Forestry Department
Food and Agriculture Organization of the United Nations

GLOBAL FOREST RESOURCES ASSESSMENT 2010

COUNTRY REPORT

THE REPUBLIC OF KOREA

FRA2010/170
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:

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The Global Forest Resources Assessment Country Report Series is designed to document and make available the information forming the basis for the FRA reports. The Country Reports have been compiled by officially nominated country correspondents in collaboration with FAO staff. Prior to finalisation, these reports were subject to validation by forestry authorities in the respective countries.

Contents

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Introduction

The National Forest Inventory (NFI) in Korea is carried out by the Division of Forest Inventory, Korea Forest Research Institute (KFRI) under Korea Forest Service (KFS). The NFI has been conducting on a regular base from 1972 approximately at 10-year intervals. Since the third inventory (1986-1992), about 3,500 sample plots have been systematically distributed all over the country and measured to investigate forest resources. The results of Province-wise inventory data are reported to the KFS at the end of the year, and KFS compiles and publishes the Statistical Yearbook of Forestry annually, based on the inventory data. The Yearbook covers all aspects of the status of Korean forestry, including national forestry statistics such as forest area, growing stock, timber production, forestry products, timber market etc. In addition, the Yearbook is updated every year using up-to-date data reported by local governments. The local government (Province) reports some kinds of forestry statistics annually to KFS, including change of forest area, disturbances, cutting, etc. In compiling the national report of FRA2010, the Statistical Yearbook of Forestry is the major source of national data. Only some of data come from the results of research projects.

From the 5th NFI(2006-2010), the inventory program has been improved, moving from periodic to annual inventory system to meet increasing demands for reliable forest information from international processes and conventions. The new NFI design focuses on assessing and monitoring the extent and state of forest resources in Korea on accurate and timely manner. Core changes include transition to annual inventory at 5 year intervals, new systematic layout of 4,000 permanent sample plots, new ground plot design, addition of new variables related to forest carbon estimation and biodiversity, etc. According to the annual inventory system, all permanent sample plots are divided into five panels, and each panel will be remeasured every five years.

It is commonly recognized that growing stock has been underestimated so far. Analysis of 3-year(2006-2008) NFI data revealed that average growing stock volume is more than 120 m3 per ha, whereas the present(2007) is 97.8 m3/ha. The final result of the 5th NFI will come out in 2010. Based on the new result, all the previous statistics of growing volume will be recalculated in 2011 to keep consistency in internal and international reporting.

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea.	H	Forest Other land	1990 2000 2005	
FAO STAT	H	Land area, Inland water	1990 2000 2005	

1.2.2 Classification and definitions

National class	Definition
Forest	It consists of stocked forest land and un-stocked forest land. Stocked forest is land spanning more than 1 hectare with trees and a canopy cover of more than 30 percent. The number of young tree per ha is more than 1,200 in coniferous forest and 1,600 in broad-leaved forest, respectively. Un-stocked forest is land spanning more than 1 hectares with trees and a canopy cover of less than 30 percent, and includes non-stocked land, denuded land, reclaimed land, and miscellaneous forest land. The non-stocked forest lands are forested lands. The miscellaneous forest lands include rock, roads, grave/cemetery, nursery, orchard, military facilities etc.
Other land	All land that is not classified as "Forest", also includes "In Inland water bodies" which are rivers, lakes, ditches, marshes, dams, ponds, water reservoirs, etc

1.2.3 Original data

A. Landuse

National categories	Area in 000ha		
	1990	**2000**	**2005**
Forest			
Stocked	6,302	6,268	6,239
Un-stocked	174	154	155
Sub-Total	6,476	6,422	6,394
Other land	**3,451**	**3,524**	**3,571**
Total area	**9,927**	**9,946**	**9,965**

B. Detail Breakdown of Un-stocked Forest Lands

Un-stocked Forest	Area in 000ha		
	1990	**2000**	**2005**
Non-stocked	47.00	32.26	39.23
Denuded	0.51	0.34	1.18
Reclaimed	21.82	0.03	0.03
Miscellaneous	105.10	121.20	114.20
Total	**174.43**	**154.10**	**154.64**

1.3 Analysis and processing of national data

1.3.1 Calibration

The figure of forest from the national data has been maintained and not subjected to calibration. These are derived from reliable inventory data as well as up-to-date information. The area of inland water bodies has been adopted from FAOSTAT and changes due to this have been made in the area of "other land" to match the total and land area of the country with FAOSTAT.

	1990	2000	2005
National data	**9,874,369**	**9,893,075**	**9,911,616**
FAO	**9,873,000**	**9,873,000**	**9,873,000**
Calibration factor	**0.999861**	**0.997971**	**0.996104**

Categories	**1990**	**2000**	**2005**
Stocked Forest	6,301	6,256	6215
Un-stocked Forest	174	153	154
Other Land	3,398	3,464	3504
Inland Water Bodies	53	53	53
Total Land Area	**9,926**	**9,926**	**9,926**

1.3.2 Estimation and forecasting

The figures for 1990, 2000 and 2005 have been developed after reclassification. The figure for forest in 2010 has been forecasted by linear extrapolation with all adjustment in the "other land".

Categories	Area (000 hectares)			
	1990	2000	2005	2010
Forest	6,475	6,409	6,369	6,329
Other wooded land				
Other land	3,398	3,464	3,504	3,544
...of which with tree cover				
Inland water bodies	53	53	53	53
TOTAL	**9,926**	**9,926**	**9,926**	**9,926**

1.3.3 Reclassification into FRA 2010 categories

There is no matching classification and data for "Other wooded land" and "Other land with tree cover" in the country.

National Class	Percentage allocation to FRA Categories			
	Forest	Other wooded land	Other land	Other land with tree cover
Stocked Forest	100			
Un-stocked Forest				
Non-Stocked	100			
Denuded	100			
Reclaimed	100			
Miscellaneous			100	

(Note: "Non-Stocked" under un-stocked forests are forest with canopy cover between 10% and 30%. The miscellaneous forests under un-stocked forests include rock areas, roads, grave/cemetery, nursery, orchard, military facilities etc.)

1.4 Data for Table T1

FRA 2010 categories	Area (000 hectares)			
	1990	2000	2005	2010
Forest	6,370	6,288	6,255	6,222
Other wooded land	0	0	0	0
Other land	3,503	3,585	3,618	3,651
...of which with tree cover	n.a.	n.a.	n.a.	n.a.
Inland water bodies	53	53	53	53
TOTAL	**9,926**	**9,926**	**9,926**	**9,926**

1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest		
Other wooded land	The category and definition of "Other wooded land" is not applicable to national data. There is no national classification and data for "Other wooded land". Any areas that may fall under the FAO definition of Other wooded land are included under Other land.	
Other land		
Other land with tree cover	The category and definition of "Other land with tree cover" are not applicable to national data. There is no national classification and data for "Other land with tree cover".	
Inland water bodies		

Other general comments to the table

Expected year for completion of ongoing/planned national forest inventory and/or RS survey / mapping	
Field inventory	2010
Remote sensing survey / mapping	2010

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea.	H	Forest ownerships	1990 2000 2005	

2.2.2 Classification and definitions

National class	Definition
Private forest	Land owned by individuals, families etc, that is not included in Public forest and National forest.
Public forest	Land owned by the regional governments, Provinces or Counties.
National forest	Land owned by the national government or government-owned institutions or corporations.

Note: Korea consists of 9 Provinces, and County is sub-administrative district under the Province.

2.2.3 Original data

- Forest ownership

National categories	Area in 000ha		
	1990	2000	2005
National forest	1,346	1,433	1,484
Public ownership	489	493	490
Private ownership	4,625	4,496	4,420
...of which owned by individuals			
...of which owned by private business entities and institutions			
...of which owned by local communities			
...of which owned by indigenous / tribal communities			
Other types of ownership	16		
TOTAL	**6,476**	**6,422**	**6,394**

- Holder of management rights of public forests

National categories	Area in ha		
	1990	2000	2005
-Mining	2186	1409	1205
-Industrial	2914	2386	3530
-Experimental forest of colleges	13970	5305	4922
-others	0	2138	2077
-Individuals	43576	11402	6002
-reforestation of Village forestry Associates	65823	34042	14352
-Pasture	6984	5025	3858
-Corporations	28000	37144	19213
Total	163453	98851	55159

2.3 Analysis and processing of national data

2.3.1 Calibration

	1990	**2000**	**2005**
Forest area-national data	6,476,030	6,422,128	6,393,949
New forest area for FRA2010	6,370,055	6,288,214	6,255,428
Calibration factor for forest	**0.9836358**	**0.979148**	**0.9783356**

- Forest ownership

National categories	**Area in 000ha**		
	1990	**2000**	**2005**
National forest	1,324	1,403	1,452
Public ownership	481	483	479
Private ownership	4,549	4,402	4,324
...of which owned by individuals			
...of which owned by private business entities and institutions			
...of which owned by local communities			
...of which owned by indigenous / tribal communities			
Other types of ownership	16	0	0
TOTAL	**6,370**	**6,288**	**6,255**

- Holders of management rights of public forests

National categories	**Area in ha**		
	1990	**2000**	**2005**
-Mining	2,150	1,380	1,179
-Industrial	2,866	2,336	3,454
-Experimental forest of colleges	13,741	5,194	4,815
-others	0	2,093	2,032
-Individuals	42,863	11,164	5,872
-reforestation of Village forestry Associates	64,746	33,332	14,041
-Pasture	6,870	4,920	3,774
-Corporations	27,542	36,369	18,797
Total	**160,778**	**96,790**	**53,964**

2.3.2 Estimation and forecasting

This step is not needed.

2.3.3 Reclassification into FRA 2010 categories

National Class	**Percentage allocation to FRA Categories**				
	Public Administration	Individuals	Private corporations and institutions	Communities	Other
-Mining			100		
-Industrial			100		
-Experimental forest					100

of colleges					
-others					100
-Individuals		100			
-reforestation of Village forestry Associates				100	
-Pasture				100	
-Corporations			100		

2.4 Data for Table T2

Table 2a - Forest ownership

FRA 2010 Categories	Forest area (000 hectares)		
	1990	2000	2005
Public ownership	1,805	1,886	1,931
Private ownership	4,549	4,402	4,324
...of which owned by individuals	n.a.	n.a.	n.a.
...of which owned by private business entities and institutions	n.a.	n.a.	n.a.
...of which owned by local communities	n.a.	n.a.	n.a.
...of which owned by indigenous / tribal communities	n.a.	n.a.	n.a.
Other types of ownership	16	0	0
TOTAL	**6,370**	**6,288**	**6,255**

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

Does ownership of trees coincide with ownership of the land on which they are situated?	√	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 (000 hectares)		
	1990	2000	2005
Public Administration	1,644	1,789	1,877
Individuals	43	11	6
Private corporations and institutions	33	40	23
Communities	72	38	18
Other	14	7	7
TOTAL	**1,805**	**1,886**	**1,931**

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
There are no national data for subcategories of private ownership

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
Statistical Yearbook of Forestry, Korea Forest Service	H	Designation	1990 2000 2005	

3.2.2 Classification and definitions

National class	Definition
Production forest	Forest reserved for mainly timber production. Forest management activities are allowed.
Non-production forest	Forest reserved for mainly public functions and services. Some kinds of management activities are legally and administratively restricted. Includes most of protection forests.

3.2.3 Original data

Function of forest	Area in ha		
	1990	2000	2005
Production forest	**4,986,543**	**4,945,038**	**4,923,341**
Non-production forest	**1,473,651**	**1,477,090**	**1,470,608**
-Protected forest			
+Prevention of soil erosion and run-off	8,968	2,780	2,127
+Prevention of shifting sand dune	1,059	1,015	891
+Landslide prevention	178	54	54
+Watershed conservation	160,634	284,288	306,647
+Providing fish habitat	6,027	4,031	3,852
+Health	34	27	11
+Landscape	30,047	28,035	27,833
-Forest genetic resources	11,052	16,979	33,804
-National and provincial parks	455,600	457,100	463,700
-Recreational forest	0	127,012	115,416
-Other protection forest	800,052	555,769	516,273
Un-surveyed	**15,836**	**0**	**0**
Total forest area	**6,476,030**	**6,422,128**	**6,393,949**

- Forest area under sustainable forest management in 2008

Total(in 1,000ha)	3,041
Intensive management forest	2,920
Certified forest by FSC	121

3.3 Analysis and processing of national data

3.3.1 Calibration

	1990	2000	2005
Forest area-national data	6,476,030	6,422,128	6,393,949
New forest area for FRA2010	6,370,055	6,288,214	6,255,428
Calibration factor for forest	**0.983635808**	**0.979148**	**0.97833561**

Function of forest	Area in ha		
	1990	**2000**	**2005**
Production forest	**4,904,942**	**4,841,924**	**4,816,680**
Non-production forest	**1,449,536**	**1,446,290**	**1,438,748**
-Protected forest			
+Prevention of soil erosion and run-off	8,821	2,722	2,081
+Prevention of shifting sand dune	1,042	994	872
+Landslide prevention	175	53	53
+Watershed conservation	158,005	278,360	300,004
+Providing fish habitat	5,928	3,947	3,769
+Health	33	26	11
+Landscape	29,555	27,450	27,230
-Forest genetic resources	10,871	16,625	33,072
-National and provincial parks	448,144	447,569	453,654
-Recreational forest	0	124,364	112,916
-Other protection forest	786,960	544,180	505,088
Un-surveyed	**15,577**	**0**	**0**
Total forest area	**6,370,055**	**6,288,214**	**6,255,428**

3.3.2 Estimation and forecasting

The reclassification provides the following area under primary functions. The areas for 2010 have been estimated through linear extrapolation.

Primary Functions	Area (000 ha) in 2005			
	1990	**2000**	**2005**	**2010**
Production	4,905	4,842	4,817	4,791
Protection	168	282	303	324
Conservation	17	21	37	53
Social Service	478	599	594	588
Multiple use	787	544	505	466
Unknown	16	0	0	0
Total	6,370	6,288	6,255	6,222

3.3.3 Reclassification into FRA 2010 categories

National Function of forest	Percentage allocation of a National class to a Primary Function class					
	Production	**Protection of soil and water**	**Conservation of biodiversity**	**Social services**	**Multiple purpose**	**No or unknown function**
Production forest	100%					
- Protected forest						
+ Prevention of soil erosion and run-off		100%				
+ Prevention of shifting sand dune		100%				
+Landslide prevention		100%				
+ Watershed conservation		100%				

+Providing fish habitat			100%			
+Health				100%		
+Landscape				100%		
- Forest genetic resources			100%			
- National and provincial parks				100%		
- Recreational forest				100%		
- Other protection forest					100%	
Un-surveyed						100%

3.4 Data for Table T3

Table 3a – Primary designated function

FRA 2010 Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Production	4905	4842	4817	4791
Protection of soil and water	168	282	303	323
Conservation of biodiversity	17	21	37	53
Social services	478	599	594	588
Multiple use	787	544	505	466
Other (please specify in comments below the table)	0	0	0	0
No / unknown	16	0	0	0
TOTAL	**6370**	**6288**	**6255**	**6222**

Table 3b – Special designation and management categories

FRA 2010 Categories	Forest area (000 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	3,737	3,740	3,138	3,041

Note : Forest area under sustainable forest management in 2008 is used for 2010.

3.5 Comments to Table T3

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Production	All forests in Korea are administratively and legally designated as Production or Non-production forest. The country does not consider it necessary to go further to classify “non-production forests”.	
Protection of soil and water		
Conservation of biodiversity		

Social services		
Multiple use		
Other		
No / unknown designation		
Area of permanent forest estate	Some of forests are not allowed to convert to other land use. But it also has exceptional case.	
Forest area within protected areas	No data available for protected area.	
Forest area under sustainable forest management	Intensive management forests were designated in 2008 and are included in this category because they are managed according to national guideline of SFM. Areas certified by FSC are also included here.	
Forest area with management plan	In extensive definition, all forests can be regarded as “Forest area with management plan”, because there are activities for forest fire and insects & diseases prevention in the entire forests in Korea. But T3b includes only forests which have specified management plan.	

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea.	H	Forest characteristic	1990, 2000, 2005	

4.2.2 Classification and definitions

National class	Definition
Conifers	Coniferous forests
Non-conifers(Hardwoods)	Broadleaved forest
Mixed	Mixed forests with conifers and hardwoods
Bamboo	Bamboo forest
Unstocked	Non-stocked, denuded, reclaimed, miscellaneous forests.

Note: In national classification, forest characteristics are classified into natural forest and plantation. But no clear definitions for plantation and natural forest are available. In general, plantation is a man-made forest by planting seedlings, and natural forest is a naturally regenerated forest

4.2.3 Original data

Classification	**1990**	**2000**	**2005**
Natural forest	n.a.	**4,368**	**3,697**
Other naturally regenerated forest	n.a.	**279**	**877**
…of which of introduced species	n.a.	n.a.	n.a.
Planted forest	n.a.	**1,775**	**1,820**
… of which of introduced species	n.a.	1,256	1,254
Total forest	**6,476**	**6,422**	**6,394**

There is no clear classification between introduced species and native species. But introduced coniferous species include larch, pitch pine, some coniferous species, which are major planting species.

4.3 Analysis and processing of national data

4.3.1 Calibration

	1990	**2000**	**2005**
Forest area-national data	**6,476,030**	**6,422,128**	**6,393,949**
New forest area for FRA2010	**6,370,055**	**6,288,214**	**6,255,428**
Calibration factor for forest	**0.9836358**	**0.979148**	**0.9783356**

	1990	**2000**	**2005**
Natural forest	n.a.	**4,277**	**3,617**
Other naturally regenerated forest	n.a.	**273**	**858**
…of which of introduced species	n.a.	n.a.	n.a.
Planted forest	n.a.	**1,738**	**1,781**
… of which of introduced species	n.a.	1,230	1,227
Total forest	**6,370**	**6,288**	**6,255**

4.3.2 Estimation and forecasting

	1990	2000	2005	2010
Natural forest	n.a.	**4,277**	**3,617**	**2,957**
Other naturally regenerated forest	n.a.	**273**	**858**	**1,443**
…of which of introduced species	n.a.	n.a.	n.a.	n.a.
Planted forest	n.a.	**1,738**	**1,781**	**1,823**
… of which of introduced species	n.a.	1,230	1,227	1,224
Total forest	**6,370**	**6,288**	**6,255**	**6,223**

4.3.3 Reclassification into FRA 2010 categories

This step is not needed.

4.4 Data for Table T4

Table 4a

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest	n.a.	**4,277**	**3,617**	**2,957**
Other naturally regenerated forest	n.a.	**273**	**858**	**1,443**
...of which of introduced species	n.a.	n.a.	n.a.	n.a.
Planted forest	n.a.	**1,738**	**1,781**	**1,823**
...of which of introduced species	n.a.	1,230	1,227	1,224
TOTAL	**6,370**	**6,288**	**6,255**	**6,223**

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)	8.0	6.1	7.0	7.9

4.5 Comments to Table T4

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Primary forest		
Other naturally regenerating forest		
Planted forest		
Rubber plantations	No rubber plantations in Korea	
Mangroves	No mangroves in Korea	
Bamboo		

Other general comments to the table
There is no clear classification between native and introduced species. But major coniferous planting species are introduced.

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea.	H	Reforestation	1988-2007	

5.2.2 Classification and definitions

National class	Definition
Afforestation	Same as FRA2010 definition
Reforestation	Same as FRA2010 definition
Natural expansion of forest	Same as FRA2010 definition

5.2.3 Original data

Classification/Species	Average	1988	1989	1990	1991	1992
Total	**38,235**	**46,099**	**36,404**	**37,350**	**37,095**	**34,226**
Native species	23,570	26,048	22,883	28,823	22,069	18,028
Introduced	**14,665**	**20,051**	**13,521**	**8,527**	**15,026**	**16,198**
-Japanese larch	4,803	7,416	4,608	1,136	5,166	5,690
-Pitch pine	1,091	2,420	1,210	957	568	300
Japanese cedar	648	1,145	542	620	572	360
Japanese cypress	3,895	5,219	3,702	3,274	3,691	3,588
other conifers	1,810	1,889	1,860	1,302	1,354	2,647
Italian poplar	2,417	1,962	1,599	1,238	3,675	3,613

Classification/Species	Average	1998	1999	2000	2001	2002
Total	**21,019**	**20,383**	**21,232**	**22,131**	**20,691**	**20,657**
Native species	16,707	14,348	17,353	16,078	17,579	18,178
Introduced	**4,312**	**6,035**	**3,879**	**6,053**	**3,112**	**2,479**
-Japanese larch	2,100	2,880	2,514	2,642	1,296	1,168
-Pitch pine	19	59	6	11	3	15
Japanese cedar	45	35	41	37	43	69
Japanese cypress	1,346	2,073	161	1,924	1,523	1,050
other conifers	802	988	1,157	1,439	247	177
Italian poplar	0	0	0	0	0	0

Classification/Species	Average	2003	2004	2005	2006	2007
Total	**20,781**	**21,139**	**21,452**	**19,938**	**20,600**	**20,775**
Native species	17,129	16,818	16,929	16,863	17,278	17,756
Introduced	**3,652**	**4,321**	**4,523**	**3,075**	**3,322**	**3,019**
-Japanese larch	647	838	944	329	565	559
-Pitch pine	57	287	0	0	0	0
Japanese cedar	28	51	33	21	14	22
Japanese cypress	1,328	1,493	1,477	1,193	1,313	1,164
other conifers	1,591	1,652	2,069	1,532	1,430	1,274
Italian poplar	0	0	0	0	0	0

5.3 Analysis and processing of national data

5.3.1 Calibration

This step is not needed.

5.3.2 Estimation and forecasting

This step is not needed.

5.3.3 Reclassification into FRA 2010 categories

This step is not needed.

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.	n.a.	n.a.	n.a.	n.a.	n.a.
Reforestation	38,235	21,019	20,781	14,665	4,312	3,652
...of which on areas previously planted	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Natural expansion of forest	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

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

5.5 Comments to Table T5

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Afforestation	Afforestation is very rare and no data.	
Reforestation	Previous forest type of reforested area is not recorded.	
Natural expansion of forest	No data applicable.	

Other general comments to the table
Even though there is no clear classification between native and introduced species, most of coniferous planting species are the introduced.

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea	H	Growing stock	1990, 2000 & 2005	
Volume & weight, Korea Forest Service. Korea	H	Merchantable tree volume		
Hardwood Forest Inventory Report, Forestry Research Institute,	H	Proportion of hardwood	1996	

6.2.2 Classification and definitions

National class	Definition
Growing stock	Volume over bark of all living trees more than 6cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level up to a tree top, and dose not include branches.
Merchantable tree volume	Part of volume over bark of all living trees more than 6cm in diameter at breast height (or above buttress if these are higher). Includes the stem from stump height(20cm) up to a top of 6cm in diameter, and dose not include branches.
Production forest	Forest reserved for mainly timber production. Forest management activities are allowed.
Non-production forest	Forest reserved for mainly public functions and services. Some kinds of management activities are legally and administratively restricted. Includes most of protection forests.
Commercial growing stock	Merchantable Growing stock in Production forest.
Non-commercial growing stock	Growing stock of Non-production forest.

6.2.3 Original data

A. Growing Stock

Forest type	Volume in million m^3		
	1990	**2000**	**2005**
Conifers	114	175	217
Hardwood	64	110	136
Mixed	70	122	153
Total	**248**	**407**	**506**

B. Growing stock in Production and Non-Production Forests

Classification	Volume in million m^3		
	1990	**2000**	**2005**
Growing stock of Production forest			
Growing stock of Non-production forest			
Total	**248**	**407**	**506**

Growing stock composition:
In the National Forest Inventory, all data are not analyzed on the basis of tree species but forest types like coniferous, broadleaved and mixed forests. Only the coniferous forests are further classified in details, because most of them can be identified with ease both in the field and on the aerial photos. On the contrary, it is difficult to classify and identify all the broadleaved tree species even in the field survey.

In 1993-1995, Hardwood Forest Inventory, apart from the NFI, was carried out to investigate the status of the broadleaved tree species. It revealed very important information on the hardwood forest resources, such as species composition, distribution, growing stock, etc.

Under the strong-drive policy, a lot of plantation has been established since 1970s. Reportedly it accounts for 1/3 of the total forest land, but no official statistics has been available until the Yearbook of 2004 reported the existing plantation area.
In spite of different survey year, these data sources are used in compiling this table. Further most of coniferous forests are regarded as plantations except natural red pine forests.

A. Growing stock proportion by species in coniferous forest

Coniferous tree species	Proportion(%)
Red pine	61.9%
Korean white pine	4.3%
Japanese larch	18.0%
Pitch pine	14.2%
Other conifers	1.6%

B. Growing stock proportion by species in broadleaved forest

Broadleaved tree species	Proportion(%)
Oriental Chestnut Oak	15.5%
Mongolian Oak	20.3%
Oriental Cork Oak	14.0%
Serrate Oak	13.2%

Black Locust	3.6%
Oriental White Oak.	3.7%
Sargent Cherry	3.4%
Loose flower Hornbeam	4.0%
Other hardwoods	22.3%

(Source: Hardwood Forest Inventory 1996).

C. Growing stock by forest type in 1990, 2000 and 2005

Forest type	Growing stock (million cubic meters)		
	1990	2000	2005
Conifers	114	175	217
Hardwood	64	110	136
Mixed	40	122	153
Total	218	407	506

D. Growing stock composition of mixed forests

According to the Hardwood Forest Inventory 1996, the ratio of coniferous forests and broadleaved forest is following.

- Coniferous forest 35%
- Broadleaved forest 65%

6.3 Analysis and processing of national data

6.3.1 Calibration

This step is not needed.

6.3.2 Estimation and forecasting

A. Growing Stock

The proportion of the mixed forest (Hardwood Inventory, 1996) is applied to the growing stock in 1990, 2000 and 2005 to restate it in terms of coniferous and broadleaved forests. The figure for forest in 2010 has been forecasted by linear extrapolation.

Forest type	**Growing stock (million m^3)**			
	1990	**2000**	**2005**	**2010**
Conifers	139	218	271	324
Hardwood	109	189	235	281
Total	**248**	**407**	**506**	**605**

B. Breakdown of Growing Stock by Species

Forest type/Species	Proportion	1990	2000	2005
Conifers	**(100%)**	**138.5**	**217.7**	**271.0**
-Red pine	61.9%	85.7	134.8	167.7
-Korean white pine	4.3%	6.0	9.4	11.7
-Japanese larch	18.0%	24.9	39.2	48.8
-Pitch pine	14.2%	19.7	30.9	38.5
-Other conifer	1.6%	2.2	3.5	4.3
Hardwoods	**(100%)**	**109.5**	**189.3**	**235.0**
-Oriental Chestnut Oak	15.5%	17.0	29.3	36.4
-Mongolian Oak	20.3%	22.2	38.4	47.7
-Oriental Cork Oak	14.0%	15.3	26.5	32.9
-Serrate Oak	13.2%	14.5	25.0	31.0
-Black Locust	3.6%	3.9	6.8	8.5
-Oriental White Oak.	3.7%	4.1	7.0	8.7
-Sargent Cherry	3.4%	3.7	6.4	8.0
-Loose flower Hornbeam	4.0%	4.4	7.6	9.4
-Other hardwoods	22.3%	24.4	42.2	52.4

C. Growing stock of the ten most common species

No.	Species	1990	2000	2005
1	Red pine	85.7	134.8	167.7
2	Japanese larch	24.9	39.2	48.8
3	Mongolian Oak	22.2	38.4	47.7
4	Pitch pine	19.7	30.9	38.5
5	Oriental Chestnut Oak	17.0	29.3	36.4
6	Oriental Cork Oak	15.3	26.5	32.9
7	Serrate Oak	14.5	25.0	31.0
8	Korean white pine	6.0	9.4	11.7
9	Loose flower Hornbeam	4.4	7.6	9.4
10	Oriental White Oak.	4.1	7.0	8.7
	Remainder	34.3	58.9	73.2
	Total	248.0	407.0	506.0

6.3.3 Reclassification into FRA 2010 categories

This step is not needed.

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	248	407	506	605	0	0	0	0
... of which coniferous	139	218	271	324	0	0	0	0
... of which broadleaved	109	189	235	281	0	0	0	0
Growing stock of commercial species	169	277	344	397	0	0	0	0

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 densiflora S. et Z.*	Red pine	85.7	134.8	167.7
2nd	*Larix leptolepis (S. et Z.) Gordon*	Japanese larch	24.9	39.2	48.8
3rd	*Quercus mongolica Fisch.*	Mongolian oak	22.2	38.4	47.7
4th	*Pinus rigida Mill.*	Pitch pine	19.7	30.9	38.5
5th	*Quercus acutissima Carruth.*	Oriental chestnut oak	17.0	29.3	36.4
6th	*Quercus variabilis Bl.*	Oriental cork oak	15.3	26.5	32.9
7th	*Quercus serrata Thunb.*	Serrate oak	14.5	25.0	31.0
8th	*Pinus koraiensis S. et Z.*	Korean white pine	6.0	9.4	11.7
9th	*Carpinus laxiflora Bl.*	Loose flower hornbeam	4.4	7.6	9.4
10th	*Quercus aliena Bl.*	Oriental white oak.	4.1	7.0	8.7
Remaining			34.3	58.9	73.2
TOTAL			**248.0**	**407.0**	**506.0**

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)	6	
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	0	
Minimum diameter (cm) of branches included in growing stock (W)		Branches are not included in growing stock
Volume refers to "above ground" (AG) or "above stump" (AS)	AG	

[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.

6.5 Comments to Table T6

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total growing stock	No data available for reporting on **Other wooded land** in Table 6a.	The growing stock per hectare has increased substantially during this 20-year reporting period. It is mainly due to the large areas planted since the 1970s.
Growing stock of broadleaved / coniferous		
Growing stock of commercial species		
Growing stock composition		

Other general comments to the table
Final data for growing stock composition are subject to change in the future because the base year of the data sources are different from the reference year. The above results are only estimate based on the existing data sources available at this moment. From the 5th NFI(2006-2010), the inventory program has been improved, moving from periodic to annual inventory system to meet increasing demands for reliable forest information from international processes and conventions. The new NFI design focuses on assessing and monitoring the extent and state of forest resources in Korea on accurate and timely manner. Core changes include annual inventory at 5 year intervals, new systematic layout of 4,000 permanent sample plots, new ground plot design, addition of new variables related to forest carbon estimation and biodiversity, etc. According to the annual inventory system, all permanent sample plots are divided into five panels, and each panel will be remeasured every five years. It is commonly recognized that growing stock has been underestimated so far. Analysis of 3-year(2006-2008) NFI data revealed that average growing stock volume is more than 120 m3 per ha, whereas the present(2007) is 97.8 m3/ha. The final result of the 5th NFI will come out in 2010. Based on the new result, all the previous statistics of growing volume will be recalculated in 2011 to keep consistency in internal and international reporting.

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea	H	Growing stock	1990 2000 2005	
.Research on the development of biomass conversion factor	H	Basic density BEF R-ratio	2008/	

7.2.2 Classification and definitions

National class	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark
Below-ground biomass	All living biomass of live roots. No data on threshold value for fine root
Dead wood	No definitions

7.2.3 Original data

FRA 2010 category	Volume (million cubic meters over bark)		
	Forest		
	1990	2000	2005
Total growing stock	248	407	506
... of which coniferous	139	218	271
... of which broadleaved	109	189	235

7.3 Analysis and processing of national data

7.3.1 Calibration

This step is not needed.

7.3.2 Estimation and forecasting

Forest type	Basic density	BEF	Root-Shoot Ratio
Coniferous	0.48	1.29	0.28
Broadleaved	0.65	1.22	0.41

Note:These national factors will be updated in the future through new research projects. .

FRA 2010 category	Volume (million cubic meters over bark)			
	Forest			
	1990	2000	2005	2010
Coniferous	139	218	271	324
Above-ground biomass	86	135	168	201
Below-ground biomass	24	38	47	56
Broadleaved	109	189	235	281
Above-ground biomass	86	150	186	223
Below-ground biomass	35	61	76	91

7.3.3 Reclassification into FRA 2010 categories

This step is not needed.

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	173	285	354	424	0	0	0	0
Below-ground biomass	59	99	123	147	0	0	0	0
Dead wood	n.a.	n.a.	n.a.	n.a.	0	0	0	0
TOTAL	**232**	**384**	**478**	**571**	0	0	0	0

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
Biomass conversion factors are still being developed in research projects, and will be further developed with more data in the future.

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea.	H	Growing stock	1990 2000 2005	

8.2.2 Classification and definitions

National class	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 living biomass of live roots. No data on threshold value for fine root
Carbon in dead wood	-
Carbon in litter	Minimum diameter for deadwood is less than 6cm.
Soil carbon	Same as FRA2010

8.2.3 Original data

FRA 2010 category	Volume (million cubic meters over bark)		
	Forest		
	1990	2000	2005
Above-ground biomass	173	285	354
Below-ground biomass	59	99	123
Dead wood			
TOTAL	232	384	478

FRA2010 categories	Carbon fraction
Carbon in above-ground biomass	0.47
Carbon in below-ground biomass	0.47

- National data for carbon content in litter and soil.

Carbon content in litter	2.5 tC/ha
Carbon content in soil	67.9 tC/ha

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	6,370	6,288	6,255	6,222

8.3 Analysis and processing of national data

8.3.1 Calibration

This step is not needed.

8.3.2 Estimation and forecasting

FRA 2010 category	Volume (million cubic meters over bark)			
	Forest			
	1990	2000	2005	2010
Above-ground biomass	173	285	354	423
Below-ground biomass	59	99	123	147
Dead wood	n.a.	n.a.	n.a.	n.a.
TOTAL	232	384	478	571

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	81	134	166	199	0	0	0	0
Carbon in below-ground biomass	28	47	58	69	0	0	0	0
Sub-total: Living biomass	*109*	*181*	*224*	*268*	0	0	0	0
Carbon in dead wood	n.a.	n.a.	n.a.	n.a.	0	0	0	0
Carbon in litter	16	16	16	16	0	0	0	0
Sub-total: Dead wood and litter	***16***	***16***	***16***	***16***	0	0	0	0
Soil carbon	433	427	425	422	0	0	0	0
TOTAL	**558**	**623**	**665**	**706**	0	0	0	0

Soil depth (cm) used for soil carbon estimates	50cm

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea	H	Fires	1988-2007	

9.2.2 Classification and definitions

National class	Definition
Damages by forest fire	Damaged or burned forest land by forest fire.

9.2.3 Original data

Year	Average	1988	1989	1990	1991	1992
Area	755	878	1,652	175	429	640
No	191	270	294	71	139	180

Year	Average	1998	1999	2000	2001	2002
Area	6,398	1,014	473	25,953	963	3,588
No	539	265	315	729	785	599

Year	Average	2003	2004	2005	2006	2007
Area	854	133	1,588	2,067	254	230
No	431	271	544	516	405	418

9.3 Analysis and processing of national data

9.3.1 Estimation and forecasting

Five year averages have been calculated for reporting data for 1990, 2000 and 2005.

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	0.755	191	6.398	539	0.854	431
... of which on other wooded land	0	0	0	0	0	0
... 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

9.5 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
No planned fires at all in Korea.

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea	H	Insects and diseases	1988-2007	

10.2.2 Classification and definitions

National class	Definition
Damages by insect pests	Damaged forest by insect pests such as pine gall midge, black pine bast scale, pine wood nematode, pine caterpillar, fall webworm, Japanese alder leaf beetle, others
Damages by diseases	Damaged forest by diseases such as white pine blister rust, others
Others	Damages from illegal forest activities- steal felling, unlicensed cutting, unlawful conversion of forest to other uses, etc.

10.2.3 Original data

There are disturbances caused by other natural process like snow fall, wind storm and flood in Korea but statistics is not available on such disturbances. Others in national classification is mainly related to disturbance caused by illegal activities in forests, which are not included in this table of FRA. Disturbance by diseases in Korea has been quite rare since 1997. No data are available these days.

Year	Average	1988	1989	1990	1991	1992
Insect	396,987	459,540	417,519	384,485	366,013	357,378
Disease	2,099	3,437	3,088	1,926	769	1,277
Disturbance by other biotic agents	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Disturbance caused by abiotic factors	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Year	Average	1998	1999	2000	2001	2002
Insect	339,474	370,543	360,673	337,359	336,528	292,266
Disease	864	644	1,047	2,629	0	0
Disturbance by other biotic agents	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Disturbance caused by abiotic factors	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Year	Average	2003	2004	2005	2006	2007
Insect	314,865	254,190	243,035	315,607	389,955	371,539
Disease	0	0	0	0	0	0
Disturbance by other biotic agents	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Disturbance caused by abiotic factors	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Note: Pine wood nematode is regarded as insect pests in national classification.

10.3 Analysis and processing of national data

10.3.1 Calibration

This step is not needed.

10.3.2 Estimation and forecasting

Five year averages have been calculated for reporting data for 1990, 2000 and 2005.

10.3.3 Reclassification into FRA 2010 categories

This step is not needed.

10.4 Data for Table T10

Table 10a – Disturbances

FRA 2010 category	Affected forest area (1000 hectares)		
	1990	2000	2005
Disturbance by insects	397	339	315
Disturbance by diseases	2	1	0
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	**399**	**340**	**315**

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. Pine wood nematode is regarded as insect in the table..

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 caterpillar -*Dendrolimus spectabilis* Butler	*Pinus densiflora, Pinus rigida, Pinus thunbergii , Pinus koraiensis, Larix leptolepis, Abies holophylla, Cedrus deodara, Picea jezoensis*	1975	488.9	1/yr
Pine needle gall midge -*Thecodiplosis japonensis* Uchida et Inouye	*Pinus densiflora, Pinus thunbergii*	1988	327.4	1/yr
Fall webworm -*Hyphantria cunea* Drury	160 deciduous trees such as *Diospyros kaki, Platanus orientalis, Prunus serrulata* var. *spontanea,* and *Juglans regia*	1980	52.6	2 or 3/yr
Black pine bast scale -*Matsucoccus thunbergianae* Miller et Park	*Pinus densiflora, Pinus thunbergii*	2007	47.2	1/yr
Japanese alder leaf beetle -*Agelastica coerulea* Baly	15 deciduous trees such as *Alnus japonica, Betula schmidtii, Corylus heterophylla* var. *thunbergii, Castanea crenata, Carpinus laxiflora, Pyrus serotina* var. *culta, Malus domestica*	1980	34.5	1/yr
White pine blister rust -*Cronartium ribicola J*. C. Fisch. ex Rabenh	*Pinus koraiensis, Pedicularis*spp.	1978	4.0	

Pine wilt disease 1. Main pest: Pine wood nematode (*Aphelenchoides xylophilus* Steiner & Buhrer) 2. Insect vector: Japanese pine sawyer (*Monochamus alternatus* Hope), Sakhalin pine longicorn beetle (*Monochamus saltuarius* Gebler)	*Pinus densiflora, Pinus koraiensis, Pinus thunbergii Pinus densiflora, Pinus rigida, Abies holophylla, Cryptomeria japonica, Cedrus deodara* and etc.	2006	7.8	multivoltine (1 generation/4-5 days) 1/yr
Oak wilt disease 1. Main pest: *Raffaelea quercus-mongolicae* 2. Insect vector: *Platypus koryoensis* (Murayama)	*Quercus serrata, Quercus cripula, Quercus mongolica* var. *grosseserrata Quercus mongolica, Quercus serrata, Quercus aliena, Quercus acutissima*	2008	2.8	1/yr

Note: Oak wilt disease was found recently, and was not included in T10a.

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

Scientific name of woody invasive species	**Forest area affected 2005 (1000 hectares)**
Total forest area affected by woody invasive species	

Note: Woody invasive species are not reported in Korea, but it is reported that only herbaceous plant species disturb forest ecosystem.

10.5 Comments to Table T10

Variable / category	**Comments related to data, definitions, etc.**	**Comments on the reported trend**
Disturbance by insects		
Disturbance by diseases		
Disturbance by other biotic agents		
Disturbance caused by abiotic factors		
Major outbreaks		
Invasive species	Woody invasive species are not reported in Korea, but it is reported that herbaceous plant species only disturb forest ecosystem. No data available for reporting on this table	

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea.	M	Removal and value of wood	1998-2007	
Guidelines for Country Reporting to FRA 2010 (FAO)		Conversion factor		

11.2.2 Classification and definitions

National class	Definition
Industrial roundwood removals	No clear definition
Woodfuel removals	No clear definition

11.2.3 Original data

Year	Average	1,988	1,989	1,990	1,991	1,992
Industrial wood removal	1,204	1,246	1,227	1,138	1,286	1,123
Fuel wood removal	402	707	427	379	277	223
Year	**Average**	**1,998**	**1,999**	**2,000**	**2,001**	**2,002**
Industrial wood removal	1,570	1,428	1,694	1,592	1,533	1,605
Fuel wood removal	266	133	153	441	360	243
Year	**Average**	**2,003**	**2,004**	**2,005**	**2,006**	**2,007**
Industrial wood removal	2,278	1,673	2,241	2,350	2,444	2,680
Fuel wood removal	293	319	229	275	374	266

Note ①: National data for industrial wood removal coincide with FAOSTAT. But they are already volume over bark.

Note ②: It was impossible to find data source for FAOSTAT. For this reason, new national data for fuel wood removal were taken from the Yearbook. In the Yearbook, national

production of fuel wood is classified into charcoal, firewood, branches & leaves, and others, of which charcoal and firewood are used to compile T11.

- Market value of wood per volume cubic meter (Unit : Korean Won)

Tree species	**1990**	**2000**	**2005**
Coniferous	83,666	111,500	192,563
Broadleaved	75,333	95,750	108,000
Average	**79,500**	**103,625**	**150,282**

Note : National data for market value of wood include value added tax, cost of truck loading and transportation to sawmill. This means that the national data do not correspond to the value of the wood as explained in the Guidelines. But data for transportation cost are not available at this moment. Average market value is derived from values of coniferous and broadleaved species, and used to calculate the value of wood removal.

11.3 Analysis and processing of national data

11.3.1 Calibration

This step is not needed.

11.3.2 Estimation and forecasting

National statistics gives woodfuel figures in tonnes, thus it is necessary to use conversion factors. For instance, the conversion factors of 6.0 and 1.37931 are used for charcoal, and a conversion factor of 1.37931 for firewood, respectively, as instructed in the guidelines.

11.3.3 Reclassification into FRA 2010 categories

This step is not needed.

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.)	1,204	1,570	2,278	402	266	293
... of which from forest	1,204	1,570	2,278	402	266	293
Unit value (local currency / m^3 o.b.)	75,333	95,750	150,282	75,333	95,750	150,282
Total value (1000 local currency)	90,700,932	150,327,500	342,342,396	30,283,866	25,469,500	44,032,626

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	WON	WON	WON

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	National data for market value of wood include value added tax, cost of truck loading and transportation to sawmill. This means that the national data do not correspond to the value of the wood as explained in the Guidelines. But data for transportation cost are not available at this moment. Average market value is derived from values of coniferous and broadleaved species, and used to calculate the value of wood removal.	
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
Plant products / raw material
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
Animal products / raw material
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
Statistical Yearbook of Forestry, Korea Forest Service. Korea.	M	Removal and value of NWFP	2005	

12.2.2 Classification and definitions

National class	Definition
Forest products	No specific definition available
Non-wood forest products	No specific definition available

12.2.3 Original data

The national data for forest products are available in the Yearbook, including wood products. But wood and non-wood products are not clearly classified. Some of NWFP are reported in different units, which are difficult to convert into mass. Moreover, definitions for some type of NWFP are not clear to reclassify them into FRA categories, and there are no national data for animal products/raw material.

National category	2,005			FRA2010 Category
	Unit	Quantity	Value(1000)	
Manure(Farm materials)	M/T	643	67,547,315	8
Forage-fodder	M/T	196	58,885,200	2
Nuts and Fruits	M/T	141,610	393,302,534	1
Mushroom	M/T	28,375	284,678,704	1
Fiber material	M/T	99	170,195	5
Resin	Litter	1	165,720	7
Medicinal plants	M/T	1,086	28,950,227	3
Bamboo shoot	M/T	403	800,158	1
Saw dust	1000 m3	10,166	30,068,436	8
Ornamental and garden trees	1000 trees	73,181	785,207,229	6
Wild vegetable	M/T	33,271	202,569,919	1
Sap	Litter	4,750	10,691,236	1
Wood vinegar	Litter	4,012	13,931,050	7
Others			27,149,461	8
Total			**1,904,117,384**	

12.3 Analysis and processing of national data

12.3.1 Calibration

12.3.2 Estimation and forecasting

12.3.3 Reclassification into FRA 2010 categories

12.4 Data for Table T12

Rank	Name of product	Key species	Unit	NWFP removals 2005		NWFP category
				Quantity	Value (1000 local currency)	
1st	Oak mushroom	*Lentinus edodes (berk.)*	M/T	26,541	205,882,524	1
2nd	Chesnut	Castanea crenata	M/T	76,446	157,540,388	1
3rd	Lance asiabell	*Codonopsis lanceolata*	M/T	6,153	92,252,051	1
4th	pine mushroom	*Tricholoma matsutake*	M/T	723	70,731,646	1
5th	Jujube	*Zizyphus jujuba*	M/T	8,215	59,370,608	1
6th	Aster scaber	*Ligularia fischeri*	M/T	15,560	42,082,284	1
7th	Pinenut	*Pinus koraiensis*	M/T	2,680	21,374,021	1
8th	Medicinal plants	*Panax ginseng*	M/T	10	11,696,210	3
9th	Sap	*Acer pictum*	litter	4,660	10,392,414	1
10th	Walnut	*Juglans regia, Juglans sinensis*	M/T	868	10,151,041	1
All other plant products					1,222,644,197	
All other animal products						
TOTAL					**1,904,117,384**	

	2005
Name of local currency	Korean Won(KRW)

12.5 Comments to Table T12

Variable / category	Comments related to data, definitions, etc.
10 most important products	The rank of 10 most important products is decided according to the value of production.
Other plant products	
Other animal products	No data applicable.
Value by product	
Total value	

Other general comments to the table
- Nut and fruits : Chesnut, walnut, jujube, ginko, persimon, raspberry, wild grapes, Chinese pepper, torreya nut etc. - Wild vegetables : fernbrake, Chinese bellflower, codonopsis lanceolata, angelica, osmund. Bamboo shoot, etc. - Sap : painted maple, costata birch, white birch etc. - Medicinal plants : cornelian cherry fruit, cultivated mountain Ginseng, solomon's seal, etc. - Fibre material : paper mulberry, edzeworthia papyrifera, etc. - Mushroom : pine mushroom, oak mushroom, black fungus, oyster mushroom, etc. - Resin : oriental lacquer, yellow lacquer, pine-root oil, etc.

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
Statistical Yearbook of Forestry, Korea Forest Service. Korea.	M	Employment	1990 2000 2005	

13.2.2 Classification and definitions

National class	Definition
Employment in forestry	Employment related to forestry activities such as reforestation, tending, thinning, tree cutting, prevention of insects and diseases, construction of forest road and erosion control dam, etc

13.2.3 Original data

Temporary Employment status in forestry (Unit : 1,000 persons)

National Category	Employment (000 persons days)		
	1990	2000	2005
Total	n.a	**3,122**	**6,200**
Temporary Employment in forestry	n.a	3,119	6,196
Local Forestry Cooperatives	1.280	1.579	1.701
Devoted forest managers and forest successors	0.443	1.268	1.922

Note. Staff of public forest agencies is excluded.

13.3 Analysis and processing of national data

13.3.1 Calibration

13.3.2 Estimation and forecasting

The information for 1990 is not available. The figures of "Temporary Employment in forestry "and 'Local Forestry Cooperative" are assumed as paid employment and "Devoted forest managers and forest successors" are assumed as self-employment. The person days have been converted into person years by assuming that there are 260 working days in a year.

National Category	Employment (FTE)		
	1990	2000	2005
Temporary Employment in forestry	n.a	11996	23831
Local Forestry Cooperatives	5	6	7
Devoted forest managers and forest successors	2	5	7

13.3.3 Reclassification into FRA 2010 categories

13.4 Data for Table T13

FRA 2010 Category	Employment (1000 years FTE)		
	1990	2000	2005
Employment in primary production of goods	n.a.	12	24
...of which paid employment	n.a.	12	24
...of which self-employment	0.002	0.005	0.007
Employment in management of protected areas	n.a.	n.a.	n.a.

13.5 Comments to Table T13

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Employment in primary production of goods	Temporary labours hired by public forest agencies.	
Paid employment / self-employment		
Employment in management of protected areas	No data applicable.	

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	1972	
	Reference to document	The National Forest Plan	
National forest programme (nfp)		X	Yes
			No
If Yes above, provide:	Name of nfp in country	The 5th nfp(2008-2017)	
	Starting year	2008	
	Current status		In formulation
		X	In implementation
			Under revision
			Process temporarily suspended
	Reference to document or web site	http://www.forest.go.kr/ http://english.forest.go.kr/	
Law (Act or Code) on forest with national scope		X	Yes, specific forest law exists
			Yes, but rules on forests are incorpo-rated in other (broader) legislation
			No, forest issues are not regulated by national legislation
If Yes above, provide:	Year of enactment	1961	
	Year of latest amendment		
	Reference to document	Forest Law	

In case the responsibility for forest policy- and/or forest law-making is decentralized, please indicate the existence of the following and explain in the comments below the table how the responsibility for forest policy- and law-making is organized in your country.		
Sub-national forest policy statements		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	National forest plan (nfp)
National forest programme (nfp)	National forest plan (nfp) - The 1st nfp(1973-1978) : Forest Rehabilitation Project - The 2nd nfp(1979-1987) : Forest Rehabilitation Project - The 3rd nfp(1988-1997) : Forest Resource Establishment Project - The 4th nfp(1998-2007) - The 5th nfp(2008-2017)
Law (Act or Code) on forest with national scope	There are 12 laws relating to forests and forestry, currently in effect. The **Forest Law** was enacted in 1961 to promote forest protection and forest development as well as to enhance forest productivity and public functions. The Forest Law focused on rehabilitation and restoration of degraded forests. As the needs and the management goals of forestry has stepped into a new phase, KFS established the **Framework Act on Forest** in 2001. It presents the fundamental goal and direction for forest policies. Amendment to the existing forestry provisions or establishment of new laws are based on this Framework Act. Based on the study on the current structure of the Law and the ways to improve it, the **Act on the Promotion and Management of Forest Resources**, the **Act on National Forest Management**, and the **Act on Forest Culture and Recreation** were enacted in August 2005. The Forest Law was abolished and replaced by these newly-established Acts, as they came into effect in 2006. Aside from the primary Acts, KFS enacted: the **Erosion Control Act** in 1962 for prevention of denuded forest lands and effective erosion control; **Act on Distribution of Special Employees for Forest Protection** in 1963 to prevent forest calamities and encourage capacity building in the forestry field by dispatching Special Employees for Forest Protection when requested by forest owners or managers; the **Act on Forestry Cooperatives Federation** in 1993 for the organization and functions of Forestry Cooperatives; and the **Act on Promotion of Forestry and Mountain Villages** in 1997 for intensive management on private forests which make up nearly 70% of the forests in Korea. The Act on Promotion of Forestry and Mountain Villages was amended in 2001 to provide institutional framework for reinforcement of the under-developed mountain villages and promotion of the forest industry. The **Act on Establishment and Promotion of Forest Arboretum** was legislated and announced in 2001, as well. The purpose of this Act is to secure the creation and operation of a forest arboretum in an attempt to create and enhance forest

	genetic resources which are expected to contribute to the development of the national economy. In 2002, **Forest Land Management Act** was enacted so as to prevent frequently occurring reckless land development causing severe damage to forests. It also aims to improve permission process for forest land-use change. In the following year, the **Act on Protection of Baekdudaegan Mountains** was established with a view to conserve and protect the core of forest ecosystem in Korea. **Act on Pine Wilt Disease Prevention** was established in 2006 to devise preventive measures against pine nematode as well as contribute to land conservation on the national level.
Sub-national forest policy statements	
Sub-national Laws (Acts or Codes) on forest	

Other general comments to the table
More detailed information on forest policy and law of Korea is available in web site : http://www.forest.go.kr/ http://english.forest.go.kr/

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	Korea Forest Service Ministry of Food, Agriculture, Forestry and Fisheries	
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	None	
Institution(s) responsible for forest law enforcement	None	

Table 15b – Human resources

- Staff by public forest institutions

Public forest institutions	Human resources within public forest institutions		
	2000	2005	2007
Korea Forest Service	174	221	272
5 National Forest Offices	787	748	726
Forest Aviation Headquarters	97	139	149
National Natural Recreation Forest Office	0	71	75
Local Governments-Forest Officers	4,436	5,525	5,709
Total	**5,494**	**6,704**	**6,931**

- Staff/female by public forest institutions for 2008

Institutions	2008	
	Number	**%Female**
Korea Forest Service-Total staff	272	17%
...of which with university degree or equivalent	149	11%
5 National Forest Offices-Total staff	726	23%
...of which with university degree or equivalent	450	30%
Forest Aviation Headquarters-Total staff	149	12%
...of which with university degree or equivalent	44	18%
National Recreation Forest Office-Total staff	75	23%
...of which with university degree or equivalent	55	29%
Local Governments-Forest Officers-Total staff	n.a.	n.a.
...of which with university degree or equivalent	n.a.	n.a.
Total	**1,920**	**20%**

FRA 2010 Category	Human resources within public forest institutions					
	2000		2005		2007	
	Number	**%Female**	**Number**	**%Female**	**Number**	**%Female**
Total staff	**5,494**	**n.a.**	**6,704**	**n.a.**	**6,931**	**n.a.**
...of which with university degree or equivalent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes: Includes human resources within Korea Forest Service, 5 National Forest Offices, Forest Aviation Headquarters, National Natural Recreation Forest Office, 12 Local Governments(Forest Officers)

15.3 Comments to Table T15

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Minister responsible for forest policy formulation		
Level of subordination of Head of Forestry within the Ministry		
Other public forest agencies at national level		
Institution(s) responsible for forest law enforcement		
Human resources within public forest institutions		

Other general comments to the table

16 Table T16 – Education and research

16.1 FRA 2010 Categories and definitions

Term	Definition
Forest-related education	Post-secondary education programme with focus on forests and related subjects.
Doctor's degree (PhD)	University (or equivalent) education with a total duration of about 8 years.
Master's degree (MSc) or equivalent	University (or equivalent) education with a total duration of about five years.
Bachelor's degree (BSc) or equivalent	University (or equivalent) education with a duration of about three years.
Technician certificate or diploma	Qualification issued from a technical education institution consisting of 1 to 3 years post secondary education.
Publicly funded forest research centers	Research centers primarily implementing research programmes on forest matters. Funding is mainly public or channelled through public institutions.

16.2 National data

16.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Statistical Yearbook of Forestry, Korea Forest Service. Korea.	M		1990 2000 2005	

16.2.2 Original data

Professionals working in publicly funded forest research centres

- Korea Forest Research Institute

FRA 2010 Category	Professionals					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Doctor's degree (PhD)	n.a.	n.a.	n.a.	n.a.	165	8%
Master's degree (MSc) or equivalent	n.a.	n.a.	n.a.	n.a.	32	16%
Bachelor's degree (BSc) or equivalent	n.a.	n.a.	n.a.	n.a.	36	56%

- National Arboretum

FRA 2010 Category	Professionals					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Doctor's degree (PhD)	7	14%	17	12%	17	18%
Master's degree (MSc) or equivalent	7	0%	12	17%	10	20%
Bachelor's degree (BSc) or equivalent	3	0%	2	0%	1	0%

- Korea Forest Seed & Variety Center

FRA 2010 Category	Professionals					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Doctor's degree (PhD)	n.a.	n.a.	n.a.	n.a.	10	0%
Master's degree (MSc) or equivalent	n.a.	n.a.	n.a.	n.a.	5	0%
Bachelor's degree (BSc) or equivalent	n.a.	n.a.	n.a.	n.a.	8	38%

- Provincial Forest Research Institutes(9) : No data applicable

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	211	26%	n.a.	n.a.	n.a.	n.a.
Bachelor's degree (BSc) or equivalent	2,095	43%	1,125	53%	952	51%
Forest technician certificate / diploma	635	52%	318	49%	358	58%

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.	192	8%
Master's degree (MSc) or equivalent	n.a.	n.a.	n.a.	n.a.	47	15%
Bachelor's degree (BSc) or equivalent	n.a.	n.a.	n.a.	n.a.	45	51%

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., and includes students majored in department of horticulture, landscape architecture, and forest of the university.
2. Covers degrees in all sciences, not only forestry. Publicly funded forest research centres include Forest Research Institute, National Arboretum, Forest Seed & Variety Center.

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	includes students majored in department of horticulture, landscape architecture, and forest of the university.	
Professionals working in public forest research centres	Publicly funded forest research centres include Forest Research Institute, National Arboretum, Forest Seed & Variety Center. There are 9 provincial forest research institutes, which are not included because of lack of data.	

Other general comments to the table

17 Table T17 – Public revenue collection and expenditure

17.1 FRA 2010 Categories and definitions

Category	Definition
Forest revenue	All government revenue collected from the domestic production and trade of forest products and services. For this purpose, forest products include: roundwood; sawnwood; wood-based panels; pulp and paper; and non-wood forest products. As far as possible, this should include revenue collected by all levels of government (i.e. central, regional/provincial and municipal level), but it should exclude the income of publicly owned business entities.
Public expenditure	All government expenditure on forest related activities (further defined below).
Operational expenditure *(sub-category to Public expenditure)*	All government expenditure on public institutions solely engaged in the forest sector. Where the forest administration is part of a larger public agency (e.g. department or ministry), this should only include the forest sector component of the agency's total expenditure. As far as possible, this should also include other institutions (e.g. in research, training and marketing) solely engaged in the forest sector, but it should exclude the expenditure of publicly owned business entities.
Transfer payments *(sub-category to Public expenditure)*	All government expenditure on direct financial incentives paid to non-government and private-sector institutions, enterprises communities or individuals operating in the forest sector to implement forest related activities.
Domestic funding	Public expenditure funded from domestic public financial resources, including: retained forest revenue; forest-related funds; and allocations from the national budget (i.e. from non-forest sector public revenue sources).
External funding	Public expenditure funded from grants and loans from donors, non-governmental organisations, international lending agencies and international organisations, where such funds are channelled through national public institutions.

17.2 National data

17.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Statistical Yearbook of Forestry, Korea Forest Service. Korea.	H	Forest revenue Public expenditure	2000 2005	
Data from KFS	M	Transfer payments	2000 2005	

17.2.2 Classification and definitions

National class	Definition
Forest revenue	No clear definition
Operational expenditure	No clear definition
Transfer payments	No clear definition

17.2.3 Original data

Original data are directly filled in T17a and T17b

17.3 Data for Table T17

Table 17a - Forest revenues

FRA 2010 Categories	Revenues (1000 local currency)	
	2000	2005
Forest revenue	306,174,000	496,710,000

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	703,871,000	852,550,000	0	0	703,871,000	852,550,000
Transfer payments	30,449,000	26,981,000	0	0	30,449,000	26,981,000
Total public expenditure	734,320,000	879,531,000	0	0	734,320,000	879,531,000

If transfer payments are made for forest management and conservation, indicate for what specific objective(s) - Please tick all that apply.		
		Reforestation
		Afforestation
	X	Forest inventory and/or planning
		Conservation of forest biodiversity
		Protection of soil and water
	X	Forest stand improvement
		Establishment or maintenance of protected areas
	X	Other, specify below

- Forest tending operation
- Establishment of private arboretum and recreational forests
- Establishment of school forests
- Promoting export of forest products
- Research and development of mushroom cultivation
- Education of forest technician etc.

17.4 Comments to Table T17

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest revenue		
Operational expenditure		
Transfer payments		

Other general comments to the table