GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

Turkey

Rome, 2014

FAO, at the request of its member countries, regularly monitors the world´s forests and their management and uses through the Global Forest Resources Assessment (FRA). This country report is prepared as a contribution to the FAO publication, the Global Forest Resources Assessment 2015 (FRA 2015).
The content and the structure are in accordance with the recommendations and guidelines given by FAO in the document Guide for country reporting for FRA 2015 (http://www.fao.org/3/a-au190e.pdf). These reports were submitted to FAO as official government documents.

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Introductory Text

Place an introductory text on the content of this report

Since the first appearance of Man on the Earth, forests, as a God gift natural resource, provided food, fuel, shelter, fresh water, clean air, medicine, labor and livelihood for people. As ecological systems forests are home to animals, plants, and other living organisms. They contribute to the Earth's carbon and water cycle as well. It is, therefore, a challenging task to manage such an invaluable natural resource and ecosystem.

General Directorate of Forestry is responsible for managing the forests of Turkey according to the principle of sustainability. Forest management plans are main tools for sustainable management. Forest Law numbered

6831 provides that, all forests, either private or public, have to be managed by forest management plans. First forest management plan was prepared in 1917. With the establishment of the State Planning Organization in 1962, a 5 year National Development Plan was prepared for the period of 1963-1967. This period has been a turning point both for national economy and forestry, and forest management plans for whole country were prepared between 1963 and 1972.

The Forest Inventory and forest management planning are the responsibility of the Department of Forest Management and Planning under the General Directorate of Forestry. The department undertakes forest surveys and compiles forest inventory data as the plans are renewed at 10-20 year intervals.

Turkey's forests are mainly state owned and forests cover 27.6% of Turkey's land area and have significant economic, environmental and cultural functions. About 10% of Turkey's populations live in forest villages or forest-neighboring villages where forest resources make a vital contribution to livelihood. Urban dwellers are also taking an increasingly strong interest in forests particularly with respect to their biodiversity, environmental and social functions. Turkish forests are rich with timber species, making Turkey nearly self–sufficient in timber.

According to national data derived from the renewed forest management plans, Turkey has 21.7 million hectares forest area. Total growing stock is 1 494 million m^3 (68.8 m^3 per hectare) standing tree volume over bark, annual increment is 42.2 million m^3 (1.9 m3 per hectare) and annual allowable cut has been determined as 17 million m^3 which has accounted for 40% of the annual increment.

58% of forest land, which is about 12 million ha, is managed for wood production. Turkish forests also host a great diversity of flora with economic importance, including various medicinal, aromatic, industrial and ornamental plants; and provide the major habitats for most species of fauna. In some areas Turkish forests still include some of the last existing vestigial stands and pristine forest ecosystems of their type. Turkish forests also play a vital role in watershed protection and the control of flooding and soil erosion, a major problem in Turkey. These functions are considered in management planning process and about 37% of the forest area has been planned for forest protection, nature conservation, hydrological, erosion control, esthetic, wildlife, game, recreation, national defense, climatic, public health, seed production, and cultural functions. For this reason the area, growing stock and annual increment of the forests have increased, but the annual allowable cut has decreased in recent years, compared to the past years.

This report provides forest inventory data mostly derived from ENVANIS data base which collects and process data from forest management plans as the plans are renewed.

Desk Study?

Check "yes" if this survey is a Desk Study, "no" otherwise	
Desk Study?	no

1. What is the area of forest and other wooded land and how has it changed over time?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

1.1 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 ; 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".
...of which with tree cover *(sub-category)*	Land considered as "Other land", that is predominantly agricultural or urban lands use and has patches of tree cover that span 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. It includes bothe forest and non-forest tree species.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.
Forest expansion	Expansion of forest on land that, until then, was not defined as forest.
...of which afforestation *(sub-category)*	Establishment of forest through planting and/or deliberate seeding on land that, until then, was not defined as forest.
...of which natural expansion of forest *(sub-category)*	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).
Deforestation	The conversion of forest to other land use or the longterm reduction of the tree canopy cover below the minimum 10 percent threshold.
...of which human induced *(sub-category)*	Human induced conversion of forest to other land use or the permanent reduction of the tree canopy cover below the minimum 10 percent threshold.
Reforestation	Natural regeneration or re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.
...of which artificial reforestation *(sub-category)*	Re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.

1.2 National data

1.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	GDF, 1980. Turkish Forestry Inventory: Publications, Series No: 630.	Forest, Other Wooded Land	1972	N/A

2	FAOSTAT	Total land area, Inland water bodies	2011	N/A
3	TUIK (Turkish Statistical Institute), 2008. Agricultural statistic, [online], Available at: http//www.tuik.gov.tr/PreIstatistikTablo.do?istab_id=53 [Accessed 25th June 2013].	Area of Fruit and Olive Trees	2000, 2005, 2010	N/A
4	DEMIRCI, M., KARAGOZ, G., 2012. Forest Inventory Results – 2012. General Directorate of Forestry, Ankara.	Forest, Other Wooded Land	1973, 2004, 2012	Inventory data derived from the renewed Forest Management Plans since 2010.
5	CEYLAN, M., 2012. Work Program for 2012. General Directorate of Forestry, Ankara.	Forest, Other Wooded Land	1973, 1999, 2010	N/A
6	Official Report by Department of Afforestation at GDF.	Afforestation, Erosion Control, Private Afforestation, Artificial Regeneration, Rehabilitation	From 1991 to 2012	N/A
7	Expert Estimation	Natural expansion of forest	1990, 2000, 2005, 2010	N/A
8	National Afforestation and Erosion Control Mobilization Action Plan, 2008-2012. Ankara: Ministry of Environment and Forestry	Afforestation, Erosion Control, Private Afforestation, Rehabilitation	2008, 2009, 2010, 1011, 2012	Action Plan which calls for the implementation of activities over a total area of 2.3 million ha of land. Such activities include rehabilitation of forests, soil erosion control and afforestation.
9	Official Report by Silviculture Department at GDF.	Artificial Regeneration	2008, 2009, 2010, 2011, 2012	This report was used to report artificial regeneration for the period of 2008-2012.
10	ENVANIS Data Base of Forest Management and Planning Department at GDF	Forest, Other Wooded Land	2005, 2010, 2012	ENVANIS data base collects and process data from the forest management plans as the plans are renewed.
11	Data provided by Forest Management and Planning Department at GDF	N/A	1973, 1997	Comparison of the inventory results of 1973 and 1997 by area, growing stock and increment.

1.2.2 Classification and definitions

National class	Definition
Normal forest	The forest land where tree canopy cover is between 11-100%.
Degraded forest	The forest land where tree canopy cover is less than 10%.

High forest	Forest mainly established by seed naturally or by human interference (Usually species which are expected to have a long maturity age and relatively high are chosen).
Coppice forest	Clear-cut forests originating mainly from sprouts or root suckers rather than seed and managed for short rotation period.
Erosion control	Establishment of forest to prevent erosion through planting and/ or deliberate seeding on land.
Private afforestation	Afforestations by persons and legal entities in degraded forestlands, forestlands without trees, treasury lands and privately owned lands.
Artificial regeneration	Regeneration of forest areas, where natural regeneration is not possible or replacement with new species is inevitable, by the planting of seedlings or by the direct planting of seeds.
Rehabilitation	Plantation and protection actions on degraded forest lands for the recovery of forest structure, ecological functioning and biodiversity.
Energy forest	Forests that have the capacity of shooting and managed for short periods of time to meet people's need of fuel are called "Energy Forests". Those forests are comprised of trees that are suitable for burning to provide energy, that have short rotation periods and that generally regenerate themselves through sprouts or root suckers.

1.2.3 Original data

- **Forest area**

Categories	**Area (hectares)**					
	1973	**1999**	**2002**	**2005**	**2010**	**2012**
High forest	**10 934 607**	**14 418 340**	**15 175 389**	**15 548 458**	**16 662 379**	**17 260 592**
… of which normal forest	6 176 899	8 237 753	8 732 761	8 979 339	9 782 513	10 281 728
… of which degraded forest	4 757 708	6 180 587	6 442 628	6 569 119	6 879 866	6 978 864
Coppice forest	**9 264 689**	**6 344 908**	**5 881 054**	**5 700 040**	**4 874 712**	**4 417 542**
… of which normal coppice	2 679 558	1 789 815	1 759 788	1 682 661	1 420 324	1 276 940

… of which degraded coppice	6 585 131	4 555 093	4 121 266	4 017 380	3 454 388	3 140 602
Total forest	**20 199 296**	**20 763 248**	**21 056 443**	**21 248 498**	**21 537 091**	**21 678 134**
… of which normal	*8 856 457*	*10 027 568*	*10 492 549*	*10 662 000*	*11 202 837*	*11 558 668*
… of which degraded	11 342 839	10 735 680	10 563 894	10 586 499	10 334 254	10 119 466

Other land with tree cover

Area of fruit and olive trees was reported as other land with tree cover.

Year	Area (000 hectares)		
	Area of fruit trees	**Area of olive trees**	**Total**
1990	1 348	600	1 948
2000	1 418	600	2 018
2005	1 598	662	2 260
2010	1 748	784	2 532
2011	1 820	798	2 618
2012	1 937	814	2 751

Forest expansion, deforestation, reforestation

Forest establishment activities within the country

Years	Afforestation	Erosion Control	Private Afforestation	Rehabilitation	Energy Forest	Artificial Regeneration	
1988	119 369		23 806	512	61 600	24 246	
1989	113 639		25 555	311	57 668	26 217	

1990	78 884		9 912	647	34 655	22 864	
1991	56 752		2 801	925	26 645	19 832	
1992	24 519		3 660	490	22 531	18 508	
Sub Total	***393 163***	***0***	***65734***	***2 885***	***203 099***	***111 667***	
1998	25 959	3 135	29 430	7 245	10 274	13 502	
1999	11 529	8 739	22 571	2 494	11 048	21 263	
2000	24 494	6 502	30 449	4 189	12 627	13 824	
2001	25 672	4 089	32 780	2 499	13 194	14 658	
2002	28 647	2 093	18 608	2 199	13 100	14 034	
Sub Total	***116 301***	***24 558***	***133 838***	***18 626***	***60 243***	***77 281***	
2003	36 914	5 187	42 042	4 943	14 812	10 531	
2004	34 016	48 013	42 136	8 624	13 577	15 737	
2005	21 439	65 260	47 493	10 503	18 771	9 980	
2006	25 319	285 177	60 776	11 002		13 579	
2007	18 228	313 659	42 984	8 190		12 972	
Sub Total	**135 916**	**717 296**	**235 431**	**43 262**	**47 160**	**62 799**	
2008	39 467	53 917	9 034	336 910		18 471	
2009	46 872	50 352	9 535	374 728		14 366	
2010	41 857	61 401	17 306	346 902		8 620	
2011	39 964	67 088	8 566	344 570		10 068	
2012	42 009	83 131	4 944	347 719		12 356	
Sub Total	**210 169**	**315 889**	**49 385**	**1 750 829**		**63 881**	

Change in forest area by years

Years	**Categories**	**Area (ha)**	**Change in normal forest by years**	**5 years average**
2002	Forest	21.056.443		

	… of which normal	***10.492.549***		
	… of which degraded	10.563.894		
2003	Forest	21.125.052	**98.963**	**56.340**
	… of which normal	***10.591.512***		
	… of which degraded	10.533.540		
2004	Forest	21.188.747	**29.709**	
	… of which normal	***10.621.221***		
	… of which degraded	10.567.526		
2005	Forest	21.248.499	**40.779**	
	… of which normal	***10.662.000***		
	… of which degraded	10.586.499		
2006	Forest	21.295.170	**51.753**	
	… of which normal	***10.713.753***		
	… of which degraded	10.581.417		
2007	Forest	21.328.732	**60.498**	
	… of which normal	***10.774.251***		
	… of which degraded	10.554.481		
2008	Forest	21.363.214	**80.958**	**156.883**
	… of which normal	***10.855.209***		
	… of which degraded	10.508.005		
2009	Forest	21.389.783	**117.300**	

	… of which normal	***10.972.509***		
	… of which degraded	10.417.274		
2010	Forest	21.537.091	**230.328**	
	… of which normal	***11.202.837***		
	… of which degraded	10.334.254		
2011	Forest	21.607.613	**177.915**	
	… of which normal	***11.380.753***		
	… of which degraded	10.226.860		
2012	Forest	21.678.134	**177.915**	
	… of which normal	***11.558.668***		
	… of which degraded	10.119.466		

1.3 Analysis and processing of national data

1.3.1 Adjustment

Data for total land area and inland water bodies are aligned with FAOSTAT 2011 data. Other land was calculated as the difference between total land area from FAOSTAT 2011 data and the sum of forest plus other wooded land.

Categories	**Area (000 hectares)**					
	1973	**1999**	**2002**	**2005**	**2010**	**2012**
Forest	20 199	20 764	21 057	21 248	21 537	21 678
… of which normal	*8 856*	*10 028*	10 493	*10 662*	*11 203*	*11 559*

… of which degraded	*11 343*	10 736	10 564	*10 586*	*10 334*	*10 119*
Other land	56 764	56 199	55 906	55 715	55 426	55 285
Inland water bodies	1 393	1 393	1 393	1 393	1 393	1 393
TOTAL	**78 356**	**78 356**	**78 356**	**78 356**	**78 356**	**78 356**

1.3.2 Estimation and forecasting

Estimation and forecasting of forest area for the FRA reference years

Data for 1990 was estimated using linear interpolation of the values of 1973 and 1999. Values of 1999 and 2002 were used to estimate 2000 data. Observed data for 2005 and 2010 was used without any estimation. Data for 2015 was forecasted using linear extrapolation of values of 2010 and 2012.

Categories	**Area (000 hectares)**					
	1973	**1999**	**2002**	**2005**	**2010**	**2012**
Forest	20 199	20 764	21 057	21 248	21 537	21 678
… of which normal	***8 856***	***10 028***	***10 493***	***10 662***	***11 203***	***11 559***
… of which degraded	*11 343*	*10 736*	*10 564*	*10 586*	*10 334*	*10 119*
Other land	56 764	56 199	55 906	55 715	55 426	55 285

Estimated values for 1990 and 2000 and forecasted values for 2015:

Categories	**Area (000 hectares)**				
	1990	**2000**	**2005**	**2010**	**2015**
Forest	20 568	20 862	21 248	21 537	21 845

… of which normal	9 622	10 183	10 662	11 203	11 715
… of which degraded	10 946	10 679	10 586	10 334	10 130
Other land	56 395	56 101	55 715	55 426	55 118

Estimation and forecasting of the area for other land with tree cover for the FRA reference years

Observed data of other land with tree cover for reporting years of 1990, 2000, 2005 and 2010 was used for the FRA reference years. Data for 2015 was forecasted using linear extrapolation of values of 2000 and 2012.

Year	**Area (000 hectares)**		
	Area of fruit trees	**Area of olive trees**	**Total**
1990	1 348	600	1 948
2000	1 418	600	2 018
2005	1 598	662	2 260
2010	1 748	784	2 532
2011	1 820	798	2 618
2012	1 937	814	2 751
2015	2 067	868	2 934

1.3.3 Reclassification

National definition for “normal forest” seems to be closer to the FRA “forest” definition. So that category “normal forest” was used to report FRA 2015 category “forest”. “Degraded forest” was used to report FRA 2015 category “other wooded land”.

The same reclassification matrix was used for all reporting years.

Reclassification matrix for forest area

National classes	**1 000 ha**	**FRA Categories**				
		Forest	**OWL [1]**	**Other land**	**Total**	**OLWTC [2]**

Normal forest	11 715	100%			100%	
Degraded forest	10 130		100%		100%	
Other land	55 118			100%	100%	5.323%

Result of reclassification

National classes	**1 000 ha**	**FRA Categories**				
		Forest	**OWL [1]**	**Other land**	**Total**	**OLWTC [2]**
Normal forest	**11 715**	**11 715**			**11 715**	
Degraded forest	**10 130**		**10 130**		**10 130**	
Other land	**55 118**			**55 118**	**55 118**	**2 934**

[1] OWL = Other wooded land

[2] OLWTC = Other land with tree cover.

Forest expansion, deforestation, reforestation

Afforestation and reforestation data were calculated with the help of the following reclassification matrix and original data. Reclassification matrix was updated and renewed to show real condition better.

Reclassification matrix for afforestation and reforestation

Categories	**Afforestation**	**Reforestation**	**OWL**
Afforestation	70%		30%
Erosion control	20%		80%
Private Afforest	10%		90%
Artificial Regeneration		80%	20%
Rehabilitation	15%	10%	75%
Energy Forest		20%	80%

Results of reclassification forafforestation and reforestation

	Years	Afforestation	Erosion control	Private afforestation	Rehabilitation	Energy forest	Artificial regeneration	
	1990	78 633	0	13 147	577	40 620	22 333	
	2000	23 260	4 912	26 768	3 725	12 049	15 456	
	2005	27 183	143 459	47 086	8 652	9 432	12 560	
	2010	42 034	63 178	9 877	350 166		12 776	
Affore-station	Reclass.1990	55 043		1 315	87			**56 444**
	Reclass.2000	16 282	982	2 677	559			**20 500**
	Reclass.2005	19 028	28 692	4 709	1 298			**53 726**
	Reclass.2010	29 424	12 636	988	52 525			**95 572**
Refore-station	Reclass.1990				58	8 124	17 866	**26 048**
	Reclass.2000				373	2 410	12 365	**15 147**
	Reclass.2005				865	1 886	10 048	**12 800**
	Reclass.2010				35 017		10 221	**45 237**

1.4 Data

Table 1a

Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
CFRQ	Forest	9622	10183	10662	11203	11715
CFRQ	Other wooded land	10946	10679	10586	10334	10130
CFRQ	Other land	56395	56101	55715	55426	55118
CFRQ	... of which with tree cover	1948	2018	2260	2532	2934
CFRQ	Inland water bodies	1393	1393	1393	1393	1393
	TOTAL	78356.00	78356.00	78356.00	78356.00	78356.00

Table 1b

Categories		Annual forest establishment / loss (000 hectares per year)				...of which of introduced species (000 hectares per year)			
		1990	2000	2005	2010	1990	2000	2005	2010
CFRQ	Forest expansion	N/A	N/A	56.34	156.89	N/A	N/A	N/A	N/A
CFRQ	... of which afforestation	56.44	20.5	53.73	95.57	N/A	N/A	N/A	N/A
CFRQ	... of which natural expansion of forest	N/A	N/A	2.61	61.32	N/A	N/A	N/A	N/A
CFRQ	Deforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which human induced	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CFRQ	Reforestation	26.05	15.15	12.8	45.24	N/A	N/A	N/A	N/A
CFRQ	... of which artificial	26.05	15.15	12.8	45.24	N/A	N/A	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Forest	Tier 2	Tier 2
Other wooded land	Tier 2	Tier 2
Forest expansion	Tier 1	Tier 1
Deforestation	Tier 1	Tier 1
Reforestation	Tier 1	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
• Forest • Other wooded land • Afforestation • Reforestation • Natural expansion of forest • Deforestation	**Tier 3** : Data sources: Either recent (less than 10 years ago) National Forest Inventory or remote sensing, with ground truthing, or programme for repeated compatible NFIs **Tier 2** : Data sources: Full cover mapping / remote sensing or old NFI (more than 10 years ago) **Tier 1** : Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other

1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends

Forest	1 - National definition for “normal forest” was used to report FRA 2015 category “forest”. 2 - Observed data was used for 2010. 3 - Original data for 1996 was not used in the report and because of the interpolation; some small changes were made in the values of 1990, 2000 and 2005.	Increase in forest area caused by: 1 - Migration from rural to urban areas, 2 - Less goat and sheep grazing in forest lands compared to the past, 3 - Management approach of multi-functional use of forests, 4 - Conversion of coppices into high forests, 5 - Afforestation and reforestation
Other wooded land	“Degraded forest” was used to report FRA 2015 category “other wooded land”.	OWL can be less than reported figure in 2015 because of the rehabilitation and afforestation activities made by Forest Service.
Other land	Other land was calculated as the difference between total land area from FAOSTAT 2011 data and the sum of forest plus other wooded land.	N/A
Other land with tree cover	- Area of fruit and olive trees was reported. - Observed data was used for 2010.	There is no data for poplar areas and scattered trees.
Inland water bodies	Data source is FAOSTAT 2011.	N/A
Forest expansion	Data source: Official Report by Department of Afforestation. Reclassification matrix was updated and renewed to show real condition better. Forest expansion data for 2005 and 2010 was calculated by calculating the increase in forest area by years. Natural expansion of forest for 2005 and 2010 was calculated as the difference between forest expansion data and afforestation data.	Reasons of high increase in forest expansion data for 2010 are implementation of the Afforestation and Erosion Control Mobilization Action Plan (2008–2012) and taking measures to increase crown cover of degraded forest areas (OWL). 87 thousand hectares of OWL became forest between 2007 and 2012.
Deforestation	Deforestation data is insufficient.	N/A
Reforestation	N/A	Energy Forest hasn't been established since 2005 and artificial regeneration applications have been reduced according to development of sustainable forest management concept.

Other general comments to the table
Official report of Silviculture Department was used to report artificial regeneration for the period of 2008-2012.

2. What is the area of natural and planted forest and how has it changed over time?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

2.1 Categories and definitions

Term	Definition
Naturally regenerated forest	Forest predominantly composed of trees established through natural regeneration.
Naturalized introduced species	Other naturally regenerated forest where the tree species are predominantly non-native and do not need human help to reproduce/maintain populations over time.
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).
Category	**Definition**
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.
...of which of introduced species *(sub-category)*	Other naturally regenerated forest where the trees are predominantly of introduced species.
...of which naturalized *(sub-sub category)*	Other naturally regenerated forest where the trees are predominantly of naturalized introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
...of which of introduced species *(sub-category)*	Planted forest where the planted/seeded trees are predominantly of introduced species.
Mangroves	Area of forest and other wooded land with mangrove vegetation.
...of which planted *(sub-category)*	Mangroves predominantly composed of trees established through planting.

2.2 National data

2.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Official Report by Department of Afforestation at GDF	Afforestation, Erosion Control, Private Afforestation, Artificial Regeneration, Rehabilitation, Energy Forest	From 1947 to 2012	N/A
2	ENVANIS Data Base of Forest Management and Planning Department at GDF	Introduced tree species	2005, 2010, 2012	ENVANIS data base collects and process data from the forest management plans as the plans are renewed.

3	Protected Areas Data of Ministry of Forest and Water Affairs	Nature Reserve Areas, Nature Parks, Natural Monuments, Wildlife Development Areas, Special Environmental Protection Areas, Protection Forests	2012	Stand type map of GDF was intersected with the Protected Areas Data of Ministry of Forest and Water Affairs by #NAN, Çi#dem.
4	Official Report by Forest Tree Seeds and Tree Breeding Research Directorate at GDF	Gene conservation forests	2012	N/A
5	National Parks Data of GDF under Ministry of Forest and Water Affairs	National Parks	2012	Stand type map was intersected with the National Parks Data of GDF by MEYDAN KOCAMAN, Tülay.

2.2.2 Classification and definitions

National class	Definition
Erosion control, private afforestation, artificial regeneration, rehabilitation, energy forest	See section 1.2.2.
Nature reserve areas	Tracts of nature that contain outstanding examples of rare, endangered or vulnerable ecosystems, species and natural phenomena having importance for science and education, that require absolute conservation and that are allocated exclusively for purposes of science and education.
National parks	A tract of nature with conservation, recreation and tourism areas having rare natural and cultural resource values of national or international significance in scientific and aesthetical terms.
Nature parks	Tracts of nature that have a characteristic plant cover and wildlife and that are suitable for public recreation and entertainment within the landscape integrity.
Natural monuments	Tracts of nature that have characteristically formed by nature or natural phenomena and scientific value and that are protected under the same principles as National Parks.
Wildlife development areas	These areas possess wildlife values and in which the habitats requiring conservation together with the plant and animal species are absolutely protected and maintained.
Special environmental protection areas	Article 9 of the Environment Law provides that land and water areas of ecological importance on a national or global scale which are vulnerable to environmental pollution and degradation shall be designated as Special Environmental Protection Areas.
Protection forests	Forest area designated primarily for protection of soil and water, according to Regulation on Allocation and Administration of Protection Forests.
Gene conservation forests	These forests are selected for protecting genetic diversity of forest tree species in their natural habitat and managed by special plans.

Wetland	Areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.
Natural sites	Located on or under the ground, or under the water, that require conservation for their rarity or special characteristics and beauties, dating back to geological, pre-historical or historical times (Law for the Protection of Cultural and Natural Assets).

2.2.3 Original data

Planted forest

Total of forest establishment activities since 1947 is given in following table. 2005 data was renewed with better data. Observed data for 2010 was used for 2010 reporting without any estimation.

Years	Afforestation	Erosion control	Private afforestation	Artificial regeneration	Rehabilitation	Energy forest
1990	1 459 294	253 639	2 453	429 426	0	396 195
2000	1 763 472	418 855	24 237	645 651	18 376	549 424
2005	1 910 160	601 914	53 005	710 591	143 018	622 878
2010	2 081 903	871 344	108 072	778 599	1 800 394	622 878
2012	2 163 876	1 021 563	121 582	801 023	2 492 683	622 878

Introduced species

Area of *Pinus pinaster* , *Pinus radiata* and *Eucalyptus sp.* was reported as introduced tree species for 2005 and 2010 reporting. Old data was replaced with new and better data for 2010. Observed data of 2012 was used to report 2015.

Introduced species	Forest area (ha)		Other wooded land (ha)	
	2010	2012	2010	2012
Pinus pinaster	66 653	54 461	8 914	9 207
Pinus radiata	58	58		
Pseudotsuga menziesii	2	84		3
Eucalyptus sp.	2 289	2 398	130	130

Acacia cyanophylla	1 885	1 885	467	467
Robinia pseudoacacia	128	65		
Total	71 014	58 951	9 511	9 807

Primary forest

2004 and 2005 data was taken from Section 3.2.3.2 of FRA 2010 Country Report. Data on "Clonal Seed Orchards" and "Seed Stands" was excluded because of not being suitable. 2012 data for Nature Reserve Areas, Nature Parks, Natural Monuments, Wildlife Development Areas, Special Environmental Protection Areas, Protection Forests, Wetlands, and Natural Sites was provided by GIS department under Ministry of Forest and Water Affairs (by İNAN, Çiğdem). 2012 data for National Parks was provided by GIS department under GDF (by MEYDAN KOCAMAN, Tülay). National Parks data for 2004 and 2005 was estimated.

National Categories	**2004**	**2005**	**2012**	
	ha			
Nature Reserve Areas (I – IUCN)	22 060	22 307	16 536	
National Parks (II – IUCN)	151 397	155 102	181 035	
Nature Parks (V – IUCN)	17 787	17 986	24 538	
Natural Monuments (III – IUCN)	127	128	264	
Wildlife Development Areas	402 435	406 936	410 488	
Special Environmental Protection Areas	66 349	67 091	67 995	
Protection Forests	106 288	107 477	105 061	
Gene Conservation Forests	33 789	34 167	37 098	

Wetlands			47 538	wetlands figures added also to 2004 and 2005 data
Natural Sites	461	466	214 173	excluded from the calculations as they also include cultural areas
FRA 2015 Primary Forest	847,770	858,732	890,553	

2.3 Analysis and processing of national data

2.3.1 Adjustment

Not needed.

2.3.2 Estimation and forecasting

Calculation of planted forest

Artificial regeneration and private afforestation data for 2015 was forecasted using linear extrapolation of values of 2005 and 2012. Afforestation, erosion control and rehabilitation data for 2015 was forecasted by adding related data from Combating Erosion Action Plan to observed data in 2012.

Years	Afforestation	Erosion control	Private afforestation	Artificial regeneration	Rehabilitation	Energy forest
2015	2 313 876	1 261 563	150 972	839 780	2 810 683	622 878

Introduced species

Observed data of 2012 was used to report 2015.

Introduced species	Forest area (ha)

	2010	2015
Total	71 014	58 951

Calculation of primary forest

Primary forest data for 2015 was forecasted using linear extrapolation of values of 2005 and 2012. 2010 data was estimated using linear interpolation of values of 2005 and 2012. 2004 and 2005 data was used to forecast 2000 and 1990 data.

	ha						
	1990	2000	2004	2005	2010	2012	2015
FRA 2015 Primary Forest	826	837	848	859	881	891	913
			-11	4.55			

Other naturally regenerating forest

Other naturally regenerating forest was calculated by subtracting primary forest and planted forest data from total area for 1990, 2000, 2005, 2010, and 2015.

2.3.3 Reclassification

Calculation of planted forest

Planted forest data were calculated with the help of the following table and original data.

Reclassification matrix for planted forest

Categories	Planted forest
Afforestation	70%
Erosion control	20%
Private Afforest	10%
Artificial Regeneration	80%
Rehabilitation	25%

Energy Forest	20%

Results of reclassification forplanted forest

Years	Afforestation	Erosion control	Private afforestation	Artificial regeneration	Rehabilitation	Energy forest	
1990	1 459 294	253 639	2 453	429 426	0	396 195	
2000	1 763 472	418 855	24 237	645 651	18 376	549 424	
2005	1 910 160	601 914	53 005	710 591	143 018	622 878	
2010	2 081 903	871 344	108 072	778 599	1 800 394	622 878	
2015	2 313 876	1 261 563	150 972	839 780	2 810 683	622 878	
Reclassification (%)	**70%**	**20%**	**10%**	**80%**	**25%**	**20%**	
FRA 1990	1 021 506	50 728	245	343 541		79 239	**1 495 259**
FRA 2000	1 234 430	83 771	2 424	516 521	4 594	109 885	**1 951 625**
FRA 2005	1 337 112	120 383	5 301	568 473	35 755	124 576	**2 191 598**
FRA 2010	1 457 332	174 269	10 807	622 879	450 099	124 576	**2 839 961**
FRA 2015	1 619 713	252 313	15 097	671 824	702 671	124 576	**3 386 193**

2.4 Data

Table 2a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
CFRQ	Primary forest	826	837	859	881	913
CFRQ	Other naturally regenerated forest	7301	7394	7611	7482	7416
CFRQ	... of which of introduced species	N/A	N/A	N/A	N/A	N/A

CFRQ	... of which naturalized	N/A	N/A	N/A	N/A	N/A
CFRQ	Planted forest	1495	1952	2192	2840	3386
CFRQ	... of which of introduced species	N/A	N/A	73.7	71	59
TOTAL		9622.00	10183.00	10662.00	11203.00	11715.00

Table 2b

Primary forest converted to (000 ha)								
1990-2000			2000-2010			2010-2015		
Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2c

Categories	Area (000 hectares)				
	1990	2000	2005	2010	2015
Mangroves (forest and OWL)	0	0	0	0	0
... of which planted	0	0	0	0	0

Tiers

Category	Tier for status	Tier for reported trend
Primary forest	Tier 1	Tier 1
Other naturally regenerated forest	Tier 1	Tier 1
Planted forest	Tier 1	Tier 1
Mangroves	Tier 3	Tier 3

Tier Criteria

Category	Tier for status	Tier for reported trend
Primary forest/Other naturally regenerated forest/Planted forest	**Tier 3** : Data sources: Recent (less than 10 years) National Forest Inventory or remote sensing with ground truthing or data provided by official agencies or programme for repeated compatible NFIs **Tier 2** : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years) **Tier 1** : Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	There is no specific survey to identify Primary Forest in Turkey, thus protected areas were evaluated as Primary Forest in this report.	N/A
Other naturally regenerating forest	Other naturally regenerating forest was calculated by subtracting primary forest and planted forest data from total area for 1990, 2000, 2005, 2010, and 2015.	N/A
Planted forest	Afforestation, erosion control and rehabilitation data for 2015 was calculated by adding related data from Combating Erosion Action Plan to observed data in 2012.	High increase in planted forest data for 2010 is due to implementation of the Afforestation and Erosion Control Mobilization Action Plan (2008–2012) and for 2015 is due to Combating Erosion Action Plan (2013-2017).
Mangroves	Not applicable.	N/A

Other general comments to the table
In Turkey, there is no National Forest Inventory application thus forest area data is being derived from ENVANIS data base which collects and process data from forest management plans as the plans are renewed. Due to implementation of Afforestation and Erosion Control Mobilization Action Plan, around 1 million hectares land was planted between 2003 and 2012. The area of those planted lands could not be included to the forest area data because of not renewing management plans covering those areas. As soon as management plans renewed, those planted lands will be included to forest area data. For that reason the rate of the planted forest, for 2010 and 2015 reporting, might be seen as higher.

3. What are the stocks and growth rates of the forests and how have they changed?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

3.1 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm, excluding branches.
Net Annual Increment (NAI)	Average annual volume of gross increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for "Growing stock".
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 2 mm 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.
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 soil depth of 30 cm.

3.2 National data

3.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Guide for Country Reporting for FRA 2015	BCEFs, R	1990, 2000, 2005, 2010, 2015	Biomass stock and carbon stock data was estimated with the help of Appendix 5, tables 5.2, 5.3, 5.4, 5.9 and 5.10 in the Guide for Country Reporting for FRA 2015.
2	Table 1a, CFRQ/FRA 2015	Forest, other wooded land	1990, 2000, 2005, 2010, 2015	N/A

3	DEMIRCI, M., KARAGOZ, G., 2012. Forest Inventory Results – 2012. General Directorate of Forestry, Ankara.	Growing stock	2012	N/A
4	ENVANIS Data Base of Forest Management and Planning Department at GDF	Growing stock	2005, 2010, 2012	N/A
5	Data provided by Forest Management and Planning Department at GDF	Growing stock, growing stock composition	2000	Inventory results of growing stock, area, increment, and allowable cut by tree species for 2000.
6	Data provided by Forest Management and Planning Department at GDF	Growing stock composition	1997	Inventory results of growing stock, area, and increment by tree species for 1997.
7	Data provided by Forest Management and Planning Department at GDF	Net annual increment, natural losses	1989-2012	Biotic (insect and fungus) and abiotic (storm, snow, and fire) damage data which derived from salvage harvesting report was used to calculate natural losses.
8	Data provided by Forest Management and Planning Department at GDF	Net annual increment,	1973-1997	Comparison of the inventory results of 1973 and 1997 by area, growing stock and increment.
9	Data provided by Forest Management and Planning Department at GDF	Net annual increment,	2000	Inventory results of tree species by area, growing stock and increment.
10	Expert estimation	Natural losses	1990, 2000, 2005, 2010	National data on natural losses is not by species types thus expert estimation was used to calculate natural losses by tree species types (Ozel, A.).

3.2.2 Classification and definitions

National class	Definition
Growing stock	Volume over bark of all living trees with a minimum diameter of 8 cm at breast height, including stumps and excluding branches.
N/A	N/A
N/A	N/A
N/A	N/A

3.2.3 Original data

Growing stock

Category	Growing stock volume (million m ^{3} over bark)											
	Forest						Other wooded land					
	1973	1997	2000	2005	2010	2012	1973	1997	2000	2005	2010	2012
Total growing stock	847	1 092	1 132	1 209	1 347	1 417	88	87	82	87	81	77
... of which coniferous	n.a.	739	772	827	911	942	n.a.	44	44	51	49	47
... of which broadleaved	n.a.	353	360	382	436	475	n.a.	43	38	36	32	30

Growing stock composition

Observed data was used for 1997, 2000, 2005, and 2010.

Category / Species name			Growing stock in forest (million cubic meters)			
Rank	Scientific name	Common name	1997	2000	2005	2010
1 st	*Pinus nigra* Arnold. subsp. *Pallasiana*	Crimean pine	240	251	284	315
2 nd	*Fagus orientalis* Lipsky.	Beech	191	192	253	304
3 rd	*Pinus brutia* Ten .	Turkish pine	219	233	251	262
4 th	*Pinus sylvestris* L.	Scots pine	104	107	113	122
5 th	*Abies* sp. Mill.	Fir	102	105	92	111
6 th	*Quercus sp.*	Oak	118	123	111	108
7 th	*Picea sp.*	Spruce	24	41	52	61

8 th	*Cedrus libani* A.Rich.	Cedar	23	23	25	27
9 th	*Alnus sp.*	Alder	5	5	5	11
10 th	*Castanea sativa* Mill.	Chestnut	8	8	6	8
11 th	*Pinus pinaster* Aiton	Maritime pine	1	1	5	6
12 th	*Juniperus sp.*	Juniper	8	8	5	5
13 th	*Carpinus sp.*	Hornbeam	8	8	1	2
Remaining			41	27	6	5
TOTAL			**1 092**	**1 132**	**1 209**	**1 347**

Net annual increment

Net annual increment data was calculated as gross annual increment minus natural losses data. Natural losses was calculated as the total of biotic (insect and fungus) and abiotic (storm, snow, and fire) damage data which derived from salvage harvesting report provided by Forest Management and Planning Department at GDF. No data is available for 1988. Detailed data which include biotic and abiotic damage is available for 1997, 1998 and 2000-2012. Estimation of biotic and abiotic damage for the period 1989-1996 and 1999 was carried out through multiplying the average of detailed data on abiotic and biotic damage (%62) by the total of salvage harvesting data. Conversion factor of 0.75 was used to convert stere to m^3.

Year	**Total of salvage harvesting data**	**Abiotic agents**			**Biotic agents**		**TOTAL**
		Fire	**Storm**	**Snow**	**Insect**	**Fungus**	
		1,000 m³					
1989	1 586						983
1990	1 162						721
1991	1 036						643
1992	1 854						1 149
1993	1 983						1 229
1994	1 759						1 091

1995	3 763						2 333
1996	2 607						1 617
1997	1 709	223	158	267	324		973
1998	1 647	225	224	127	197	3	776
1999	1 396						865
2000	1 932	910	298	137	182	8	1 536
2001	1 082	190	229	60	192	13	684
2002	5 076	269	360	3 449	309	29	4 417
2003	1 965	345	242	605	265	8	1 466
2004	2 739	285	378	1 112	453	2	2 231
2005	1 813	263	152	356	377	9	1 157
2006	1 574	435	111	203	321	5	1 075
2007	2 169	597	150	276	398	8	1 430
2008	5 121	2 145	166	153	1 245	9	3 719
2009	4 181	1 086	220	494	1 134	11	2 945
2010	2 721	223	172	287	317	33	1 033
2011	3 248	156	167	771	114	38	1 246
2012	3 114	269	243	471	79	19	1 080

Annual increment data by species type is not available for the period of 1974-1996 and 1998-1999.

Years	**Annual increment (1,000 m ^{3})**		
	Coniferous	**Broadleaved**	**Total**
1973	15 593	10 012	25 605
1997	18 999	11 406	30 405
2000	20 436	11 497	31 933
2002	21 764	11 286	33 050

2003	22 057	11 453	33 510
2004	22 235	11 600	33 835
2005	22 408	11 736	34 144
2006	22 896	11 858	34 754
2007	23 212	11 768	34 980
2008	23 451	11 627	35 078
2009	24 129	12 028	36 157
2010	25 050	12 750	37 801
2012	26 150	13 870	40 020

Biomass stockand carbon stock

There is no national data for biomass stock and carbon stock. Biomass stock and carbon stock data was estimated with the help of Appendix 5, tables 5.2, 5.3, 5.4, 5.9 and 5.10 in the Guide for Country Reporting for FRA 2015 (See 3.3.2. Estimation and forecasting).

3.3 Analysis and processing of national data

3.3.1 Adjustment

Growing stock

National data collection includes trees from 8 centimetres at breast height in the growing stock, thus there is no need for adjustment.

Growing stock composition

Adjustment not needed for growing stock composition.

Net annual increment

Adjustment not needed for net annual increment.

Biomass stockand carbon stock

Not needed.

3.3.2 Estimation and forecasting

Growing stock

1973 was renewed with better data. Observed data was used for 1997, 2000, 2005 and 2010. 1990 data was calculated using linear interpolation of the values of 1973 and 1997. The ratio of coniferous and broadleaved tree species data of 1997 was used to calculate the growing stock data of coniferous and broadleaved tree species for 1990. Data for 2015 was forecasted using linear extrapolation of values of 2005 and 2012.

Category	Growing stock volume (million m^3 over bark)									
	Forest					Other wooded land				
	1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
Total growing stock	1021	1132	1209	1347	1506	87	82	87	81	73
... of which coniferous	691	772	827	911	991	44	44	51	49	45
... of which broadleaved	330	360	382	436	515	43	38	36	32	27

Growing stock composition

Observed data was used for 2000, 2005, and 2010. Total growing stock data for 1990 was calculated using linear interpolation of the values of 1973 and 1997. Composition of growing stock data for 1990 was calculated by using the rates of growing stock of tree species to total growing stock in 1997.

Growing stock in forest (1997)			Growing stock in forest (1990)		
Rank	Common name	(million m^3)	Rank	Common name	(million m^3)
1	Crimean pine	240	1	Crimean pine	224
2	Turkish pine	219	2	Turkish pine	205
3	Beech	191	3	Beech	179
4	Oak	118	4	Oak	110
5	Scots pine	104	5	Scots pine	97
6	Fir	102	6	Fir	95

7	Spruce	24	7	Spruce	23
8	Cedar	23	8	Cedar	22
9	Hornbeam	8	9	Hornbeam	8
10	Chestnut	8	10	Chestnut	7
11	Juniper	8	11	Juniper	7
Remaining		47	Remaining		44
TOTAL		**1 092**	**TOTAL**		**1 021**

Net annual increment

Natural losses data for 1990 is average value of 1989, 1990 and 1991. Data for 2015 was forecasted using linear extrapolation of values of 2000 and 2010. Natural losses data by species types is not available thus following table was used to estimate natural losses by tree species types.

Year	**Total natural losses**	**Coniferous**	**Broadleaved**	**Coniferous**	**Broadleaved**
	(1,000 m³)	**Percentage**		**(1,000 m³)**	
1990	874	0,7788	0,2209	681	193
2000	1 656	0,7788	0,2209	1 290	366
2005	1 472	0,6891	0,3105	1 014	457
2010	2 005	0,6555	0,3444	1 314	691
2015	2 179	0,6555	0,3444	1 428	750

Annual increment data for 2010 is average value of 2008, 2009, 2010 and 2012. Data for 2015 was forecasted using linear extrapolation of values of 2000 and 2010. 2000 data is average value of 2000 and 2002. Data for 1990 was estimated using linear interpolation of the values of 1973 and 1997.

Category	**Annual increment (1,000 m ^{3})**				
	1990	**2000**	**2005**	**2010**	**2015**
Annual increment	29 005	32 492	34 245	37 264	39 650

... of which coniferous	18 006	21 100	22 562	24 695	26 493
... of which broadleaved	10 999	11 392	11 683	12 569	13 157

Calculation of net annual increment:

Coniferous and broadleaved data for 2015 was estimated multiplying total forest area by the rates for 2010. Coniferous and broadleaved data for 1990 and 2000 was estimated as total forest area data of related years multiplied by the rates for 2005.

Category	**1990**	**2000**	**2005**	**2010**	**2015**
Annual increment	29 005	32 492	34 245	37 264	39 650
... of which coniferous	*18 006*	*21 100*	*22 562*	*24 695*	*26 493*
... of which broadleaved	*10 999*	*11 392*	*11 683*	*12 569*	*13 157*
Natural losses	874	1 656	1 472	2 005	2 179
... of which coniferous	*681*	*1 290*	*1 014*	*1 314*	*1 428*
... of which broadleaved	*193*	*366*	*457*	*691*	*750*
Net annual increment	28 131	30 836	32 773	35 259	37 471
... of which coniferous	*17 325*	*19 810*	*21 548*	*23 381*	*25 065*
... of which broadleaved	*10 806*	*11 026*	*11 226*	*11 878*	*12 407*
Forest area	9 622	10 183	10 662	11 203	11 715
... of which coniferous	*6 401*	*6 774*	*7 093*	*7 396*	*7 734*
... of which broadleaved	*3 221*	*3 409*	*3 569*	*3 807*	*3 981*
Net annual increment per hectare	**2.92**	**3.03**	**3.07**	**3.15**	**3.20**

... of which coniferous	*1.94*	*2.01*	*2.04*	*2.08*	*2.11*
... of which broadleaved	*0.98*	*1.02*	*1.03*	*1.07*	*1.09*

Biomass stock

Estimation of above-ground and below-ground biomass:

The following formulas were used to estimate above-ground and below-ground biomass:

AGB = GS × BCEF (1a)

BGB = AGB × R (2)

Where:

AGB = Above-ground biomass (tonnes)

BGB = Below-ground biomass (tonnes)

GS = Growing stock (volume, m^3 over bark)

BCEF = Biomass conversion and expansion factor (above-ground biomass / growing stock, (tonnes/m^3)) (Appendix 5, tables 5.4 in the Guide for Country Reporting for FRA 2015).

R = Root-shoot ratio (below-ground biomass / above-ground biomass) (Appendix 5, table 5.3 in the Guide for Country Reporting for FRA 2015).

Total growing stock data of broadleaved and coniferous tree species was taken from Table 3a.

Category	Growing stock volume (million m^3 over bark)									
	Forest					Other wooded land				
	1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
Total growing stock	1021	1132	1209	1347	1506	87	82	87	81	73

... of which coniferous	691	772	827	911	991	44	44	51	49	45
... of which broadleaved	330	360	382	436	515	43	38	36	32	27

Biomass expansion factors and root to shoot ratios for the tree species were taken from the Appendix 5, tables 5.3 and 5.4 respectively regarding the geographical climatic regions of Turkey from the map of Global Ecological Zones, Based On Observed Climate and Vegetation Patterns (FAO, 2001) given in the Guide for Country Reporting for FRA 2015.

Since Turkey takes the place in the mountain systems of temperate zone (TeM) in this map, average growing stock levels for the coniferous and broadleaved tree species were calculated in order to choose of BCEFs before determining the coefficients.

According to 2010 data, average growing stock levels are 123 m^3 /ha and 114 m^3 /ha for the coniferous and broadleaved tree species respectively. With regard to these values and table 5.4, BCEFS is 1.05 for the hardwoods and 0.75 for the conifers.

Average growing stocks on the other wooded lands (OWL) are estimated as 8.5 m^3 /ha for the coniferous and 7 m^3 /ha for the broadleaved tree species (2010 data). Thus BCEFS is 3.0 for hardwoods and conifers.

Above ground biomass per hectare is needed in order to choose root-shoot ratio (R) values. Formula 1a is used for calculation of R values as shown below:

AGB = GS × BCEF

AGB = 123 x 0.75 = 92.25 tonnes/ha for the coniferous forests: (R: 0.29)

AGB = 114 x 1.05 = 119.7 tonnes/ha for the hardwood forests: (R: 0.23)

AGB = 8.5 x 3.0 = 25.5 tonnes/ha for the coniferous OWL: (R: 0.40)

AGB = 7 x 3.0 = 21 tonnes/ha for the hardwood OWL: (R: 0.46)

According to Appendix 5, table 5.3:

R factors for the forests should be 0.29 for the coniferous and 0.23 for the broadleaved tree species.

R factors for the OWL should be 0.40 for the coniferous and 0.46 for the broadleaved tree species.

Estimation of deadwood biomass

Deadwood biomass amounts were estimated as 1% of the aboveground biomass.

Category	Biomass (million metric tonnes oven-dry weight)									
	Forest					Other wooded land				
	1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
AGB of coniferous	518.25	579.00	620.25	683.25	743.25	132.00	132.00	153.00	147.00	135.00
AGB of broadleaved	346.50	378.00	401.10	457.80	540.75	129.00	114.00	108.00	96.00	81.00
Total AGB	**864.75**	**957.00**	**1 021.35**	**1 141.05**	**1 284.00**	**261.00**	**246.00**	**261.00**	**243.00**	**216.00**
BGB of coniferous	150.29	167.91	179.87	198.14	215.54	52.80	52.80	61.20	58.80	54.00
BGB of broadleaved	79.70	86.94	92.25	105.29	124.37	59.34	52.44	49.68	44.16	37.26
Total BGB	**229.99**	**254.85**	**272.13**	**303.44**	**339.92**	**112.14**	**105.24**	**110.88**	**102.96**	**91.26**
Estimated deadwood of coniferous	5.18	5.79	6.20	6.83	7.43	1.32	1.32	1.53	1.47	1.35
Estimated deadwood of broadleaved	3.47	3.78	4.01	4.58	5.41	1.29	1.14	1.08	0.96	0.81
Total Deadwood	**8.65**	**9.57**	**10.21**	**11.41**	**12.84**	**2.61**	**2.46**	**2.61**	**2.43**	**2.16**

AGB (Above-ground biomass), BGB (Below-ground biomass)

Carbon stock

Carbon stock data was estimated by converting biomass stock to carbon stock. Biomass data was multiplied by the carbon fraction which is 0.48 for broadleaved and 0.51 for conifers.

Category - 2015	Carbon (million metric tonnes)									
	Forest					Other wooded land				
	1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
AGB of coniferous	264.31	295,29	316.33	348.46	379.06	67.32	67.32	78.03	74.97	68.85
AGB of broadleaved	166.32	181.44	192.53	219.74	259.56	61.92	54.72	51.84	46.08	38.88
Total AGB	**430.63**	**476.73**	**508.86**	**568.20**	**638.62**	**129.24**	**122.04**	**129.87**	**121.05**	**107.73**
BGB of coniferous	76.65	85.63	91.73	101.05	109.93	26.93	26.93	31.21	29.99	27.54
BGB of broadleaved	38.25	41.73	44.28	50.54	59.70	28.48	25.17	23.85	21.20	17.88
Total BGB	**114.90**	**127.37**	**136.02**	**151.59**	**169.63**	**55.41**	**52.10**	**55.06**	**51.18**	**45.42**
Estimated deadwood of coniferous	2.64	2.95	3.16	3.48	3.79	0.67	0.67	0.78	0.75	0.69
Estimated deadwood of broadleaved	1.66	1.81	1.93	2.20	2.60	0.62	0.55	0.52	0.46	0.39
Total Deadwood	**4.31**	**4.77**	**5.09**	**5.68**	**6.39**	**1.29**	**1.22**	**1.30**	**1.21**	**1.08**

AGB (Above-ground biomass), BGB (Below-ground biomass)

Estimation of carbon in litter

Carbon in litter was estimated with the help of Appendix 5, tables 5.9 in the Guide for Country Reporting for FRA 2015. Default value for forest litter is 22 tonnes/ha for conifer and 13 tonnes/ha for broadleaved. Default value for OWL litter is 6 tonnes/ha for conifer and 2 tonnes/ha for broadleaved (warm temperate, moist).

Category	**Carbon (million metric tonnes)**									
	Forest (1000 ha)					**Other wooded land (1000 ha)**				
	1990	**2000**	**2005**	**2010**	**2015**	**1990**	**2000**	**2005**	**2010**	**2015**
Forest area	9 622	10 183	10 662	11 203	11 715	10 946	10 679	10 586	10 334	10 130
... of which coniferous	6 401	6 774	7 093	7 396	7 734	5 880	5 737	5 687	5 763	5 649
... of which broadleaved	3 221	3 409	3 569	3 807	3 981	5 066	4 942	4 899	4 571	4 481
Carbon in litter *(coniferous)*	140.82	149.03	156.05	162.71	170.15	35.28	34.42	34.12	34.58	33.89
Carbon in litter *(broadleaved)*	41.87	44.32	46.40	49.49	51.75	10.13	9.88	9.80	9.14	8.96
Carbon in litter	**182.70**	**193.35**	**202.44**	**212.20**	**221.90**	**45.41**	**44.31**	**43.92**	**43.72**	**42.86**

Estimation of soil carbon

Soil carbon was estimated with the help of Appendix 5, tables 5.10 in the Guide for Country Reporting for FRA 2015. Default value for soil carbon for warm temperate (moist) zone is
34 tonnes/ha.

Category	**Carbon (million metric tonnes)**									
	Forest (1000 ha)					**Other wooded land (1000 ha)**				
	1990	**2000**	**2005**	**2010**	**2015**	**1990**	**2000**	**2005**	**2010**	**2015**
Forest area	9 622	10 183	10 662	11 203	11 715	10 946	10 679	10 586	10 334	10 130

Carbon in litter	**327.15**	**346.22**	**362.51**	**380.90**	**398.31**	**372.16**	**363.09**	**359.92**	**351.36**	**344.42**

3.3.3 Reclassification

Not needed.

3.4 Data

Table 3a

Category		Growing stock volume (million m ^{3} over bark)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
CFRQ	Total growing stock	1021	1132	1209	1347	1506	87	82	87	81	72
CFRQ	... of which coniferous	691	772	827	911	991	44	44	51	49	45
CFRQ	... of which broadleaved	330	360	382	436	515	43	38	36	32	27

Table 3b

Category/Species name			Growing stock in forest (million cubic meters)			
Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	Pinus nigra Arnold. subsp. Pallasiana	Crimean pine	224	251	284	315
2 nd	Fagus orientalis Lipsky.	Beech	179	192	253	304
3 rd	Pinus brutia Ten.	Turkish pine	205	233	251	262
4 th	Pinus sylvestris L.	Scots pine	97	107	113	122
5 th	Abies sp. Mill.	Fir	95	105	92	111
6 th	Quercus sp.	Oak	110	123	111	108
7 th	Picea sp.	Spruce	23	41	52	61

8 th	Cedrus libani A.Rich.	Cedar	22	23	25	27
9 th	Juniperus sp.	Juniper	7	8	5	5
10 th	Carpinus sp.	Hornbeam	8	8	1	2
Remaining			51	41	22	30
TOTAL			1021.00	1132.00	1209.00	1347.00

THE PRE-FILLED VALUES FOR GROWING STOCK REFER TO THE FOLLOWING THRESHOLD VALUES (SEE TABLE BELOW)

Item	Value	Complementary information
Minimum diameter (cm) at breast height of trees included in growing stock (X)	8 cm	N/A
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	0-3 cm	N/A
Minimum diameter (cm) of branches included in growing stock (W)	N/A	Branches are not included in growing stock in forest inventory.
Volume refers to above ground (AG) or above stump (AS)	AG	N/A

PLEASE NOTE THAT THE DEFINITION OF GROWING STOCK HAS CHANGED AND SHOULD BE REPORTED AS GROWING STOCK DBH 10 CM INCLUDING THE STEM FROM GROUND LEVEL UP TO A DIAMETER OF 0 CM, EXCLUDING BRANCHES.

Table 3c

Category		Net annual increment (m^3 per hectare and year)				
		Forest				
		1990	2000	2005	2010	2015
CFRQ	Net annual increment	2.92	3.03	3.07	3.15	3.2
CFRQ	... of which coniferous	1.94	2.01	2.04	2.08	2.11
CFRQ	... of which broadleaved	0.98	1.02	1.03	1.07	1.09

Table 3d

Category	Biomass (million metric tonnes oven-dry weight)									
	Forest					Other wooded land				
	1990	2000	2005	2010	2015	1990	2000	2005	2010	2015

CFRQ	Above ground biomass	864.75	957	1021.35	1141.05	1284	261	246	261	243	216
CFRQ	Below ground biomass	229.99	254.86	272.13	303.44	339.92	112.14	105.24	110.88	102.96	91.26
CFRQ	Dead wood	8.65	9.57	10.21	11.41	12.84	2.61	2.46	2.61	2.43	2.16
TOTAL		1103.39	1221.43	1303.69	1455.90	1636.76	375.75	353.70	374.49	348.39	309.42

Table 3e

Category		Carbon (Million metric tonnes)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
CFRQ	Carbon in above ground biomass	430.63	476.73	508.86	568.2	638.62	129.24	122.04	129.87	121.05	107.73
CFRQ	Carbon in below ground biomass	114.9	127.37	136.02	151.59	169.63	55.41	52.1	55.06	51.18	45.42
CFRQ	*Subtotal Living biomass*	545.53	604.1	644.88	719.79	808.25	184.65	174.14	184.93	172.23	153.15
CFRQ	Carbon in dead wood	4.31	4.77	5.09	5.68	6.39	1.29	1.22	1.3	1.21	1.08
CFRQ	Carbon in litter	182.7	193.35	202.44	212.2	221.9	45.41	44.31	43.92	43.72	42.86
CFRQ	*Subtotal Dead wood and litter*	187.01	198.12	207.53	217.88	228.29	46.7	45.53	45.22	44.93	43.94
CFRQ	Soil carbon	327.15	346.22	362.51	380.9	398.31	372.16	363.09	359.92	351.36	344.42
TOTAL		1059.69	1148.44	1214.92	1318.57	1434.85	603.51	582.76	590.07	568.52	541.51

Tiers

Variable/category	Tier for status	Tier for trend
Total growing stock	Tier 2	Tier 2
Net annual increment	Tier 2	Tier 2
Above ground biomass	Tier 1	Tier 1

Below ground biomass	Tier 1	Tier 1
Dead wood	Tier 1	Tier 1
Carbon in above-ground biomass	Tier 1	Tier 1
Carbon in below ground biomass	Tier 1	Tier 1
Carbon in dead wood and litter	Tier 1	Tier 1
Soil carbon	Tier 1	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
Total growing stock	Tier 3: Data sources Recent 10 years National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI 10 years Domestic volume functions Tier 2: Data sources/registers and statistics modelling or old NFI 10 years or partial field inventory Tier 1: Other data sources	Tier 3: Estimate based on repeated compatible tiers 3 (tier for status) Domestic growth functions Tier 2: Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 tier for status Tier 1: Other
Net annual increment	Tier 3: Scientifically tested national volume and growth functions Tier 2: Selection of volume and growth functions as relevant as possible Tier 1: Other	Tier 3: Confirmation/adjustment of functions used through scientific work Tier 2: Review work done to seek alternative functions Tier: 1 Other
Biomass	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied or other domestic or otherwise nationally relevant biomass studies Tier 2: Application of country specific national or sub-national biomass conversion factors from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other
• Carbon in above ground biomass • Carbon in below ground biomass • Carbon in dead wood and litter • Soil carbon	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied Tier 2: Application of country specific national or sub-national biomass conversion factors form from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other

3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
Total growing stock	National data collection includes trees from 8 centimetres at breast height.	N/A

Growing stock of broadleaved coniferous	The ratio of coniferous and broadleaved tree species data of 1997 was used to calculate the growing stock data of coniferous and broadleaved tree species for 1990.	N/A
Growing stock composition	Composition of growing stock data for 1990 was calculated by using the rates of growing stock of tree species to total growing stock in 1997.	N/A
Net annual increment	Coniferous and broadleaved data for 2015 was estimated multiplying total forest area by the rates for 2010. Coniferous and broadleaved data for 1990 and 2000 was estimated as total forest area data of related years multiplied by the rates for 2005.	N/A
Above-ground biomass	BCEF is 1.05 for the hardwood, 0.75 for the conifer tree species in forest, and 3.0 for OWL.	N/A
Below-ground biomass	R is 0.29 for the coniferous forests, 0.23 for the hardwood forests, 0.40 for the coniferous OWL, and 0.46 for the hardwood OWL.	N/A
Dead wood	Estimated as 1% of the aboveground biomass	N/A
Carbon in above-ground biomass	With regard to Annex 5, Table 5.2, carbon fractions for deciduous and coniferous tree species existing in temperate zone are 0.48 and 0.51	N/A
Carbon in below-ground biomass	Same default carbon fraction with above-ground biomass was applied.	N/A
Carbon in dead wood	Same default carbon fraction with above-ground biomass was applied.	N/A
Carbon in litter	Default value for forest litter is 22 tonnes/ha for conifer and 13 tonnes/ha for broadleaved. Default value for OWL litter is 6 tonnes/ha for conifer and 2 tonnes/ha for broadleaved (warm temperate, moist).	N/A
Soil carbon	Default value for soil carbon for warm temperate (moist) zone is 34 tonnes/ha.	N/A

Other general comments to the table
N/A

4. What is the status of forest production and how has it changed over time?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

4.1 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.
Non wood forest product (NWFP)	Goods derived from forests that are tangible and physical objects of biological origin other than wood.
Commercial value of NWFP	For the purpose of this table, value is defined as the commercial market value at the forest gate.
Category	**Definition**
Production forest	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Multiple use forest	Forest area designated for more than one purpose and where none of these alone is considered as the predominant designated function.
Total wood removals	The total of industrial round wood removals and woodfuel removals.
...of which woodfuel	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

4.2 National data

4.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	DEMIRCI, M., KARAGOZ, G., 2012. Forest Inventory Results – 2012. General Directorate of Forestry, Ankara.	Production forest	2012	N/A
2	ENVANIS Data Base of Forest Management and Planning Department at GDF	Production forest, multiple use forest	2002, 2012	N/A
3	FRA 2010 Country Report	Multiple use forest	2005, 2010	Table 3a – Primary designated function
4	FAOSTAT	Total wood removals	N/A	Pre-filled data from FAOSTAT was used to report total wood removals.
5	ORMANSU, 2013. Forestry Statistics 2011. Ministry of Forestry and Water Affairs, ANKARA	Non-wood forest products	2010	N/A

4.2.2 Classification and definitions

National class	Definition
Economic function	Economic function includes production of round wood, firewood, and non-wood forests products.
N/A	N/A
N/A	N/A
N/A	N/A

4.2.3 Original data

Distribution of main functions of forests

Main functions	2002			2012		
	Normal	Degraded	TOTAL	Normal	Degraded	TOTAL
	ha	ha	ha	ha	ha	ha
1 – Economic	8 616 303	7 595 845	16 212 148	7 941 865	5 679 694	13 621 559
2 – Ecological	1 787 899	2 883 457	4 671 356	2 911 614	4 000 810	6 912 424
3 – Social and cultural	88 346	84 592	172 938	705 189	438 962	1 144 151
TOTAL	10 492 549	10 563 894	21 056 443	11 558 668	10 119 466	21 678 134

Multiple use forest:

2012 data is 681,581 ha. 2005 and 2010 multiple use forest data was taken from Table 3a in the FRA 2010 Country Report.

From Table 3a – Primary designated function (FRA 2010 Country Report)

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Multiple use forest	0	0	640	675

Non-wood forest products

Name of the Product	Key Species	Tonnes	Value (1.000 TL)
Bay leaf	*Laurus nobilis L.*	15 418	15 418
Thyme	*Thymus serpyllum L.*	1 412	3 530
Cone of stone pine	*Pinus pinea L.*	6 091	3 046
Cyclamen	*Cyclamen coum* MILLER, *Cyclamen cilicium* BOISS. ET HELDR.	67	2 010
Sage	*Salvia sp.*	702	1 053
Carob	*Ceratonia siliqua L.*	322	644
Snowdrop bulb	*Galanthus sp.*	19	570
Sweetgum oil	*Liquidambar orientalis varyete orientalis*	3	450
Linden	*Tilia sp.*	194	388
Chestnut	*Castanea sativa Mill.*	56	168

Total wood removals:

Pre-filled data from FAOSTAT was used to report total wood removals.

4.3 Analysis and processing of national data

4.3.1 Adjustment

Not needed.

4.3.2 Estimation and forecasting

Estimation of production forest:

Designated functions data for 2010 and 2015 was estimated multiplying total forest area data of related years by the rates of the functions to total forest area in 2012. Designated functions data for 1990, 2000 and 2005 was estimated as total forest area data of related years multiplied by the rates for 2002.

Main functions of forests	1990	2000	2005	2010	2015
	ha				
1 – Economic	*7 890*	*8 350*	*8 743*	*7 730*	*8 083*
2 – Ecological	1 636	1 731	1 812	2 801	2 929
3 – Social and cultural	96	102	107	672	703
TOTAL	**9 622**	**10 183**	**10 662**	**11 203**	**11 715**

Estimation of multiple use forest:

2015 multiple use forest data was forecasted using linear extrapolation of values of 2010 and 2012.

4.3.3 Reclassification

National definition for “economic function” seems to be closer to the FRA “production forest” definition. So that category “economic function” was used to report FRA 2015 category “production forest”.

4.4 Data

Table 4a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
CFRQ	Production forest	7890	8350	8743	7730	8083
CFRQ	Multiple use forest	N/A	N/A	640	675	685

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
1 st	Bay leaf	Laurus nobilis L.	15418	1
2 nd	Thyme	Thymus serpyllum L.	3530	3
3 rd	Cone of stone pine	Pinus pinea L.	3046	1

4 th	Cyclamen	Cyclamen coum MILLER, Cyclamen cilicium BOISS. ET HELDR.	2010	1
5 th	Sage	Salvia sp.	1053	1
6 th	Carob	Ceratonia siliqua L.	644	1
7 th	Snowdrop bulb	Galanthus sp.	570	3
8 th	Sweetgum oil	Liquidambar orientalis varyete orientalis	450	3
9 th	Linden	Tilia sp.	388	1
10 th	Chestnut	Castanea sativa Mill.	168	1
TOTAL			27277.00	

2010	
Name of local currency	Turkish Lira (TL)

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 beewax
12 Wild meat

13 Raw material for medicine
14 Raw material for colorants
15 Other edible animal products
16 Other non-edible animal products

Table 4c Pre-filled data from FAOSTAT

Year	FRA 2015 category (1000 m ^{3} u.b.)	
	Total wood removals	...of which woodfuel
1990	15756	9796
1991	15252	9750
1992	16953	8495
1993	18877	9469
1994	16845	7634
1995	19279	8534
1996	19411	9182
1997	18050	8277
1998	17668	7689
1999	16608.3	6543.3
2000	15939.3	5510.3
2001	15337.2	5361.2
2002	16122	4931
2003	15810	5081
2004	16503	5278
2005	16185	4983
2006	18084	5831
2007	18319	4645
2008	19420	4958
2009	19300	5048

2010	20554	4859
2011	21039	4616

Tiers

Category	Tier for status	Tier for reported trend
Production forest	Tier 2	Tier 2
Multiple use forest	Tier 2	Tier 2

Tier Criteria

Category	Tier for status	Tier for reported trend
Production forest Multiple use forest	Tier 3: Updated including field verifications national forest maps including functions Tier 2: Forest maps older than 6 years including forest functions Tier 1: Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other

4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	N/A	Economic function is about 69% of the total forest area. It is estimated that the percentage will decrease when all management plans based on ecosystem are completed.
Multiple use forest	N/A	N/A
Total wood removals	Pre-filled data from FAOSTAT was used.	N/A
Commercial value of NWFP	Reported figure refers to forest and other wooded land combined.	N/A

Other general comments to the table
The concept of managing forests with management plans was initiated in 1917 in Turkey. After 1996, the multifunctional forest management planning is being carefully phased to maintain biodiversity, productivity, regeneration capacity, vitality and the potential of forests and forest lands, and thus to fulfil relevant ecological, economic and social functions affecting positively to other ecosystems for better sustainable forest management. Then, sustainable goods and services utilization from forest resources is considered in principles of sustainable forest management.

5. How much forest area is managed for protection of soil and water and ecosystem services?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

5.1 Categories and definitions

Category	Definition
Protection of soil and water	Forest area designated or managed for protection of soil and water
...of which production of clean water *(sub-category)*	Forest area primarily designated or managed for water production, where most human uses are excluded or heavily modified to protect water quality.
...of which coastal stabilization *(sub-category)*	Forest area primarily designated or managed for coastal stabilization.
...of which desertification control *(sub-category)*	Forest area primarily designated or managed for desertification control.
...of which avalanche control *(sub-category)*	Forest area primarily designated or managed to prevent the development or impact of avalanches on human life assets or infrastructure.
...of which erosion, flood protection or reducing flood risk *(sub-category)*	Forest area primarily designated or managed for protecting communities or assets from the impacts of erosion riparian floods and landslides or for providing flood plain services.
...of which other *(sub-category)*	Forest area primarily designated or managed for other protective functions.
Ecosystem services, cultural or spiritual values	Forest area primarily designated or managed for selected ecosystem services or cultural or spiritual values.
...of which public recreation *(sub-category)*	Forest area designated or managed for public recreation.
...of which carbon storage or sequestration *(sub-category)*	Forest area designated or managed for carbon storage or sequestration.
...of which spiritual or cultural services *(sub-category)*	Forest area designated or managed for spiritual or cultural services.
...of which other *(sub-category)*	Forest area designated or managed for other ecosystem services.

5.2 National data

5.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	ENVANIS Data Base of Forest Management and Planning Department at GDF	Protection of soil and water, Ecosystem services	2005, 2010, 2012	N/A

2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

5.2.2 Classification and definitions

National class	Definition
Hydrologic function	Forest area primarily designated for protection of potable water and water resources.
Erosion control	Forest area primarily designated for protecting communities or assets from the impacts of erosion, riparian floods and landslides.
Protection character	Forest area primarily designated for protecting the forest itself. Forests on steep slopes were allocated for this purpose and production is prohibited.
Ecotourism and recreation	Forest area primarily designated for ecotourism and recreation purposes.
Aesthetic	Forest area primarily designated for aesthetic purposes to hide unwanted view.
Public health	Forest area primarily designated for public health by producing oxygen, cleaning the air and preventing noise.
Tourism area	The parts or places specified to be developed on a priority basis within or outside the cultural and tourism preservation and development regions, and have importance for tourism movements and activities, locations, sites and the boundaries of which are determined and announced by the Council of Ministers upon the proposal of the Ministry of Tourism.

5.2.3 Original data

Only primary designated functions data is available.

Functions	**2005**	**2010**	**2012**
	ha		
Hydrologic function	86.760	289.077	411.560
Erosion control	264.131	795.939	1.148.532
Protection character	1.011.767	696.211	479.473
TOTAL	**1.362.658**	**1.781.227**	**2.039.565**
Ecotourism and recreation	21.426	37.882	48.806

Aesthetic	46.941	129.665	165.957
Public health	13.382	25.865	29.446
Tourism area	1.384	13.991	15.701
TOPLAM	**83.133**	**207.403**	**259.910**

5.3 Analysis and processing of national data

5.3.1 Adjustment

Not needed.

5.3.2 Estimation and forecasting

In table 5a, 2012 data was used to report 2015. In table 5b, data for 2015 was forecasted using linear extrapolation of values of 2010 and 2012.

5.3.3 Reclassification

National definition for “hydrologic function” seems to be closer to the FRA “production of clean water” definition. So that category “hydrologic function” was used to report FRA 2015 category “production of clean water”. National data on “erosion control” and “protection character” was used to report FRA 2015 category “erosion, flood protection or reducing flood risk”.

National data on “ecotourism and recreation” was used to report FRA 2015 category “public recreation”. National data on “aesthetic, public health, and tourism area” was used to report FRA 2015 category “other ecosystem services, cultural or spiritual values”.

5.4 Data

Table 5a

Categories		Forest area (1000 hectares)				
		1990	2000	2005	2010	2015
CFRQ	Protection of soil and water	N/A	N/A	1363	1781	2040
CFRQ	... of which production of clean water	N/A	N/A	87	289	412

CFRQ	... of which coastal stabilization	N/A	N/A	0	0	0
CFRQ	... of which desertification control	N/A	N/A	0	0	0
CFRQ	... of which avalanche control	N/A	N/A	0	0	0
CFRQ	... of which erosion, flood protection or reducing flood risk	N/A	N/A	1276	1492	1628
CFRQ	... of which other (please specify in comments below the table)	N/A	N/A	0	0	0

Other
N/A

Table 5b

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015
Ecosystem services, cultural or spiritual values	N/A	N/A	83	208	394
...of which public recreation	N/A	N/A	21	38	63
...of which carbon storage or sequestration	N/A	N/A	0	0	0
...of which spiritual or cultural services	N/A	N/A	0	0	0
...of which other (please specify in comments below the table)	N/A	N/A	62	170	331

Tiers

Category	Tier for reported trend	Tier for status
Protection of soil and water	Tier 3	Tier 3
Ecosystem services, cultural or spiritual values	Tier 3	Tier 3

Tier criteria

Category	Tier for status	Tier for reported trend
Protection of soil and water	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations or legislation relating to soil and water protection. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other
• Cultural or spiritual values • Public recreation • Spiritual or cultural services • Other	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other

5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	Data is not available for secondary designated functions.	It is estimated that the area will increase when all management plans based on ecosystem are completed.
Production of clean water	N/A	The area will increase more.
Coastal stabilization	N/A	No data.
Desertification control	N/A	No data.
Avalanche control	N/A	Weak data.
Erosion, flood protection or reducing flood risk	National category "protection character" helps protection of soil as well.	The area will increase more.
Other protective functions	N/A	N/A
Ecosystem services, cultural or spiritual values	Data is not available for secondary designated functions.	The area will increase more.
Public recreation	N/A	N/A
Carbon storage or sequestration	N/A	N/A
Spiritual or cultural services	N/A	N/A

Other ecosystem services	National data on “aesthetic, public health, and tourism area” was used to report FRA 2015 category “other ecosystem services, cultural or spiritual values”.	N/A

Other general comments to the table
N/A

6. How much forest area is protected and designated for the conservation of biodiversity and how has it changed over time?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

6.1 Categories and definitions

Category	Definition
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.
Forest area within protected areas	Forest area within formally established protected areas independently of the purpose for which the protected areas were established.

6.2 National data

6.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Information System under development; GDF http://orbisgenel.ogm.gov.tr/	Nature Parks, Nature Conservation Area, Nature Monuments, Special Environmental Protection Area, Wildlife Conservation and Wildlife Development Areas	2004	Derived from intersection Stand Type Map and Protected Areas Map using GIS applications (ERDOĞAN, Sezgin and FIRAT,Yücel).
2	Forest Tree Seeds and Tree Breeding Research Directorate http:// www.ortohum.gov.tr/	Seed Stands, Gene Conservation Forest, Clonal Seed Orchards	2004	N/A
3	Turkish Forestry Inventory: GDF Publications, 2006 http://www.ogm.gov.tr/ orm_var.htm	Production, Forest Characterised as Protection Forest, Protection Areas for Reduce Human Impacts, Nature Protection, Designated Forest Areas for Healthy of Societies, Natural Sites, Tourism Areas	2004	N/A
4	Protected Areas Data of Ministry of Forest and Water Affairs	Nature reserve areas, Nature parks, Natural monuments, Wildlife development areas, Special environmental protection areas, Protection forests, Gene conservation forests, Wetland, Natural sites	2012	Stand type map of GDF was intersected with the Protected Areas 2013 Data of Ministry of Forest and Water Affairs by İNAN, Çiğdem.
5	Official Report by Forest Tree Seeds and Tree Breeding Research Directorate at GDF	Gene conservation forests, Seed stands, Gene conservation forests	2012	N/A

6	National Parks Data of GDF under Ministry of Forest and Water Affairs	National Parks	2012	Stand type map was intersected with the National Parks Data of GDF by MEYDAN KOCAMAN, Tülay.

6.2.2 Classification and definitions

National class	Definition
Nature reserve areas, National parks, Nature parks, Natural monuments, Wildlife development areas, Special environmental protection areas, Protection forests, Gene conservation forests, Wetland, Natural sites	See 2.2.2.
Seed stands	Seed stands are chosen in a specific geographic region among natural stands of having trees of superior quality concerning desired characteristics.
Gene conservation forests	These forests are selected for protecting genetic diversity of forest tree species in their natural habitat and managed by special plans.
N/A	N/A

6.2.3 Original data

Data for 2004, 2005 and 2012 was taken from Section 2.2.3 of this report (primary forest data). Data on "Seed Stands" and "Clonal Seed Orchards" was added to primary forest data to calculate the conservation of biodiversity data.

National Categories	2004	2005	2012
	ha		
Nature Reserve Areas (I – IUCN)	22 060	22 307	16 536
National Parks (II – IUCN)	151 397	155 102	181 035
Nature Parks (V – IUCN)	17 787	17 986	24 538
Natural Monuments (III – IUCN)	127	128	264
Wildlife Development Areas (IV – IUCN)	402 435	406 936	410 488
Special Environmental Protection Areas	66 349	67 091	67 995
Protection Forests	106 288	107 477	105 061

Gene Conservation Forests	33 789	34 167	37 098
Wetland			47 538
Natural Sites	461	466	214 173
Seed Stands	46 769	47 292	46 566
Clonal Seed Orchards	1 170	1 183	1 313
FRA 2015 Conservation of biodiversity (protected areas)	**848 632**	**860 135**	**1 152 605**

6.3 Analysis and processing of national data

6.3.1 Adjustment

Not needed.

6.3.2 Estimation and forecasting

Conservation of biodiversity data for 2015 was forecasted using linear extrapolation of values of 2005 and 2012. 2010 data was estimated using linear interpolation of values of 2005 and 2012. Reported data for 1990 and 2000 was too week so that 2004 and 2005 data was used to forecast 2000 and 1990 data.

National Categories	**1990**	**2000**	**2005**	**2010**	**2015**
	ha				
FRA 2015 Conservation of biodiversity	687 590	802 620	860 135	1 069 042	1 277 949

National Categories	**1990**	**2000**	**2005**	**2010**	**2015**
	ha				
Nature Reserve Areas (I – IUCN)	18 602	21 072	22 307	18 185	14 063

National Parks (II – IUCN)	99 528	136 577	155 102	173 626	192 149
Natural Monuments (III – IUCN)	113	123	128	225	322
Wildlife Development Areas (IV – IUCN)	339 421	384 431	406 936	409 473	412 010
Forest area within protected areas	**457 664**	**542 203**	**584 473**	**601 509**	**618 544**

6.3.3 Reclassification

Forest area which helps protection of biodiversity within national category “protected areas” was reported as conservation of biodiversity data.

6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
CFRQ	Conservation of biodiversity	688	803	860	1069	1278
CFRQ	Forest area within protected areas	458	542	584	602	619

Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	Tier 3	Tier 3
Forest area within protected areas	Tier 3	Tier 3

Tier criteria

Category	Tier for status	Tier for reported trend

• Conservation of biodiversity • Forests within protected areas	Tier 3: Data obtained from national or state agencies responsible for conservation and protected area or legislation relating to area protection. Tier 2: Studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates Tier 1 Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other

6.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Conservation of biodiversity	Forest area which does not help protection of biodiversity within national category "protected areas" was excluded (e.g. urban forests and recreation areas).	N/A
Forest area within protected areas	Forest area within protected areas data includes areas of National Parks (II - IUCN), Nature Conservation Areas (I - IUCN), Natural Monuments (III – IUCN) and Wildlife Development Areas (IV – IUCN).	N/A

Other general comments to the table
The concept of managing forests with management plans was initiated in 1917 in Turkey. After 1996, the multifunctional forest management planning is being carefully phased to maintain biodiversity, productivity, regeneration capacity, vitality and the potential of forests and forest lands, and thus to fulfil relevant ecological, economic and social functions affecting positively to other ecosystems for better sustainable forest management. Then, sustainable goods and services utilization from forest resources is considered in principles of sustainable forest management.

7. What is the area of forest affected by woody invasive species?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

7.1 Categories and definitions

Category	Definition
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.

7.2 National data

7.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

7.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

7.2.3 Original data

7.3 Analysis and processing of national data

7.3.1 Adjustment

7.3.2 Estimation and forecasting

7.3.3 Reclassification

7.4 Data

Table 7

Scientific name of woody invasive species	Forest area affected (000 ha)	
	2005	2010
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
Total	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Invasive species	Tier 3	Tier 3

Tier Criteria

Category	Tier for status	Tier for reported trend

Invasive species	Tier 3: Systematic assessment in forest inventory or other survey (e.g. by conservation department) within the last 5 years) Tier 2: Systematic assessment in forest inventory or other survey (e.g. by conservation department conducted more than 5 years ago) Tier 1: Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other

7.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Invasive species	Not applicable.	N/A

Other general comments to the table
Not applicable.

8. How much forest area is damaged each year?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

8.1 Categories and definitions

Category	Definition
Number of fires	Number of fires per year
Burned area	Area burned per year
Outbreaks of insects	A detectable reduction in forest health caused by a sudden increase in numbers of harmful insects.
Outbreaks of diseases	A detectable reduction in forest health caused by a sudden increase in numbers of harmful pathogens, such as bacteria, fungi, phytoplasma or virus.
Severe weather events	Damage caused severe weather events, such as snow, storm, drought, etc.

8.2 National data

8.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Official Report by Department of Combating Forest Fires at GDF.	Number of fires, Forest area burned	2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012	N/A
2	Statistical data on forest insect and disease by Department of Combating Forest Insects and Diseases at GDF	Forest area affected by insects and diseases	2008, 2009, 2010, 2011, 2012	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

8.2.2 Classification and definitions

National class	Definition
Forest area affected by insects and diseases	Forest area affected by insects and diseases in hectares.
N/A	N/A
N/A	N/A
N/A	N/A

8.2.3 Original data

Total land area burned by fire between 2003 - 2012			
Years	**Number**	**Forest (ha)**	**Total (ha)**
2003	1704	5 749	6 644
2004	1579	4 216	4 876
2005	1147	1 918	2 821
2006	1619	2 153	7 762
2007	2041	8 505	11 664
2008	1539	23 449	29 749
2009	1175	3 357	4 678
2010	1128	2 127	3 317
2011	1349	2 830	3 612
2012	2450	9 142	10 454

Total land area burned by fire contains forest and OWL.

Forest area affected by insects and diseases						
Name	**2008**	**2009**	**2010**	**2011**	**2012**	**Total**
	ha					
Thaumetopoea pityocampa Schiff. - *T. wilkinsoni* Tams	248 681	270 638	270 527	11 038	144 184	945 068
Orthotomicus erosus Woll. - *O. tridentatus*	73 323	67 248	63 941			204 512

Pityokteines curvidens Germ. - *Cryphalus piceae* Ratz.	63 311	74 793	38 963	100	21 747	198 914
Ips sexdentatus Börner	34 403	45 399	38 681		35 054	153 537
Dendroctonus micans Kug.	46 636	45 188				91 824
Neodiprion sertifer Geoff. - *Diprion pini* L.	24 103	27 029	18 294		4 080	73 506
Orthotomicus tridentatus Egg.					50 794	50 794
Blastophagus piniperda L. - *B.minör* Hart.	10 248	9 815	7 954			28 017
Diplodia pinea	18 152			4 758		22 910
Euproctis chrysorrhoea L.	16 050			4 058		20 108
Rhyacionia buoliana Schiff.	7 120			5 789		12 909
Ips typographus L.	6 541	4 933				11 474
Lymantria dispar L.	4 350			5 336		9 686
Ips acuminatus Gyll.	4 554			4 260		8 814

Tomicus minör Hartig - *T. piniperda* - *T. destruens*	7 773				343	8 116
Acleris undulana Walsingham.	4 261			530		4 791
Viscum album L.	1 355	1 894		857		4 106
Pissodes notatus	3 523					3 523
Dioryctria splendidella Herrich-Schaffer	1 065			1 500		2 565

8.3 Analysis and processing of national data

8.3.1 Adjustment

Not needed.

8.3.2 Estimation and forecasting

Not needed.

8.3.3 Reclassification

Not needed.

8.4 Data

Table 8a

Category	000 ha, number of fires									
	2003		2004		2005		2006		2007	
	000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#

CFRQ	Total land area burned	6.6	1704	4.9	1579	2.8	1147	7.8	1619	11.7	2041
CFRQ	... of which forest area burned	5.7	1704	4.2	1579	1.9	1147	2.2	1619	8.5	2041

Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
CFRQ	Total land area burned	29.7	1539	4.7	1175	3.3	1128	3.6	1349	10.5	2450
CFRQ	... of which forest area burned	23.4	1539	3.4	1175	2.1	1128	2.8	1349	9.1	2450

Table 8b

Outbreak category	Description/name	Year(s) of latest outbreak	Area damaged (000 hectares)
1	Thaumetopoea pityocampa Schiff. - T. wilkinsoni Tams	2008, 2009, 2010, 2011, 2012	945
1	Orthotomicus erosus Woll. - O. tridentatus	2008, 2009, 2010	205
1	Pityokteines curvidens Germ. - Cryphalus piceae Ratz.	2008, 2009, 2010, 2011, 2012	199
1	Ips sexdentatus Börner	2008, 2009, 2010, 2012	154
1	Dendroctonus micans Kug.	2008, 2009	92
1	Neodiprion sertifer Geoff. - Diprion pini L.	2008, 2009, 2010, 2012	74
1	Orthotomicus tridentatus Egg.	2012	51
1	Blastophagus piniperda L. - B.minör Hart.	2008, 2009, 2010	28
2	Diplodia pinea	2008, 2011	23
1	Euproctis chrysorrhoea L.	2008, 2011	20

Outbreak category
1 Insects
2 Diseases

3 Severe weather events

Tiers

Category	Tier for status	Tier for trend
Area affected by fire	Tier 3	Tier 3
• Insects • Diseases • Severe weather events	Tier 2	Tier 2

Tier criteria

Category	Tier for status	Tier for reported trend
Burned area	**Tier 3** : National fire monitoring routines **Tier 2** : Remote sensing surveys **Tier 1** : Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other
• Insects • Diseases • Severe weather events	**Tier 3** : Systematic survey (e.g. via inventory or aerial damage assessment) **Tier 2** : Management records **Tier 1** : Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other

8.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Burned area	Total land area burned by fire contains forest and OWL.	N/A
Insects	Forest area affected by insects and diseases contains forest and OWL.	N/A
Diseases	N/A	N/A
Severe weather events	N/A	N/A

Other general comments to the table
N/A

9. What is the forest area with reduced canopy cover?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

Category	Definition
Reduction in canopy cover	Forest that has undergone a reduction of canopy cover of more than 20% between the years 2000 and 2010 within the forest canopy cover range of 30-80% as detected by the MODIS VCF sensor.

Table 9

Category	Area of forest with reduced canopy cover (000 ha)
Reduction in canopy cover	N/A

Tiers

Category	Tier for reported trend
Reduction in canopy cover	N/A

Tier criteria

Category	Tier for reported trend
Reduction in canopy cover	**Tier 3** : Remote sensing with ground truthing and/or Landsat imagery **Tier 2** : Remote sensing using Modis (using pre-filled data provided by FAO) **Tier 1** : Expert opinion

Comments

Category	Comments related to data definitions etc
Reduction in canopy cover	N/A

Other general comments

10. What forest policy and regulatory framework exists to support implementation of sustainable forest management SFM?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

10.1 Categories and definitions

Category	Definition
Policies supporting sustainable forest management	Policies or strategies that explicitly encourage sustainable forest management.
Legislation and regulations supporting sustainable forest management	Legislation and regulations that govern and guide sustainable forest management, operations and use.

10.2 National data

10.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Turkish National Forestry Program 2004 - 2023, ANKARA	Policies supporting sustainable forest management	2004-2023	N/A
2	Constitution of the Republic of Turkey (Article 169)	Legislation and regulations supporting sustainable forest management	N/A	N/A
3	Forest Law (Law No. 6831)	Legislation and regulations supporting sustainable forest management	N/A	N/A
4	Forest Management Planning Regulation of 2008	Legislation and regulations supporting sustainable forest management	N/A	N/A

10.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

10.2.3 Original data

The Contents of the National Forestry Programme

Prepared National Forestry Programme consists of two main sections. I. section gives the comprehensive General overview of the present situation of our forestry. II. Section gives the (i) National forestry principles, objectives and policies (ii) follow-up strategies to achieve the national forestry policies and to meet the objectives, (iii) short term Action programme (2004-2008 period) Main objective (Task) of the national forestry in the programme is to *"Sustainable management of forest resources of our country and optimal contribution to people's welfare and sustainable development of the country "*

Main policy to improve the sustainable management of the forests is *"Multiple use and management of forests through ecosystem management approach, integrated planning and implementation of forestry activities at watershed base in active participation and collaboration with forest organization and other stake holders", in the framework of this policy, it is accepted that in the forthcoming periods, Activities to improve forest management should mainly focus on the subjects below; (i) improvement of ecosystem management (ii) improvement of multiple (multi-purpose) management of forest resources.(iii) improvement of participation (iv) improvement of coordination and integration (with forestry organization and other institutions),*

There are 30 policies, 56 strategies and 147 action proposals (77 takes first priority, 58 second priority, 12 third priority and 40 is for long term and the rest is for short term) in the Action plan under the National Forestry Programme.

Legislation and regulations supporting sustainable forest management

1- Constitution of the Republic of Turkey (Article 169 - A. Protection and Development of Forests)

2- Forest Law (Law No. 6831)

3- Forest Management Planning Regulation of 2008

10.3 Data

Table 10

Category	National	Sub-national		
		Regional	Provincial/State	Local
Policies supporting sustainable forest management	yes	no	no	no
... of which, in publicly owned forests	yes	no	no	no
... of which, in privately owned forests	yes	no	no	no

Legislation and regulations supporting sustainable forest management	yes	no	no	no
... of which, in publicly owned forests	yes	no	no	no
... of which, in privately owned forests	yes	no	no	no

10.4 Comments

Variable / category	Comments related to data definitions etc
Policies supporting sustainable forest management	Turkish National Forestry Program 2004 - 2023.
Legislation and regulations supporting sustainable forest management	N/A

Other general comments

11. Is there a national platform that promotes stakeholder participation in forest policy development?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

11.1 Categories and definitions

Category	Definition
National stakeholder platform	A recognized procedure that a broad range of stakeholders can use to provide opinions, suggestions, analysis, recommendations and other input into the development of national forest policy.

11.2 National data

11.2.1 Data sources

	References to sources of information	Years	Additional comments
1	Forestry and Water Council	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A

Table 11

Is there a national platform that promotes or allows for stakeholder participation in forest policy development?	yes

11.3 Comments

Category	Comments related to data definitions etc
National stakeholder platform	The “Forestry and Water Council” gained legal status as a permanent council of the Ministry of Forestry and Water Affairs. The Council has 11 working groups: improvement of water resources, climate change and adaptation, water quality management, basin management and water information system, sustainable biological diversity management, protected areas and wild life management, fight against desertification and erosion, conservation of forests, improvement of forests, group of benefiting from forests, and meteorological observation and early warning systems. The members of the Forestry and Water Council are; representatives of relevant ministries; senior representatives of public institutions and organizations; representatives of universities, trade associations, non-governmental organizations and private sector; and well-known experts in forestry and water.

Other general comments

12. What is the forest area intended to be in permanent forest land use and how has it changed over time?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

12.1 Categories and definitions

Category	Definition
Forest area intended to be in permanent forest land use	Forest area that is designated or expected to be retained as forest and is highly unlikely to be converted to other land use.
...of which permanent forest estate *(sub-category)*	Forest area that is designated by law or regulation to be retained as forest and may not be converted to other land use.

12.2 National data

12.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Table 1a, CFRQ/FRA 2015	Forest area intended to be in permanent forest land use, Permanent forest estate	2010	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

12.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

12.2.3 Original data

Table 1a, CFRQ/FRA 2015

12.3 Analysis and processing of national data

12.3.1 Adjustment

Not needed.

12.3.2 Estimation and forecasting

Not needed.

12.3.3 Reclassification

Not needed.

12.4 Data

Table 12

Categories		Forest area 2010 (000 ha)
CFRQ	Forest area intended to be in permanent forest land use	11203
CFRQ	... of which permanent forest estate	11203

Tiers

Category	Tier for status
Forest area intended to be in permanent forest land use	Tier 3
Permanent forest estate	Tier 3

Tier Criteria

Category	Tier for status
Forest area intended to be in permanent forest land use	**Tier 3** : National or sub-national land use plans strategy documents or other reports within the past 10 years **Tier 2** : National or sub-national land use plans strategy documents or other reports within the past 20 years **Tier 1** : Other
Permanent forest estate	**Tier 3** : National or sub-national land use plans strategy documents or other reports within the past 10 years **Tier 2** : National or sub-national land use plans strategy documents or other reports within the past 20 years **Tier 1** : Other

12.5 Comments

Category	Comments related to data definitions etc

Forest area intended to be in permanent forest land use	Public and private forest area.
Permanent forest estate	According to the Constitution of Turkey (Articles 169 and 170), the ownership of state forests cannot be transferred. State forest areas and resources are managed by the General Directorate of Forestry on behalf of the state. Since legal forest boundaries have not been completed as of yet for proper ownership and land use titles, many forest areas are still under dispute due to social conflict. As a result, lots of cases are filed to court and not been finalized, creating major difficulties towards the management of those areas.

Other general comments

13. How does your country measure and report progress towards SFM at the national level?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

13.1 Categories and definitions

Category	Definition
Forest area monitored under a national forest monitoring framework	Forest area monitored by a national monitoring framework or systems that provide measurement based periodic monitoring of forest extent and quality.
Forest reporting at national scale	National reporting of forest extent and characteristics that includes some measure of progress toward sustainable forest management.

13.2 National data

13.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forest Management Planning Regulation of 2008	Forest inventory	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

13.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

13.3 Data

Table 13a

Category	% of total forest area	Most recent year	Check all boxes that apply					
			Continuous	Periodic	Permanent ground plots	Temporary ground plots	Aerial/ remote sensing sample based	Aerial/ remote sensing full coverage
Forest inventory	100	2014	yes	yes	no	yes	no	yes
Other field assessments	N/A	N/A	no	no	no	no	no	no
Updates to other sources	N/A	N/A	no	no	no	no	no	no
Expert estimate	N/A	N/A						

Table 13b

Type of forest reporting used at national scale	Check boxes that apply
1 Criteria and Indicators reporting	no
2 Periodic national state of the forest report	yes
3 Other (please document)	yes
4 None	no

Other type of forest reporting
Implementation of forest management plans are reported every year.

13.4 Comments

Category	Comments
Forest inventory	Forest management plans are renewed every 10 years. For this purpose, aerial photo interpretation and field inventory of 1/10 of total forest area is done every year. ENVANIS data base collects related data from forest management plans.
N/A	N/A
N/A	N/A

Other general comments

14. What is the area of forest under a forest management plan and how is this monitored?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

14.1 Categories and definitions

Category	Definition
Forest area with management plan	Forest area that has a long-term documented management plan, aiming at defined management goals which is periodically revised
...of which for production *(sub-category)*	Forest management plan mainly focused on production
...of which for conservation *(sub-category)*	Forest management plan mainly focused on conservation
Monitoring of forest management plans	Government monitoring of forest management plan implementation conducted through field visits or audits of forest management plan performance

14.2 National data

14.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Tables 1a, CFRQ/FRA 2015	Forest area with management plan	2010	N/A
2	Tables 4a, CFRQ/FRA 2015	Production	2010	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

14.3 Data

Table 14a

Forest plan type	Forest area 2010 (000 ha)
Forest area with management plan	11203
... of which for production	7730
... of which for conservation	3473

Table 14b

Indicate which (if any) of the following are required in forest management plans in your country	
1 Soil and water management	yes

2 High conservation value forest delineation	yes
3 Social considerations community involvement	yes

Table 14c

Percent of area under forest management plan that is monitored annually	100

Tiers

Category	Tier for status
Forest area with management plan	Tier 3
Percent of area under forest management plan that is monitored annually	Tier 3

Tier criteria

Category	Tier for status
Forest area with management plan	**Tier 3** : Reports that describe national records 5 years old or less that contain long-term forest monitoring plans **Tier 2** : Industry or other records indicating the presence of a long-term forest management plan **Tier 1** : Other
Percent of area under forest management plan that is monitored annually	**Tier 3** : Government documentation of monitoring extent **Tier 2** : Reports from forest managers or other documental sources **Tier 1** : Other

14.4 Comments

Category	Comments
Forest area with management plan	Laws give responsibility of forest planning to the State. Under the administration of GDF, the forest management and planning department is responsible for the preparation of forest management plans for all the forest areas regardless of ownership.
N/A	N/A
N/A	N/A

Other general comments

15. How are stakeholders involved in the management decision making for publicly owned forests?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

15.1 Categories and definitions

Category	Definition
Stakeholder involvement	Stakeholder involvement is defined as significant inputs into at least one aspect of forest management at the operational scale

Table 15

Please indicate the type of stakeholder involvement in forest management decision making required in your country	
1. Planning phase	yes
2. Operations phase	yes
3. Review of operations	no

Tiers

Category	Tier for status
Type of stakeholder inputs	Tier 3

Tier criteria

Category	Tier for status
Type of stakeholder inputs	**Tier 3** : Government (national or sub-national) documentation of stakeholder inputs **Tier 2** : Government (national or subnational) requirement but stakeholder inputs not documented **Tier 1** : Other

15.2 Comments

Category	Comments
Stakeholder involvement	Stakeholder involvement in planning phase is required by the Forest Management Planning Regulation.
Stakeholder involvement in operations phase	According to the forest law, forest villagers have to be employed in forestry operations. Natural regeneration and other forestry activities are carried out with the approval of villagers. If a forestry operation adversely affects forest villagers, they may stop this operation.
N/A	N/A

Other general comments

16. What is the area of forest under an independently verified forest certification scheme?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

16.1 Categories and definitions

Category	Definition
FSC certification	Forest area certified under the Forest Stewardship Council certification scheme
PEFC certification	Forest area certified under the Programme for the Endorsement of Forest Certification scheme
Other international forest management certification	Forest area certified under an international forest management certification scheme with published standards and is independently verified by a third-party, excluding FSC and PEFC certification.
Certified forest area using a domestic forest management certification scheme	Area certified under a forest management certification scheme with published standards that are nationally recognized and independently verified by a thirdparty

16.2 Data

Table 16a

International forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
CFRQ	FSC	0	0	0	0	0	0	0
CFRQ	PEFC	0	0	0	0	0	0	0
CFRQ	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
CFRQ	FSC	0	0	0	0	80.1	699.7	
CFRQ	PEFC	0	0	0	0	0	0	
CFRQ	Other	0	0	0	0	0	0	

Table 16b

Domestic forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
CFRQ	N/A	0	0	0	0	0	0	0
CFRQ	N/A	0	0	0	0	0	0	0
CFRQ	N/A	0	0	0	0	0	0	0

		2007	2008	2009	2010	2011	2012	
CFRQ		0	0	0	0	0	0	
CFRQ		0	0	0	0	0	0	
CFRQ		0	0	0	0	0	0	

Tier criteria

Category	Tier for status
International forest management certification	Tier 3: International forest management scheme records maintained by the certifying organization for the reporting year Tier 2: International forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other
Domestic forest management certification	Tier 3: National registry reports for domestic forest management certification maintained by the certifying organization for the reporting year Tier 2: Domestic forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other

Tiers

Category	Tier for status
International forest management certification	Tier 3
Domestic forest management certification	N/A

16.3 Comments

Category	Comments related to data definitions etc
Certified forest area using an international forest management certification scheme	Forest area data was derived from ENVANIS database.
Domestic forest management certification	Not applicable.

Other general comments

17. How much money do governments collect from and spend on forests?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

17.1 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 revenue include: • Goods : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products. • Services : including concession fees and royalties, stumpage payments, public timber sales revenue taxes and charges based on forest area or yield, taxes on domestic trade and export of forest products, special levies on forestry activities and payments into forest related funds, other miscellaneous inspection, licence and administrative fees levied by forest administrations, permit and licence fees for recreation and other forest related activities.
Public expenditure on forestry	All government expenditure on forest related activities.

17.2 National data

17.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Official data of General Directorates and Research Institutes	Forest revenue, Public expenditure	2000, 2005	N/A
2	ORMANSU, 2013. Forestry Statistics 2011. Ministry of Forestry and Water Affairs, ANKARA	Public expenditure on forestry	2008, 2009, 2010, 2011	N/A
3	Working Capital Budget of GDF for 2013	Forest revenue	2010	N/A
4	N/A	N/A	N/A	N/A

17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	234816	875723	1567608
Public expenditure on forestry	152691	617178	762251

	2000	2005	2010

Name of Local Currency	Turkish Lira	N/A	N/A

17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	N/A
Public expenditure on forestry	Average data of 2008, 2009, 2010 and 2011.
Other general comments	N/A

Other general comments

18. Who owns and manages the forests and how has this changed?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

18.1 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.
...of which owned by the state at national scale *(sub-category)*	Forest owned by the State at the national scale or administrative units of the public administration or by institutions or corporations owned by the public administration.
...of which owned by the state at the sub-national government scale *(sub-category)*	Forest owned by the State at the sub-national government scale 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 cooperatives corporations and other business entities, private, religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.
...of which individuals *(sub-category)*	Forest owned by individuals and families.
...of which private business entities and institutions *(sub-category)*	Forest owned by private corporations cooperatives companies and other business entities as well as private nonprofit organizations such as NGOs nature conservation associations, and private religious and educational institutions etc.
...of which local tribal and indigenous communities *(sub-category)*	Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area or forest owned by communities of indigenous or tribal people The community members are coowners that share exclusive rights and duties and benefits contribute to the community development.
Unknown ownership	Forest area where ownership is unknown includes areas where ownership is unclear or disputed.
Categories related to management rights of public forests	**Definition**
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 companies	Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities private cooperatives, private nonprofit 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.

18.2 National data

18.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Turkish Forestry Inventory: GDF Publications, 2006 http://www.ogm.gov.tr/orm_var.htm	Forest, Other wooded land	2004	N/A
2	Official report of Forest Cadastre and Ownership Department at GDF	Public ownership, Private ownership	2012	N/A
3	Table 1a, CFRQ/FRA 2015	Forest	1990, 2000, 2005, 2010	N/A
4	N/A	N/A	N/A	N/A

18.2.2 Classification and definitions

National class	Definition
State Ownership	Forest owned by the State
Public Ownership	Forest owned by 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.
N/A	N/A

18.2.3 Original data

Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Public ownership	9 607	10 168	10 651,76	11 193,08
... of which owned by the state at national scale				11 185,33

... of which owned by the state at the sub-national government scale				7,75
Private ownership	15	15	10,24	9,92
... of which owned by individuals			9,698	9,92
... of which owned by private business entities and institutions			0,51	N/A
... of which owned by local, tribal and indigenous communities			0,032	N/A
Unknown ownership			0	0
TOTAL	**9 622**	**10 183**	**10 662**	**11 203**

New and better data source is used to report the data for 1990, 2000 and 2005. New official data sources were used for 2010 reporting and the figures for previous years (1990, 2000 and 2005) were renewed.

18.3 Analysis and processing of national data

18.3.1 Adjustment

Not needed.

18.3.2 Estimation and forecasting

Not needed.

18.3.3 Reclassification

Not needed.

18.4 Data

Table 18a

Categories		Forest area (1000 hectares)			
		1990	2000	2005	2010
CFRQ	Public ownership	9607	10168	10651.76	11193.08
CFRQ	... of which owned by the state at national scale	N/A	N/A	N/A	11185.33
CFRQ	... of which owned by the state at the sub-national government scale	N/A	N/A	N/A	7.75
CFRQ	Private ownership	15	15	10.24	9.92
CFRQ	... of which owned by individuals	N/A	N/A	9.698	9.92
CFRQ	... of which owned by private business entities and institutions	N/A	N/A	0.51	N/A
CFRQ	... of which owned by local, tribal and indigenous communities	N/A	N/A	0.032	N/A
CFRQ	Unknown ownership	0	0	0	0
TOTAL		9622.00	10183.00	10662.00	11203.00

Tiers

Category	Tier for status	Tier for reported trend
Public ownership	Tier 2	Tier 2
Private ownership	Tier 3	Tier 3
Unknown ownership	Tier 3	Tier 3

Tier criteria

Category	Tier for status	Tier for reported trend

Ownership	Tier 3: National forestry statistics registers of land titles or maps on land ownership or all forest area under one ownership category that is five years old or less. Tier 2:National forestry statistics registers of land titles or maps on land ownership or questionnaires that are more than five years old. Tier 1: Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Public Administration	9607	10168	10651.76	11193.08
Individuals	0	0	0	0
Private companies	0	0	0	0
Communities	0	0	0	0
Other	0	0	0	0
TOTAL	9607.00	10168.00	10651.76	11193.08

Category	Tier for reported trend	Tier for status
Public Administration	Tier 3	Tier 3
Individuals	Tier 3	Tier 3
Private companies	Tier 3	Tier 3
Communities	Tier 3	Tier 3
Other	Tier 3	Tier 3

18.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend

Public ownership	The data is correct in terms of ownership percentage. Almost all forests are under public ownership. About ten-thousand hectares private forests are much trivial with respect to areas comparing with public ownership. However, legal definition of forests does not match with scientific definition of it. Therefore, substantially large areas are considered forests by law, although it does not fit the definition. This leads misunderstanding of the concept. Public ownership data is different than in FRA 2010 due to new and better data source.	Areas of forestlands in Turkey has been increasing due to afforestation, domestic migration etc.
Private ownership	Not any legal definition we have in legislation about private forests. Moreover, areas naturally covered by vegetation causes ownership lost due to misinterpretation and bad implementation of the law. This creates a long lasting and even an enduring conflict among public. On the other hand, the areas of private forests are much smaller due to legislative restrictions. In 1945 Turkey has enacted a law about nationalisation of all forests existed as of 1945 belong to other than State. However, due to misinterpretation and unenforced of the law, all farmlands left for uncultivated and forest vegetation comes out are considered as State forests and title deed is cancelled. This also creates very many severe conflicts among public. And thus, private forestry cannot be developed at a satisfactory level. Also, financial incentives and management restrictions do not provide satisfactory incentives for people.	By considering current public visions, perception, policy and legislation, increasing private forestry is almost impossible. A significant policy shift and changes in public precepts and legislative amendments are needed urgently to encourage private forestry. 1990 and 2000 Private ownership data were estimation, 2005 data is real data, which derived from related Departments data base.
Unknown ownership	Not applicable.	N/A
Management rights	In here, management rights mostly are understood the right of harvesting. If this is so, all rights belong to State. However, according to current Forest Code, forest villagers and forest village development cooperatives have legal privileges to harvest timber from State forests within the boundaries or in the vicinity of their villages. Not any other people or stake holders have a right to manage State forests. Only short term contract is available to collect tree seeds from Orchards and produce side products like resin and barks of some kinds. Management rights data is different than in FRA 2010 due to new and better data source.	N/A

Other general comments to the table
Property rights have posed a serious problem in Turkish forestry. Having held almost all ownership on both woodlands and forestlands the State is the sole managerial power on all forest resources.

19. How many people are directly employed in forestry?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

19.1 Categories and definitions

Category	Definition
Full-time equivalents (FTE)	A measurement equal to one person working full-time during a specified reference period.
Employment in forestry	Employment in activities related to production of goods derived from forests. This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

19.2 National data

19.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	FRA2000 Country Report	Employment in forestry	1990, 2000	N/A
2	Turkey's Statistical Yearbook, 2008	Employment in forestry	1990-2000	N/A
3	Estimation	Employment in forestry	2005	N/A
4	GDF, 2010-2014 Strategic Plan	Employment in forestry	2005	N/A
5	Monitoring and Evaluation Report of Investment Program for 2012, GDF	Employment in forestry	2010	N/A

19.2.2 Classification and definitions

National class	Definition
Silvicultural activities	These activities includes; thinning, regeneration, afforestation, nursery and …etc
N/A	N/A
N/A	N/A
N/A	N/A

19.2.3 Original data

National Class	Year			
	1990	**2000**	**2005**	**2010**
Silvicultural activities	65 908	27 941	25 000	41 400
Temporal worker	32 384	16 900	13 824	5 473
Permanent worker	2 901	3 097	3 475	14 940
Sub Total	**101 193**	**47 938**	**42 299**	**61 813**
For Protected areas	253	526	691	N/A

19.3 Data

Table 19

Category		Employment (000 years FTE)			
		1990	**2000**	**2005**	**2010**
CFRQ	Employment in forestry	101.19	47.9	42.3	61.8
CFRQ	... of which female	N/A	N/A	N/A	N/A

19.4 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	Data includes temporal and permanent workers and villagers who work for silvicultural activities.	In Turkey, Afforestation and Erosion Control Mobilization Action Plan was applied between 2008 and 2012. Due to implementation of the Action Plan, around 1 million hectares land was planted between 2003 and 2012. In addition to afforestation, Turkish government conducted rehabilitation and erosion control activities. Production of wood was also increased during last decade. The employment in these activities were doubled the employment in the forestry.

Other general comments to the table
N/A

20. What is the contribution of forestry to Gross Domestic Product (GDP)?

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

20.1 Categories and definitions

Category	Definition
Gross value added from forestry (at basic prices)	This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

20.2 Data

Table 20 (Pre-filled data from UNdata/EUROSTAT)

Category	Million	Currency	Year for latest available information
Gross value added from forestry (at basic prices)	6317.3	Turkish Lira	2012

20.3 Comments

Category	Comments
Gross value added from forestry	Annual gross domestic product (GDP) of Turkey at basic prices is 1,263,456 million TL for 2012. The share of the forestry sector in the GDP is around 0.5 percent (estimation by KAYACAN, Bekir).

Other general comments

21. What is forest area likely to be in the future

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

21.1 Categories and definitions

Category	Definition
Government target/ aspiration for forest area	Government target/aspiration for forest area for a specific year.
Forests earmarked for conversion	Forest area that is allocated/classified or scheduled to be converted into non-forest uses.

21.2 National data

21.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Turkey is Ready, Target 2023.	Government target for forest area	2023	Forest area target of the government for 2023.
2	Strategic Plan for 2013-2017 of the GDF	Government target for forest area	2017	Forest area target of the GDF for 2017.
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

21.3 Data

Table 21a

Category	Forest area (000 ha)	
	2020	2030
Government target/aspiration for forest area	13065	14947

Table 21b

Category	Forest area (000 ha)
	2013
Forests earmarked for conversion	0

21.4 Comments

Category	Comments

Government target/aspiration for forest area	The government target for 2023 is to increase the share of forest and other wooded land to %30 of total land area. The GDF target for 2017 is to increase forest area to 12,500,000 ha (FRA definition).
Forests earmarked for conversion	N/A

Other general comments