

Category	Average for the 5-year period	Coefficient with bark	2005	Removals (95% of harvested amount)
Industrial roundwood removals	10607	1,13	11986	11387
Woodfuel removals	4928	1,13	5569	5290
Total	15535		17555	16677

11.4 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.)	8577	7814	11387	5013	4417	5290
... of which from forest	8577	7814	11387	5013	4417	5290
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	Rouble	Hrivna	Hrivna

11.5 Comments to Table T11

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

Other general comments to the table

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
About forestry activities (statistical bulletin)	H		2005	

12.2.2 Original data

Rank	Name of product	Unit	NWFP harvesting 2005
			Quantity
1 st	Berries	t	4949,9
2 nd	Hay	t	4110,2
3 rd	Wood juice	t	2155
4 th	Raw gum	t	1622,1
5 th	New year trees	thou ps	613,6
6 th	Wild fruits	t	81,5
7 th	Mushrooms	t	75,7
8 th	Medical plants	t	35
9 th	Nuts	t	16,1
10 th	Birds	thou ps	1949,3
11 th	Fur-bearing animals	thou ps	343,6
12 th	Hoofed animals	thou ps	6,8

No data are available on value of the removals.

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	Birds	Mallard, partridge	thou ps	1949.3	n.a.	12
2 nd	Fur-bearing animals	Brown hare, fox	thou ps	343.6	n.a.	11
3 rd	Hoofed animals	Roe deer, wild boar	thou ps	6.8	n.a.	12
4 th	Berries	Cranberry, cranberry, raspberry	t	4949.9	n.a.	1
5 th	Hay		t	4110.2	n.a.	2
6 th	Wood juice	Birch juice	t	2155	n.a.	1
7 th	Raw gum	Pine gum	t	1622.1	n.a.	7
8 th	New year trees	Pine, spruce, fir	thou ps	613.6	n.a.	8
9 th	Wild fruits	Brier, thorn	t	81.5	n.a.	3
10 th	Mushrooms	Honey fungus, cepe	t	75.7	n.a.	1
All other plant products					n.a.	
All other animal products					n.a.	
TOTAL					n.a.	

	2005
Name of local currency	Hrivna

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

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
Annual reporting of State Forestry Committee	H	Employment	1990 2000 2005	

13.2.2 Original data

See final reporting table.

13.3 Data for Table T13

FRA 2010 Category	Employment (1000 years FTE)		
	1990	2000	2005
Employment in primary production of goods	62	104.9	98.2
...of which paid employment	62	104.9	98.2
...of which self-employment	n.a.	n.a.	n.a.
Employment in management of protected areas	2	3.2	3.6

Figures for this table, for year 2008 are 83,3, 83,3, n.a., 3,8 respectively.

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
Data is given without employees of small enterprises and self-employees

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 type="checkbox"/>	Yes	
	<input checked="" type="checkbox"/>	No	
If Yes above, provide:	Year of endorsement		
	Reference to document		
National forest programme (nfp)	<input checked="" type="checkbox"/>	Yes	
	<input type="checkbox"/>	No	
If Yes above, provide:	Name of nfp in country	Forest of Ukraine	
	Starting year	2002	
	Current status	<input type="checkbox"/>	In formulation
		<input type="checkbox"/>	In implementation
		<input checked="" type="checkbox"/>	Under revision
Reference to document or web site	http://zakon1.rada.gov.ua		
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	1994	
	Year of latest amendment	2006	
	Reference to document	http://zakon1.rada.gov.ua	

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		Yes
	x	No
If Yes above, indicate the number of regions/states/provinces with forest policy statements		
Sub-national Laws (Acts or Codes) on forest		Yes
	x	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	In Ukraine forest policy exist “de facto” in form of set of forest and environmental laws, norms and normative documents but is not formed “de jure” in one document according to accepted procedure. Keeping in mind ensuring of forest sector development, Cabinet of Ministers of Ukraine (Document No. 208-p of 18.04.2006) approved Conception of Forestry Reforming and Developing.
National forest programme (nfp)	In Ukraine forest management is based on the State Programme, “Forests of Ukraine” for the period 2002-2015 approved by the Cabinet of Ministers (Resolution No.581 of 29.04.02). The State Programme “Forests of Ukraine” defines the guidelines in forest sector development and is based on Land Code, Forest Code, Water Code, the Ukrainian Law "On Environmental Protection", the Ukrainian Law “On National Ukrainian Program of National Ecological Network for 2000-2015” (2000), the Ukrainian Law “On State Programme of Water Management Development” and others. “Forests of Ukraine” was revised / is under revision in 2009.
Law (Act or Code) on forest with national scope	The Forest Code of Ukraine is the main legislative document in Ukrainian forest management. The Verkhovna Rada (the Parliament of Ukraine) adopted the Law of Ukraine No. 3404-IV on Revisions in the Forest Code of Ukraine dated 08.02.2006 which is valid since 31.03.2006. Now process of elaborating complex of by-laws and regulations, which develop main provisions of Forest Code is almost finished. Besides Forest Code there are some other laws of national scope having an effect on forest management activities.
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	State Forestry Committee of Ukraine Head – Mykola Timoshenko	
Level of subordination of Head of Forestry within the Ministry	x	1 st level subordination to Minister
		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		
Institution(s) responsible for forest law enforcement	State Forestry Committee Ministry of Environment protection	

Table 15b – Human resources

FRA 2010 Category	Human resources within public forest institutions					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Total staff	n.a	n.a	n.a	n.a	939	n.a
...of which with university degree or equivalent	n.a	n.a	n.a	n.a	n.a	n.a

Information refers to State Forestry Committee (main state authority in forestry in Ukraine) and its territorial subdivisions

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	State Forestry Committee is the main state authority in forest and hunting management. The main objectives of the State Forestry Committee are: <ul style="list-style-type: none"> – to implement state policies for forest and hunting management, protection and conservation, sustainable forest management, regeneration of forest resources and game, and to improve the efficiency of forest and hunting management; – to administer, regulate and control forest and hunting management; – to develop and implement national, international and regional programmes for forest protection, productivity improvement, sustainable forest management and reforestation, management and regeneration of game animals, development of hunting and forest management planning. 	
Level of subordination of Head of Forestry within the Ministry	State Forestry Committee is an independent entity but its activity is coordinated and directed by the Ministry of Environment protection.	
Other public forest agencies at national level		
Institution(s) responsible for forest law enforcement	According to the Forest Code (2006) <ul style="list-style-type: none"> • State Forestry Committee is carrying out state control for law enforcement in forestry. • Ministry of Environment protection is carrying out state control for law enforcement in nature protection including protection, utilisation and regeneration of forest. 	
Human resources within public forest institutions		

Other general comments to the table

State Forestry Committee is the main state authority for forest and hunting management. State Forestry Committee is carrying out normative function in forest and hunting management for all Ukrainian forests and is also responsible for managing 68% of Ukrainian forests.

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
Annual reporting of State Forestry Committee				

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	n.a.	n.a.	75	25	202	27
Bachelor's degree (BSc) or equivalent	180	18	608	18	477	25
Forest technician certificate / diploma	1097	17	1600	25	2884	17
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)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Master's degree (MSc) or equivalent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bachelor's degree (BSc) or equivalent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes:

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

16.4 Comments to Table T16

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Graduation of students in forest-related education	In column 2008 is given information about graduation in 2007	
Professionals working in publicly funded forest research centres	All information is given for forest enterprises under responsibility of State Forestry Committee (68% of forest)	

Other general comments to the table

Forestry Educations

In accordance with the current Ukrainian legislation training of forest specialists is carried out in Institution of Higher Education (IHE) of I-IIU of levels of accreditation on four educationally qualifying levels - *a junior specialist, bachelor, specialist and master's degree*.

IHE of I-II levels of accreditation are forest colleges in which is carried out education of *junior specialist* or even *bachelor*. Most colleges are carried out training of junior specialist. For bachelors training it is needed license of Ministry of education and science of Ukraine, where a restricted factor is, as a rule, the proper percent of teachers with the PhD degree.

Among forest colleges Bereznivskiy forest college (Rivnenska oblast) had some practice of preparation of bachelors (2-3 classes of graduates), however in the last school year according to a lack of necessary percent of teachers with PhD level this practice was halted.

Thus training junior specialist for forestry in Ukraine is carried out by following forest colleges which are under subordination of State Forestry Committee (DKLG):

1. Shackiy (Volinska oblast);
2. Bereznivskiy (Rivnenska oblast);
3. Storozhineckiy (Chernivecka oblast);
4. Kremeneckiy (Ternopil'ska oblast);
5. Malinskiy (Zhitomir oblast);
6. Lubenskiy (Poltava oblast);
7. Chuguevo-Babchanskiy (Kharkov oblast);
8. Velikoanadol'skiy (Donetsk oblast).

Besides of mentioned above, training of *junior specialist* for forestry is carried out in other colleges and in one institute, which are under subordination of other ministries and departments:

1. Prikarpat'skiy forest college (Bolekhiv town, Ivano-Frankivsk oblast, under subordination of local administration);
2. Vinnitca transport college (Vinnitca town, under subordination of the Ministry of transport of Ukraine);
3. Boyarskiy college of ecology and natural resources (Kiev oblast, in the structure of the National agrarian University (NAU) under subordination of Cabinet of Ministers of Ukraine);
4. Berezhanskiy agrotechnical institute (Ternopil'ska oblast, in the structure of NAU);
5. Gorodischenskiy agrarian college (Cherkaska oblast, Ministry of agrarian policy of Ukraine);
6. Zakarpatskiy forest college (Zakarpatska oblast, under subordination of the National forest engineering university of Ukraine under subordination of Ministry of education and science);
7. Lvov technological college (Lvov, under subordination of the National forest engineering university of Ukraine).

IHE of III level of accreditation are institutes, which can carry out training of *junior specialist, bachelor, specialist*, and to provide scientific research. Among institutes which carry out training of *bachelor* is known only one – Nadsluchanskiy institute (private ownership, Berezne, Rivnenska oblast).

IHE of IV level of accreditation are universities which can train *junior specialist, bachelor, specialist, master's degree*, and to provide scientific research. Long time only 2 universities trained specialist, master's – National forest engineering university (Lvov) and National agrarian University (Kyiv).

FOREST RESEARCH

Forest research is carried out by a number of scientific institutions: Ukrainian Research Institute of Forestry and Forest Melioration named after G.M.Vysotskiy (URIF&FM), which is the leading forestry research center in Ukraine, and Ukrainian Mountain Forestry Research Institute named after P.S.Pasternak (UMFRI), which is a research center in mountain forest management.

URIF&FM (Kharkiv) has Steppe (Kherson) and Polissya (Zhytomyr) division, 7 forest research stations (in Vinnytsa, Kyiv, Krasnotroystatets, Crimea, Lugansk, Mariupol, Novgorod-Siverskiy). URIF&FM publishes collected research works “Silviculture and Forest Melioration” in three disciplines (agriculture, biology and economy).

UMFRI (Ivano-Frankivsk) performs the research in Carpathian Region (Ivano-Frankivsk, Transcarpathia, Lviv and Chernovtsy region). The institute has a research and experimental base that embraces Carpathian forest research station (Mukacheve), Ternopil control station and hydro-stations.

Research network of URIF&FM and UMFRI covers all natural zones and unique forest research places, some of which were created over 150 years ago. Nowadays the network is well-balanced according to the Ukrainian natural and economic zones, research themes. Therefore it is enabled to provide the high level research.

In 2004 by the joint decision of the National Academy of Science and the State Forestry Committee URIF&FM and UMFRI got the status of dual subordination to the National Academy of Science (in research and methodology) and to the State Forestry Committee (in financial and economic activities and in research and methodology).

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
Official reporting data	H			

17.2.2 Classification and definitions

National class	Definition
Taxes paid to state budget	<ul style="list-style-type: none"> • corporate profits tax • VAT • Payment for special use of forest resources
Taxes paid to local budget	<ul style="list-style-type: none"> • Incom tax • Other local taxes
Payment to social funds	<ul style="list-style-type: none"> • Payment to pension fund • Social insurance

17.2.3 Original data

FRA 2010 Categories	Revenues (1000 local currency)	
	2000	2005
Forest enterprises revenue (realisation of products and services)	744400	1991100
All taxes and charges in forestry (state budget)	112430,8	212125,5
All taxes and charges in forestry (local budget)	n.a.	n.a.

17.3 Data for Table T17

Table 17a - Forest revenues

FRA 2010 Categories	Revenues (1000 local currency)	
	2000	2005
Forest revenue	744400	1991100

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

FRA 2010 Categories	Domestic funding (1000 local currency)		External funding (1000 local currency)		Total (1000 local currency)	
	2000	2005	2000	2005	2000	2005
Operational expenditure	619380	1700655.7	n.a.	39270	n.a.	1739925.7
Transfer payments	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total public expenditure	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
If transfer payments are made for forest management and conservation, indicate for what specific objective(s) - Please tick all that apply.	<input type="checkbox"/>	Reforestation				
	<input type="checkbox"/>	Afforestation				
	<input type="checkbox"/>	Forest inventory and/or planning				
	<input type="checkbox"/>	Conservation of forest biodiversity				
	<input type="checkbox"/>	Protection of soil and water				
	<input type="checkbox"/>	Forest stand improvement				
	<input type="checkbox"/>	Establishment or maintenance of protected areas				
	<input type="checkbox"/>	Other, specify below				

17.4 Comments to Table T17

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest revenue		
Operational expenditure	External funding is given for year 2006	Increasing of domestic funding could be explained by increasing support from state budget and increasing volumes and prices in domestic/export markets
Transfer payments		

Other general comments to the table