Forestry Department
Food and Agriculture Organization of the United Nations

GLOBAL FOREST RESOURCES ASSESSMENT 2010

COUNTRY REPORT

KAZAKHSTAN

FRA2010/106
Rome, 2010

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).

The Global Forest Resources Assessment process is coordinated by the Forestry Department at FAO headquarters in Rome. The contact person for matters related to FRA 2010 is:

Mette Løyche Wilkie
Senior Forestry Officer
FAO Forestry Department
Viale delle Terme di Caracalla
Rome 00153, Italy

E-mail: Mette.LoycheWilkie@fao.org

Readers can also use the following e-mail address: fra@fao.org

Contents

INTRODUCTION **5**
1 TABLE T1 – EXTENT OF FOREST AND OTHER WOODED LAND **6**
2 TABLE T2 – FOREST OWNERSHIP AND MANAGEMENT RIGHTS **10**
3 TABLE T3 – FOREST DESIGNATION AND MANAGEMENT **13**
4 TABLE T4 – FOREST CHARACTERISTICS **16**
5 TABLE T5 – FOREST ESTABLISHMENT AND REFORESTATION **18**
6 TABLE T6 – GROWING STOCK **20**
7 TABLE T7 – BIOMASS STOCK **22**
8 TABLE T8 – CARBON STOCK **25**
9 TABLE T9 – FOREST FIRES **27**
10 TABLE T10 – OTHER DISTURBANCES AFFECTING FOREST HEALTH AND VITALITY **29**
11 TABLE T11 – WOOD REMOVALS AND VALUE OF REMOVALS **31**
12 TABLE T12 – NON-WOOD FOREST PRODUCTS REMOVALS AND VALUE OF REMOVALS **33**
13 TABLE T13 – EMPLOYMENT **34**
14 TABLE T14 – POLICY AND LEGAL FRAMEWORK **36**
15 TABLE T15 – INSTITUTIONAL FRAMEWORK **38**
16 TABLE T16 – EDUCATION AND RESEARCH **40**
17 TABLE T17 – PUBLIC REVENUE COLLECTION AND EXPENDITURE **42**

Report preparation and contact persons

No report has been received from Kazakhstan.

This report is the result of a desk study prepared by the FRA secretariat in Rome and Geneva. It is based on the existing available information and uses the established format for FRA 2010 country reports.

Introduction

Kazakhstan is a large country with limited forest resources relative to its overall land area. Forests areas account for a mere 4% of Kazakhstan's territory. However, the 11.5 million hectares of forest (according to national definition) cover still make Kazakhstan the third largest forest country in the ECA region, after Russia and Turkey. In the traditional measure of forest abundance - total growing stock of timber - Kazakhstan with its 383.7 million m3 of standing timber ranks low compared to other ECA. Its limited forest production is partly a result of low temperatures and low precipitation.

At the same time, Kazakhstan is a nation that considers its forest important. Both forests and population have average low densities and are distributed unevenly over the country's territory. On a per capita basis, Kazakhstan has almost as much forest land (0.77 ha/person) as the 'forest-rich' United States or Malaysia and is significantly ahead of most ECA countries (except Russia, Belarus and the Baltics). The main concentrations of forests and people in Kazakhstan are in the fertile forest-steppe zone extending from Russia along the northern border, at the foothills and slopes of the Altay, Alatau and Tien Shan mountains along the eastern and southeastern borders, and along the Syr-Darya and other main rivers in the southern deserts. Hence, a majority of the nation lives in or near woodlands and uses them for food and fodder, productive soil, shelter and construction materials, fuel, gainful employment, recreation, etc. About 300,000 people are directly dependent on the sector, while an estimated 2.5 million live in or rely on the forests for fuel wood, fodder and other forest products, and an even larger number uses forests for shelter and construction materials, recreation, wind and soil control agricultural land productivity (shelterbelts). These functions justify public management for protection and reforestation of forests in Kazakhstan. Kazakhstan is a middle-income country which recognizes the multi-use functions of its forests.

Because of the diversity of forest types, Kazakhstan can be regarded not as one forest nation, but as four distinct forest domains that are separated in the geographical sense by the vast treeless space of central and western deserts and semideserts. They are: the Altay Mountains (home to unique Siberian biodiversity and also a concentration of 75% of commercial-grade spruce and fir timber in Kazakhstan), the northern forest-steppe (with birch, aspen and pine forest islands including the relic Irtysh pine belts fragmented amidst farmland – an important source of local construction material and fuelwood, as well as a key habitat for wildlife and area for recreation), the Tien-Shan and Ile-Alatau Mountains (a globally unique habitat in terms of agrobiodiversity, wild nut and fruit production, a critical water source for the Aral Sea and Lake Balkhash, and an internationally important tourist destination), and the saxaul scrub forest of the southern desert (a source of high-quality fuelwood and a critical habitat for livestock grazing and sand dune control near the Aral seabed). In addition, there are riparian forests along major rivers. They play an important water-regulating role in the southern floodplains (tugay forest) and constitute almost the only type of forest in the oil-rich but treeless Western Kazakhstan.

Additional information sources, to those applied for FRA2005, used for the study:

Forest Management in Kazakhstan (Лесное хозяйство Казахстана), Kashkinbaeva N., Agency on Statistics of Kazakhstan. National information provided for Workshop on Forest Products Statistics for CIS-region National Statistical Correspondents, Moscow, Russian Federation, 16 - 19 February 2009
- (quoted in the report as "Forest Management in Kazakhstan 2009")

Khaidarov K., Arkhipov V.: Forest Fire Situation in Kazakhstan (International Forest Fire News No. 24 - April 2001, p. 60-67)

Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium (Сельское, лесное и рыбное хозяйство Казахстана 2005-2007 гг. Статистический сборник)
- (quoted in the report as "Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium")

Kazakhstan -Forest Protection and Reforestation Project. Initial Project Information Document. World Bank, 2003
- (quoted in the report as "Kazakhstan -Forest Protection and Reforestation Project 2003")

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 *in situ*. 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 *in situ*; 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
State Forest Fund Account, 1993	H	Area of forest and other land uses	1990	
State Forest Fund Account, 2003	H	Area of forest and other land uses	2000	Data for 2005 and 2010 is forecasted
Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium		Area of forest and other land uses	2005-2008	Information used for comments
FAOSTAT database	H	Total area, total land area, total area of inland water bodies	Applicable to 1990, 2000, 2005 and 2010	

1.2.2 Original data

After reclassification and applying the FAOSTAT data, the national data are as follows:

FRA 2010 Categories	Area (1000 hectares)	
	1993	**2003**
Forest	3405.3	3348.2
Other wooded land	13563.7	15279.3
Other land	253001	251342.5
...of which with tree cover [a)]	4.8	3.5
Inland water bodies	2520	2520
TOTAL	**272490**	**272490**

Source: State forest account, 1993, 2003

Available national information on forested area dynamics in the latest period is reported according to the classification system that is not compatible with the one that had been applied for FRA2005 reporting. Data in the table below was not use for FRA reporting purposes and it is presented for illustration of trends

National Category	2000	2005	2006	2007	2008
Total area of forest fund (including forest transferred into temporal use), mln. ha Общая площадь лесного фонда (включая леса, переданные во временное пользование), млн. га	26,5	26,5	26,5	26,8	27,8
Lands covered with forest, mln. ha Земли, покрытые лесом, млн. га	11,4	12,4	12,3	12,3	12,3

Source: Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium

1.3 Analysis and processing of national data

1.3.1 Calibration

FAOSTAT data were used for the country area, total land area and the total area of inland water bodies.

1.3.2 Estimation and forecasting

The calibrated national data for 1993 and 2003 were used for making estimations and forecasting to the three reporting years. The 1998 data were not used as it presented discrepancies due to internal reclassification of areas within the State Forest Fund. The result of the estimation and forecasting is presented in the table below:

	Area (1000 hectares)					
FRA 2005 Categories	***1993***	***2003***	**1990**	**2000**	**2005**	**2010**
Forest	*3 405*	*3 348*	3 422	3 365	3 337	3 309
Other wooded land	*13 564*	*15 279*	13 049	14 765	15 622	16 479
Other land	*253 001*	*251 343*	253 499	251 840	251 011	250 182
...of which with tree cover	*4.8*	*3.5*	5.2	3.9	3.2	2.5
Inland water bodies	*2 520*	*2 520*	2 520	2 520	2 520	2 520
TOTAL	***272 490***	***272 490***	**272 490**	**272 490**	**272 490**	**272 490**

1.3.3 Reclassification into FRA 2010 categories

The following reclassification has been done:

FRA class	National class
Forest	Areas covered by closed forest. Does not include areas with Saxaul (*Haloxylon* spp.) trees/stands (thickets), and bushes/brushwood
Other wooded land	Includes: Bushes, Saxaul (*Haloxylon* spp.) trees/stands (thickets), open (not closed) planted forests, nurseries, and open forest lands
Other land with tree cover	Orchards and gardens

1.4 Data for Table T1

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	3422	3365	3337	3309
Other wooded land	13049	14765	15622	16479
Other land	253499	251840	251011	250182
...of which with tree cover	5.2	3.9	3.2	2.5
Inland water bodies	2520	2520	2520	2520
TOTAL	272490	272490	272490	272490

1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest	Because of lack of detailed classification system reclassification of the recent national figures to the FRA format was not possible. Values reported in *Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical compendium* indicate a trend of forested areas in Kazakhstan only. Data for 2005 and 2010 was generated by extrapolation of data reported for FRA2000.	
Other wooded land	The estimated areas of "Other wooded land" are derived from the national classification within the State Forest Fund and include also areas that would qualify as "Forest" according to the FRA 2010 definitions.	
Other land		
Other land with tree cover		
Inland water bodies		

Other general comments to the table

Expected year for completion of ongoing/planned <u>national</u> 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 *(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
State Forest Fund Account, 1993	H	All available and related	1990	
State Forest Fund Account, 1998	H	All available and related	2000	The data concerning 2000 are forecasts
State Forest Fund Account, 2003	H	All available and related	2005	The data concerning 2005 and 2010 are forecasts

2.2.2 Original data

All forests and OWL in Kazakhstan are publicly owned.

2.3 Analysis and processing of national data

2.3.1 Estimation and forecasting

Already applied for deriving the data for T1, the latter being the basis for T2. Therefore, there was no need for apply estimation and forecasting for T2.

2.4 Data for Table T2

Table 2a - Forest ownership

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public ownership	3422	3365	3337
Private ownership	0	0	0
...of which owned by individuals	0	0	0
...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	**3422**	**3365**	**3337**

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?		Yes
		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	n.a.	n.a.	n.a.
Individuals	n.a.	n.a.	n.a.
Private corporations and institutions	n.a.	n.a.	n.a.
Communities	n.a.	n.a.	n.a.
Other	n.a.	n.a.	n.a.
TOTAL	n.a.	n.a.	n.a.

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
State Forest Fund Account, 1993	H	All available and related	1990	
State Forest Fund Account, 1998	H	All available and related	2000	The data concerning 2000 are forecasts
State Forest Fund Account, 2003	H	All available and related	2005	The data concerning 2005 and 2010 are forecasts
Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium		Area of forest and other land uses	2005-2008	Information used for comments

3.2.2 Original data

Data on area of forest area were taken from table T1.

3.3 Analysis and processing of national data

3.3.1 Estimation and forecasting

Data on areas with primary designated function for years 1990, 2000 and 2005 was derived from national reporting for FRA 2005. Data for 2010 was calculated with the use of information of total forest area from Table T1, values for categories *Conservation of biodiversity* and *Social services* were assumed at the same level as in 2005, are of forest designated for *Multiple use* was calculated as difference between above mentioned categories.

3.3.2 Reclassification into FRA 2010 categories

The following reclassification has been done:

FRA class	National class
Conservation of biodiversity	State forest natural monuments; Forests of the state nature reserves; Forests of the state nature wilderness areas
Social services	Forests of the state national parks; Forests of the state nature parks; Green zones of the settlements and habitat areas, and medical-prophylactic institutions
Multiple purpose	All other categories (see the above notes)

3.4 Data for Table T3

Table 3a – Primary designated function

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production	0	0	0	0
Protection of soil and water	0	0	0	0
Conservation of biodiversity	31	33	530	530
Social services	251	218	428	428
Multiple use	3140	3114	2379	2351
Other (please specify in comments below the table)	0	0	0	0
No / unknown	0	0	0	0
TOTAL	**3422**	**3365**	**3337**	**3309**

Table 3b – Special designation and management categories

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Area of permanent forest estate	n.a.	n.a.	n.a.	n.a.
Forest area within protected areas	n.a.	n.a.	n.a.	n.a.
Forest area under sustainable forest management	n.a.	n.a.	n.a.	n.a.
Forest area with management plan	n.a.	n.a.	n.a.	n.a.

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		
Forest area with management plan	Total area of forest with management plan is not available; however the latest national statistics indicate intensive work on forest management planning. Area of forest covered with forest management planning was 1127, 352, 452 and 967 thousand hectares in 2005, 2006, 2007 and 2008 respectively.	

Other general comments to the table

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 outside 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 Fund Account, 1993	H	All available and related	1990	
State Forest Fund Account, 1998	H	All available and related	2000	The data concerning 2000 are forecasts
State Forest Fund Account, 2003	H	All available and related	2005	The data concerning 2005 and 2010 are forecasts

4.2.2 Reclassification into FRA 2010 categories

Reclassification scheme applied for national reporting for FRA2005 was used for this table. Data for 2010 was calculated with the use of information of total forest area from Table T1 and shares of the categories reported for 2005.

FRA 2005 Categories	National class
Planted forest	Open planted forests (non-closed plantations)

4.3 Data for Table T4

Table 4a

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest	0	0	0	0
Other naturally regenerated forest	2388	2309	2428	2408
...of which of introduced species	n.a.	n.a.	n.a.	n.a.
Planted forest	1034	1056	909	901
...of which of introduced species	n.a.	n.a.	n.a.	n.a.
TOTAL	**3422**	**3365**	**3337**	**3309**

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

4.4 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
Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium		Afforestation Reforestation	2005-2008	
Forest Management in Kazakhstan 2009		Afforestation Reforestation	2000	

5.2.2 Classification and definitions

National class	Definition
Afforestation	Planting and sowing of forest (Посадка и посев леса)
Introduction of woody plants formations	Establishing of forest shelter belts, plantations on unsuitable lands and protective plantations on grazing lands (Создание полезащитных лесных полос, насаждений на неудобных землях и защитных насаждений на пастбищных землях)
Reforestation	Regeneration of forest (artificial) (Лесовосстановление)

5.2.3 Original data

	2000	2005	2006	2007	2008	**Average 2005-2007**
Afforestation	**4,0**	10,4	16,7	8,1	10,6	**18.00**
Introduction of woody plants formations	**0,3**	0,4	0,5	0,5	0,4	**11.73**
Reforestation	**10,4**	13,4	21,7	18,9	18,4	**0.47**

5.3 Analysis and processing of national data

5.3.1 Reclassification into FRA 2010 categories

	National categories		
FRA 2010 categories	Afforestation	Introduction of woody plants formations	Reforestation
Afforestation	100%	100%	0%
Reforestation	0%	0%	100%
...of which on areas previously planted	n.a.	n.a.	n.a.
Natural expansion of forest	n.a.	n.a.	n.a.

5.4 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	n.a.	10400	18000	n.a.	n.a.	n.a.
Reforestation	n.a.	4300	12200	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 2000 refer to data from this year, for the reporting year 2005 refer to the average for the 3-year periods 2005-2007.

5.5 Comments to Table T5

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Afforestation	Due to the lack of a more specific data reported values encompass areas classified as forest and other wooded land according to the FRA classification.	
Reforestation	Due to the lack of a more specific data reported values encompass areas classified as forest and other wooded land according to the FRA classification.	
Natural expansion of forest		

Other general comments to the table
The figures for the reporting years 2000 refer to data from this year, for the reporting year 2005 refer to the average for the 3-year periods 2005-2007.

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
FRA2005 reporting		Growing stock	1990 2000	
Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium		Growing stock	2005, 2010	

6.2.2 Original data

	2000	2005	2006	2007	2008
The total stock of timber on the stump, mln. m^3 (Общий запас древесины на корню, млн. куб. м)	375,3	375,8	375,8	375,8	375,8

6.3 Analysis and processing of national data

6.3.1 Estimation and forecasting

FRA2005 data was used for estimation of volume of growing stock for 1990, and for evaluation of relation between volume of GS of forest and other wooded land for all reporting years. Recent national data was applied for evaluation of the total growing stock.

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	365.61	363.46	363.95	363.95	10.68	11.88	11.90	11.90
... of which coniferous	242.45	238.81	239.13	239.13	n.a.	n.a.	n.a.	n.a.
... of which broadleaved	123.16	124.65	124.82	124.82	n.a.	n.a.	n.a.	n.a.
Growing stock of commercial species	0	0	0	0	0	0	0	0

*Growing stock of *Haloxylon* spp. thickets and willow brush-woods

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**
1st	*Pinus spp.*	Pine	110.93	104.10	104.10
2nd	*Betula spp.*	Birch	81.40	81.32	81.32
3rd	*Abies spp.*	Fir	57.50	59.23	59.23
4th	*Picea spp*	Spruce	31.55	34.16	34.16
5th	*Larix spp.*	Larch	30.47	30.16	30.16
6th	*Populus tremula*	Aspen	26.21	28.96	28.96
7th	*Populus spp*	Poplar	9.10	9.06	9.06
8th	*Pinus siberica*	Cedar	8.46	9.02	9.02
9th	*Salix spp.*	Willow	4.40	4.39	4.39
10th	*Ulmus spp.*	Elm	2.05	2.09	2.09
Remaining			3.54	2.46	2.46
TOTAL			**365.61**	**363.95**	**363.95**

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)	8	
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	3	
Minimum diameter (cm) of branches included in growing stock (W)	n.a.	
Volume refers to "above ground" (AG) or "above stump" (AS)	AG / AS	

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	Volume of growing stock of coniferous species was calculated on the basis of information on species composition (table 6b). Next to volumes of coniferous genera (Pine, Fir, Spruce, Larch, Cedar) volume of remaining species was included into this group. Volume of broadleaves was calculated as difference between the total growing stock and volume of coniferous trees.	
Growing stock of commercial species		
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
FRA2005 reporting		Growing stock	1990, 2000	Growing stock to biomass recalculation procedure for all reporting years.
Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium		Growing stock	2005, 2010	

7.2.2 Classification and definitions

The FRA 2010classification, categories and definitions were applied for the compilation of this table.

7.2.3 Original data

Please see Table T6

7.3 Analysis and processing of national data

7.3.1 Estimation and forecasting

For the calculation of stem biomass, above/below ground biomass FRA 2010 factors and ratios were used. The table below refer to year 1990.

Tree Species	Growing Stock (million m3)	Basic density (tons/m3)	Stem biomass (mln. tons)	BEF	AG biomass (mln. tons)	Root/ Shoot Ratio	BG biomass (mln. tons)
Pinus spp.	110.93	0.42	46.59	1.3	60.57	0.32	19.38
Betula spp.	81.40	0.51	41.51	1.4	58.11	0.26	15.11
Abies spp.	57.50	0.40	23.00	1.3	29.90	0.32	9.57
Picea spp	31.55	0.40	12.62	1.3	16.41	0.32	5.25
Larix spp.	30.47	0.46	14.02	1.3	18.23	0.32	5.83
Populus tremula	26.21	0.35	9.17	1.4	12.84	0.26	3.34
Populus spp	9.10	0.35	3.19	1.4	4.47	0.26	1.16
Pinus siberica	8.46	0.42	3.55	1.3	4.62	0.32	1.48
Salix spp.	4.40	0.45	1.98	1.4	2.77	0.26	0.72
Ulmus spp.	2.05	0.55[1]/	1.13	1.4	1.58	0.26	0.41
Remainder of species	3.54	0.50[2]/	1.77	1.35[3]/	2.39	0.29[4]/	0.69
TOTAL for 1990	**365.61**		**158.53**		**211.89**		**62.94**

Notes: /1. data source: http://www.sykestimber.co.uk/hardwoodspec.htm
/2. a rounded number of 0.50 was chosen due to a lack of further information
/3. a median of 1.35 was chosen (between 1.30 and 1.40)
/4. a median of 0.29 was chosen (between 0.26 and 0.32)

As there has not been any significant change in the wood volume composition by species groups from 1990 to 2005, it was possible to calculate the volumes of above ground biomass, below ground biomass for 2000, 2005 and 2010 using weighted conversion factors in accordance with the FRA 2005 Guidelines:

Calculation of weighted conversion factors based on the 1990 data:
WCF agb = 211.89/365.61 = 0.579552
WCF bgb = 62.94/365.61 = 0.172151

Estimation for 2000:
AGB = 363.46*0.579552 = **210.64**
BGB = 363.46*0.172151= **62.57**

Estimation for 2005:
AGB = 363.95*0.579552 = **210.93**
BGB = 363.95*0.172151= **62.65**

Estimation for 2010:
AGB = 363.65*0.579552 = **210.93**
BGB = 363.65*0.172151= **62.65**

The same coefficients were applied for the estimation of biomass of the OWL on the basis of information in T6 (total volume of wood for OWL for 1990, 2000, 2005 and 2010).

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	211.89	210.64	210.93	210.93	6.19	6.89	6.89	6.89
Below-ground biomass	62.94	62.57	62.65	62.65	1.84	2.05	2.05	2.05
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		

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
FRA2005 reporting		Growing stock	1990 2000	
Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium		Growing stock	2005, 2010	

8.2.2 Classification and definitions

The FRA 2010 classification, categories and definitions were applied for the compilation of this table

8.2.3 Original data

Please see table T6 and T7

8.3 Analysis and processing of national data

8.3.1 Estimation and forecasting

The calculation of carbon stock (for the above-ground biomass, below-ground biomass and deadwood) was carried out by multiplying respective biomass data (see T7) by the standard value defined by IPCC-GPG for the calculation of carbon content in wood biomass (50%).

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	105.95	105.32	105.46	105.46	3.1	3.45	3.45	3.45
Carbon in below-ground biomass	31.47	31.29	31.33	31.33	0.92	1.03	1.02	1.02
Sub-total: Living biomass	***137.42***	***136.61***	***136.79***	***136.79***	***4.02***	***4.48***	***4.47***	***4.47***
Carbon in dead wood	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Carbon in litter	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sub-total: Dead wood and litter	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Soil carbon	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
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	n.a.

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	Kazakhstan reported on carbon sequestered in deadwood for FRA2005, basing on default IPPC values. This reporting does not meet criteria of FRA2010, thus FRA2005 values were deleted.	
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
Khaidarov K., Arkhipov V.: Forest Fire Situation in Kazakhstan (International Forest Fire News No. 24 - April 2001, p. 60-67)		Area affected by fire, Number of fires	1990 2000	
Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium		Area affected by fire, Number of fires	2005	

9.3 Analysis and processing of national data

9.3.1 Estimation and forecasting

Year	1988	1989	1990	1991	1992	**Average for 1988-1992**
Number of fires	641	917	605	1194	518	**775**
Area burned (ha)	1112	4891	1277	4942	1175	**2679**
Area burned (1000 ha)	1.11	4.89	1.28	4.94	1.18	**2.68**

Year	1997	1998	1999	2000	**Average for 1997-2000**
Number of fires	2257	1053	948	943	**1300**
Area burned (ha)	216950	16322	20691	12930	**66723.25**
Area burned (1000 ha)	217.0	16.32	20.7	12.93	**66.72**

Year	2005	2006	2007	**Average for 2005-2007**
Number of fires	760	959	505	**741**
Area burned (ha)	14551	21900	67398	**34616.33**
Area burned (1000 ha)	14.55	21.90	67.40	**34.62**

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	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
... of which on forest	2.68	775	66.72	1300.	34.6	741
... 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	n.a.	n.a.	n.a.
Planned fire	n.a.	n.a.	n.a.

Note: The figures for the reporting years 1990 the average refers to the 5-year period 1988-1992, for the reporting year 2000 the average refers to the 4-year periods 1997-2000, refer to data from those years, and for the reporting year 2005 the average refers to for the 3-year periods 2005-2007.

9.5 Comments to Table T9

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Area affected by fire	Reported values refer to areas defined as a forest according to national definition. Important part of this category was reclassified as OWL according to the FRA definition, thus it is very likely that information on forest fires encompasses OWL as well.	
Number of fires		
Wildfire / planned fire		

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
Kazakhstan -Forest Protection and Reforestation Project 2003				Information used for comments
Agriculture, forestry and fisheries in Kazakhstan 2005-2007. Statistical Compendium				Information used for comments

10.3 Data for Table T10

Table 10a – Disturbances

FRA 2010 category	Affected forest area (1000 hectares)		
	1990	2000	2005
Disturbance by insects	n.a.	n.a.	n.a.
Disturbance by diseases	n.a.	n.a.	n.a.
Disturbance by other biotic agents	n.a.	n.a.	n.a.
Disturbance caused by abiotic factors	n.a.	n.a.	n.a.
Total area affected by disturbances	n.a.	n.a.	n.a.

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)
n.a.	n.a.	n.a.	n.a.	n.a.

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.	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		
Disturbance by diseases		
Disturbance by other biotic agents		
Disturbance caused by abiotic factors		
Major outbreaks		
Invasive species		

Other general comments to the table
The generally dry extra-continental climate of Kazakhstan makes the existing forest ecosystems particularly susceptible to various threats, including: - desertification - fires (natural and anthropogenic, including agricultural fires) - pest infestations that often follow fires - overgrazing - over-harvesting through illegal and 'sanitary' cutting, and through increased subsistence cutting for fuelwood - habitat degradation from excessive hunting/tourism development The importance of each of these threats varies by region, Data on areas affected by disturbances listed above was not available however the area of sanitary cutting carried out in Kazakhstan is a good indicator of severity of forest health problems. For example area of sanitary cuttings in 2005 amounted to 31,5 thousand hectares which stands for app.79% of total area of cuttings made that year.

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
Narodnoe khozyajstvo SSSR. Statisticheskij sbornik (Russian) Gosudarstvennyj Komitet SSSR po Statistike, Moscow.	H	Industrial roundwood and woodfuel removals	1990	Official statistics (former USSR)
FAOSTAT & UNECE Timber databases	M	Industrial roundwood and woodfuel removals	2000, 2005	

11.2.2 Original data

Year	Industrial roundwood	Woodfuel
	m3 u.b.	m3 o.b.
1990	1 760 00	577 000

Source: Statistics USSR.

Year	Industrial roundwood	Woodfuel
	m3 u.b.	m3 u.b.
1999	185 500	267 800
2000	171 800	473 600
2001	155 100	590 800
2002	145 800	347 400
2003	129 900	170 900
2004	271 000	202 000
2005	642 000	210 000
2006	642 000	210 000
2007	642 000	210 000

Source: FAOSTAT

11.3 Analysis and processing of national data

Original figures were recalculated when needed into FRA 2010 category by using ratio 1.15 to convert from under bark volume to over bark volume. For 2000 the average 1999-2002 was used and for 2005 the average 2003-2007.

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.)	2024	189	535	577	483	231
... of which from forest	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
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 1999 refer to 1990, while 2000 and 2005 refer to the averages for the 5-year periods 1998-2002 and 2003-2007 respectively.

	1990	2000	2005
Name of local currency			

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

No information is available for this reporting 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 wage or salary in cash or in kind.
Self-employment	Persons who during a specified reference period performed some work for profit or family gain in cash or in kind (e.g. employers, own-account workers, members of producers' cooperatives, contributing family workers).

13.2 National data

13.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
ILO. 2003. *Employment trends and prospects in the European forest sector*. By Peter Blombäck, Peter Poschen, Mattias Lövgren. Discussion paper ECE/TIM/DP/29, Geneva, Switzerland. Available at: http://www.unece.org/timber/docs/dp/dp-29.pdf	H	Employment in forestry, logging and related services	1990, 2000	Statistics collected through the questionnaire officially submitted to ILO
Kazakhstan nfp update 2009 (unpublished)	H	Employment in management of protected areas	2008	

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	13.5	13.5	13.5
...of which paid employment	n.a.	n.a.	n.a.
...of which self-employment	n.a.	n.a.	n.a.
Employment in management of protected areas	n.a.	n.a.	2.7

Note: for the year 2005 figure of 2000 is repeated; employment figure for management of protected areas is for year 2008

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		X	Yes
			No
If Yes above, provide:	Year of endorsement		
	Reference to document	- Kazakh Forests Programme for 2004–2006	
National forest programme (nfp)		X	Yes
			No
If Yes above, provide:	Name of nfp in country	"Kazakh Forests Programme" or "Programme Kazakhstan Forests" for 2004–2006 ?	
	Starting year	2004	
	Current status		In formulation
			In implementation
			Under revision
			Process temporarily suspended
	Reference to document or web site		
Law (Act or Code) on forest with national scope		X	Yes, specific forest law exists
			Yes, but rules on forests are incorporated in other (broader) legislation
			No, forest issues are not regulated by national legislation
If Yes above, provide:	Year of enactment	2003	
	Year of latest amendment	2008	
	Reference to document	Forest Code (No.477-II of 2003)	

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	*Forestry might be also addressed in:* - Concept of transition to Sustainable Development for the period 2007–2024 (2006) - Programme for combating desertification for 2005-2015 (2005) - Concept of ecological safety for 2004–2015 (2003) - National Strategy and Action Plan on Conservation and Sustainable Use of Biodiversity in 1999
National forest programme (nfp)	
Law (Act or Code) on forest with national scope	
Sub-national forest policy statements	
Sub-national Laws (Acts or Codes) on forest	

Other general comments to the table
Sources: - Environmental Performance Review 2008 (www.unece.org/env/epr/epr_studies/kazakhstan II.pdf) - NFP-update 2004 (www.fao.org/forestry/media/14331/0/161/) - NFP-update 2009 (unpublished) - FAOLEX (http://faolex.fao.org/faolex/)

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	Ministry of Agriculture (Committee on Forestry and Hunting)	
Level of subordination of Head of Forestry within the Ministry	X	1st level subordination to Minister
		2nd level subordination to Minister
		3rd level subordination to Minister
		4th or lower level subordination to Minister
Other public forest agencies at national level		
Institution(s) responsible for forest law enforcement	Ministry of Agriculture (Committee on Forestry and Hunting)	

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	n.a	n.a
...of which with university degree or equivalent	n.a	n.a	n.a	n.a	n.a	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
Sources: - Environmental Performance Review 2008 (www.unece.org/env/epr/epr_studies/kazakhstan II.pdf) - NFP-update 2004 (www.fao.org/forestry/media/14331/0/161/)

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
NFO update 2009 (unpublished)	H	Graduation of Bachelor's degree or equivalent and Forest technician; professionals working in forest research centres	2008	

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.	n.a.	n.a.	n.a.	n.a.
Bachelor's degree (BSc) or equivalent	n.a.	n.a.	n.a.	n.a.	325	34
Forest technician certificate / diploma	n.a.	n.a.	n.a.	n.a.	350	21
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.	17	35
Master's degree (MSc) or equivalent	n.a.	n.a.	n.a.	n.a.	4	25
Bachelor's degree (BSc) or equivalent	n.a.	n.a.	n.a.	n.a.	6	17

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		
Professionals working in public forest research centres		

Other general comments to the table

17 Table T17 – Public revenue collection and expenditure

No information is available for this reporting table.