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The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. This country report forms part of the Global Forest Resources Assessment 2005 (FRA 2005), which is the most comprehensive assessment to date. More than 800 people have been involved, including 172 national correspondents and their colleagues, an Advisory Group, international experts, FAO staff, consultants and volunteers. Information has been collated from 229 countries and territories for three points in time: 1990, 2000 and 2005.

The reporting framework for FRA 2005 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes more than 40 variables related to the extent, condition, uses and values of forest resources. More information on the FRA 2005 process and the results - including all the country reports - is available on the FRA 2005 Web site (www.fao.org/forestry/fra2005).

The Global Forest Resources Assessment process is coordinated by the Forestry Department at FAO headquarters in Rome. The contact person for matters related to FRA 2005 is:

Mette Løyche Wilkie
Senior Forestry Officer
FAO Forestry Department
Viale delle Terme di Caracalla
Rome 00100, Italy

E-mail: Mette.LoycheWilkie@fao.org

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

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The Global Forest Resources Assessment 2005 Country Report Series is designed to document and make available the information forming the basis for the FRA 2005 reports. The Country Reports have been compiled by officially nominated country correspondents in collaboration with FAO staff. Prior to finalisation, these reports were subject to validation by forestry authorities in the respective countries.

Report preparation and contact person

No report has been received from Azerbaijan.

This report is the result of a desk study prepared by the FRA 2005 secretariats in Rome and Geneva, which is based on the existing available information using the established format for FRA 2005 country reports.

Contents

1	TABLE T1 – EXTENT OF FOREST AND OTHER WOODED LAND	5
1.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
1.2	NATIONAL DATA.....	5
1.3	ANALYSIS AND PROCESSING OF NATIONAL DATA.....	5
1.4	RECLASSIFICATION INTO FRA 2005 CLASSES	5
1.5	DATA FOR NATIONAL REPORTING TABLE T1	5
1.6	COMMENTS TO NATIONAL REPORTING TABLE T1	5
2	TABLE T2 – OWNERSHIP OF FOREST AND OTHER WOODED LAND	5
2.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
2.2	NATIONAL DATA.....	5
2.3	ANALYSIS AND PROCESSING OF NATIONAL DATA.....	5
2.4	DATA FOR NATIONAL REPORTING TABLE T2	5
2.5	COMMENTS TO NATIONAL REPORTING TABLE T2	5
3	TABLE T3 – DESIGNATED FUNCTION OF FOREST AND OTHER WOODED LAND	5
3.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
3.2	NATIONAL DATA.....	5
3.3	ANALYSIS AND PROCESSING OF NATIONAL DATA.....	5
3.4	RECLASSIFICATION INTO FRA 2005 CLASSES	5
3.5	DATA FOR NATIONAL REPORTING TABLE T3	5
4	TABLE T4 – CHARACTERISTICS OF FOREST AND OTHER WOODED LAND	5
4.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
4.2	NATIONAL DATA.....	5
4.3	ANALYSIS AND PROCESSING OF NATIONAL DATA.....	5
4.4	RECLASSIFICATION INTO FRA 2005 CLASSES	5
4.5	DATA FOR NATIONAL REPORTING TABLE T4	5
5	TABLE T5 – GROWING STOCK	5
5.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
5.2	NATIONAL DATA.....	5
5.3	ANALYSIS AND PROCESSING OF NATIONAL DATA.....	5
5.4	RECLASSIFICATION INTO FRA 2005 CLASSES	5
5.5	DATA FOR NATIONAL REPORTING TABLE T5	5
6	TABLE T6 – BIOMASS STOCK.....	5
6.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
6.2	NATIONAL DATA.....	5
6.3	ANALYSIS AND PROCESSING OF NATIONAL DATA.....	5
6.4	RECLASSIFICATION INTO FRA 2005 CLASSES	5
6.5	DATA FOR NATIONAL REPORTING TABLE T6	5
7	TABLE T7 – CARBON STOCK.....	5
7.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
7.2	NATIONAL DATA.....	5
7.3	ANALYSIS AND PROCESSING OF NATIONAL DATA.....	5
7.4	RECLASSIFICATION INTO FRA 2005 CLASSES	5
7.5	DATA FOR NATIONAL REPORTING TABLE T7	5
8	TABLE T8 – DISTURBANCES AFFECTING HEALTH AND VITALITY	5
8.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
8.2	NATIONAL DATA.....	5
8.3	ANALYSIS AND PROCESSING OF NATIONAL DATA.....	5
8.4	RECLASSIFICATION INTO FRA 2005 CLASSES	5
8.5	DATA FOR NATIONAL REPORTING TABLE T8	5

9	TABLE T9 – DIVERSITY OF TREE SPECIES	5
9.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
9.2	NATIONAL DATA.....	5
9.3	DATA FOR NATIONAL REPORTING TABLE T9	5
10	TABLE T10 – GROWING STOCK COMPOSITION	5
11	TABLE T11 – WOOD REMOVAL	5
11.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
11.2	NATIONAL DATA.....	5
11.3	ANALYSIS AND PROCESSING OF NATIONAL DATA.....	5
11.4	RECLASSIFICATION INTO FRA 2005 CLASSES	5
11.5	DATA FOR NATIONAL REPORTING TABLE T11	5
12	TABLE T12 – VALUE OF WOOD REMOVAL	5
13	TABLE T13 – NON-WOOD FOREST PRODUCT REMOVAL	5
14	TABLE T14 – VALUE OF NON-WOOD FOREST PRODUCT REMOVAL	5
15	TABLE T15 – EMPLOYMENT IN FORESTRY	5
15.1	FRA 2005 CATEGORIES AND DEFINITIONS.....	5
15.2	NATIONAL DATA.....	5
15.3	ANALYSIS AND PROCESSING OF NATIONAL DATA.....	5
15.4	RECLASSIFICATION INTO FRA 2005 CLASSES	5
15.5	DATA FOR NATIONAL REPORTING TABLE T15	5

1 Table T1 – Extent of Forest and Other wooded land

1.1 FRA 2005 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds <i>in situ</i> . It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified as “Forest”, spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds <i>in situ</i> ; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as “Forest” or “Other wooded land”.
Other land with tree cover (Subordinated to “Other land”)	Land classified as “Other land”, spanning more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.

1.2 National data

1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand		(Forest, OWL) Forest, OWL, Other land	1983,1988	Secondary data source.
FAO, 2001. Global Forest Resources Assessment 2000. FAO Forestry Paper 140.			1990, 2000	Secondary data source.
FAOSTAT data, 2004.		Total area, Land area		
UNECE environmental performance review, Azerbaijan, 2004, Environmental Performance Reviews Series No.19. http://www.countryanalyticwork.net/CAW/Cawdoc/lib.nsf/0/7E8C14AF9756CDC485256FB00048D69F/\$file/pdf+file+with+maps.pdf		Woodland area	1984,2001	Secondary data source.
State Land and Cartography Committee of Azerbaijan Republic, The State Statistical Committee of Azerbaijan Republic, http://www.azstat.org/statinfo/environment/en/010.shtml#s1		Wooded area	1990,2000, 2004	
UNECE/FAO 2000 enquiry data, Manuscript, July 1999		Land reserved for Forestry, Forest, OWL,	1999	

The FAO 2001 report mainly used data published by UNECE/ FAO 2000.

1.2.2 Classification and definitions

The classification and definitions used in the UNECE/FAO 2000 report are the same as those being used by FRA 2005.

1.2.3 Original data

The UNECE/FAO 2000 figures of land cover categories are presented in the table below. The State Statistical Committee of Azerbaijan Republic (based on the official statistics of the State Statistical Committee) gives the figure of “wooded area” as 1038 000 ha for the years 1990, 2000 and 2003. In the manuscript attached to UNECE/FAO 2000 inquiry, the “total forest area” was defined to be 1213 700 ha (14 % of the territory), of which the area covered by forest was 989 300 ha. However, in the UNECE environmental performance review it is stated that by 2001 this “total forest area” percentage had declined, to approximately 11% of the territory, and there is concern that the actual figure could be lower because of deforestation.

The UNECE/FAO 2000 figures will be used for basis of the analysis, since the definition of “wooded area” or “total forest area” in the national documents is not clearly defined.

Category	Area (1000 ha)	
	1983	1988
Forest	870	935.5
Other wooded land	52	54
Sub-total Forest and Other wooded land	922	989.5
Other land	NDA	7352
Sub-total Land area	NDA	8341.5
Inland water	NDA	300
Total area	NDA	8641.5

Source: UNECE/FAO 2000, Reference years: 1983 and 1988

1.3 Analysis and processing of national data

1.3.1 Calibration

The total land area figure reported by UNECE/FAO 2000 is larger than the FAOSTAT land area as well as the total area of the country. Hence calibration is applied: The forest and OWL areas are assumed to be correct and the Other land class is adjusted so that the total land area figure will match the FAOSTAT land area (8260). Also, for the Inland water area, the FAOSTAT estimate (400) is applied. This calibration is applied to the Other land category in the National reporting table.

Calibrated national data

Category	Area (1000 ha)	
	1983	1988
Forest	870	935.5
Other wooded land	52	54
Sub-total Forest and Other wooded land	922	989.5
Other land	NDA	7270.5
Sub-total Land area	NDA	8260
Inland water	NDA	400
Total area	NDA	8660

1.3.2 Estimation and forecasting

Taking into account the estimate of deforestation given in the UNECE environmental performance review, there is no basis to use the positive change rate between the 1983 and 1988 figures for forest and OWL for forecasting. The UNECE/FAO 2000 figures for year 1988 will therefore be used as they are for all three reporting years.

1.4 Reclassification into FRA 2005 classes

No further reclassification is needed, as the national data are already presented according to the FRA 2005 categories.

1.5 Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Forest	936	936	936
Other wooded land	54	54	54
Other land	7270	7270	7270
...of which with tree cover ¹⁾	NDA	NDA	NDA
Inland water bodies	400	400	400
TOTAL	8660	8660	8660

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

1.6 Comments to National reporting table T1

FRA 2000 reported an estimated forest area of 1 904 (000) ha for year 2000 based on the 1988 estimate and a positive change rate of 13 (000) ha calculated based on the 1983 and 1988 figures.

However, the UNECE Environmental Performance review of 2001 reported a decline in forest area in recent years, without providing more detailed information. For this reason, the 1988 estimates for forest and other wooded land were used for all three reporting years.

2 Table T2 – Ownership of Forest and Other wooded land

2.1 FRA 2005 Categories and definitions

Category	Definition
Private ownership	Land owned by individuals, families, private co-operatives, corporations, industries, religious and educational institutions, pension or investment funds, and other private institutions.
Public ownership	Land owned by the State (national, state and regional governments) or government-owned institutions or corporations or other public bodies including cities, municipalities, villages and communes.
Other ownership	Land that is not classified either as “Public ownership” or as “Private ownership”.

2.2 National data

2.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand (TBFRA 2000)		Ownership (forest, OWL)	1988	Secondary data source.

2.2.2 Classification and definitions

The definitions of public and private ownership according to UNECE/FAO 2000 are the same as those being used by FRA 2005.

2.3 Analysis and processing of national data

2.3.1 Calibration

2.3.2 Estimation and forecasting

The ownership percentage for the year 1988 in UNECE/FAO 2000 is applied to both reporting years.

2.4 Data for National reporting table T2

FRA 2005 Categories	Area (1000 hectares)			
	Forest		Other wooded land	
	1990	2000	1990	2000
Private ownership	0	0	0	0
Public ownership	935.5	935.5	54	54
Other ownership	0	0	0	0
TOTAL	935.5	935.5	54	54

2.5 Comments to National reporting table T2

As the changes in the economies of countries in transition are going on rapidly, the information in Table T2, which is based on 1988 data, may not accurately reflect the current situation with regard to the ownership of Forest and Other wooded land in Azerbaijan.

3 Table T3 – Designated function of Forest and Other wooded land

3.1 FRA 2005 Categories and definitions

Types of designation

Category	Definition
Primary function	A designated function is considered to be primary when it is significantly more important than other functions. This includes areas that are legally or voluntarily set aside for specific purposes.
Total area with function	Total area where a specific function has been designated, regardless whether it is primary or not.

Designation categories

Category / Designated function	Definition
Production	Forest / Other wooded land designated for production and extraction of forest goods, including both wood and non-wood forest products.
Protection of soil and water	Forest / Other wooded land designated for protection of soil and water.
Conservation of biodiversity	Forest / Other wooded land designated for conservation of biological diversity.
Social services	Forest / Other wooded land designated for the provision of social services.
Multiple purpose	Forest / Other wooded land designated to any combination of: production of goods, protection of soil and water, conservation of biodiversity and provision of social services and where none of these alone can be considered as being significantly more important than the others.
No or unknown function	Forest / Other wooded land for which a specific function has not been designated or where designated function is unknown.

3.2 National data

3.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand (TBFRA 2000)		Areas available for wood supply, Areas not available for wood supply, IUCN protected area categories, soil protection management areas	1988	Secondary data source.
UNECE environmental performance review, Azerbaijan, 2004, Environmental Performance Reviews Series No.19. http://www.countryanalyticwork.net/CAW/Cawdoclib.nsf/0/7E8C14AF9756CDC485256FB00048D69F/\$file/pdf+file+with+maps.pdf		Protected areas	2000, 2003	Secondary data source, contains data from Chemonics International/USAID's Bureau of Europe and NIS, Biodiversity Assessment, 2000. Ministry of Ecology and Natural Resources, 2003.

Ministry of Ecology and Natural Resources of Azerbaijan Republic, WWW-pages, http://eco.gov.az/v2.1/en/forest/ , date 18.3.2005.		Soil protection management areas		
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3.2.2 Classification and definitions

The original data is assumed to follow the definitions of UNECE/FAO 2000.

3.2.3 Original data

Protected areas

“Protected area categories defined by the Law on Specially Protected Natural Areas and Objects (2000) include those that are international (some natural reserves), national (State reserves and national parks) and local (natural reserves, natural monuments, zoological parks, botanical gardens and dendrological parks, health resorts)... Currently, there are 37 protected areas, of which 14 are strict nature reserves, 20 are sanctuaries and 3 are national parks ... Strict nature reserves correspond to the first protection category of the World Conservation Union (IUCN). According to the National Report on the Ecological Network (2001), they occupy 192,235 ha (2.2% of the country)... Sanctuaries and other protected categories (including endemic and relict forests) occupy 379,000 ha or 4.3% of Azerbaijan’s territory. They have a weaker conservation status and are managed either by strict nature reserve managers or by the regional authorities. In 2003 the area of strict nature reserves amounted to 206,937 ha, the area of national parks – 84,428 ha, and the area of sanctuaries – 273,860 ha with combined area covering 7% of the country’s territory” (*UNECE environmental performance review, 2004*).

Unfortunately, the report provides no details regarding the extent of forests and other wooded land within each of the above categories.

UNECE/FAO 2000 reports that for 1988 the IUCN categories I and II area was 72 000 ha and III and IV 864 000 ha for forest and 15 000 ha and 39 000 ha for OWL, respectively.

Forest area available for wood supply.

UNECE/FAO 2000 reports that for 1988 151 000 ha out of the total area of forest, 934 000 ha, were available for wood supply and 15 000 ha of OWL of total 54 000 ha was available for wood supply. 63 300 ha of forest was not available for wood supply due to conservation on the protection reasons.

Areas where forest and OWL is managed primarily for soil protection.

Most of the forests of Azerbaijan by being located on steep mountain slopes are very significant in terms of soil reinforcement, water purification and climate betterment (*Ministry of Ecology and Natural Resources of Azerbaijan Republic*). UNECE/FAO (TBFRA 2000) reports that for 1988, areas of forest and OWL managed primarily for soil protection were 889 000 ha and 52 000 ha, correspondingly.

The summary of the information for 1988 is shown below:

TBFRA 2000 class	Area (1000 ha), 1988	
	forest	OWL
Forest managed primarily for soil protection	889	52
Area available wood supply	151	15
IUCN I & II classes	72	15
IUCN III & IV classes	864	39

3.3 Analysis and processing of national data

3.3.1 Calibration

The calibrated forest areas from National reporting table T1 are used.

3.3.2 Estimation and forecasting

No estimation and forecasting have been done, since there is no reliable basis to do it. The UNECE/FAO (TBFRA 2000) 1988 figures are used for all three reporting years.

3.4 Reclassification into FRA 2005 classes

As can be seen from the table in 3.2.3, there is an overlap between the various functions and the total area is much larger than the total forest area in T1. The figures are more closely related to the concept of “Total area with function” than to “Primary function” and have, therefore, been used for this purpose.

The primary function has been estimated according to priorities presented in the following table.

Forest Designated functions

TBFRA 2000 class	FRA 2005 Designated function	Priority in calculation
Forest managed primarily for soil protection	100% Protection of soil and water	2 nd
IUCN I & II classes	100% Conservation of biodiversity	1 st
Area available for wood supply	100 % Production	3 rd
Other	100% No or unknown function	4 th

3.5 Data for National reporting table T3

FRA 2005 Categories / Designated function	Area (1000 hectares)					
	Primary function			Total area with function		
	1990	2000	2005	1990	2000	2005
Forest						
Production	0	0	0	151	151	151
Protection of soil and water	864	864	864	889	889	889
Conservation of biodiversity	72	72	72	72	72	72
Social services	ID	ID	ID	ID	ID	ID
Multiple purpose	0	0	0	not appl.	not appl.	not appl.
No or unknown function	0	0	0	not appl.	not appl.	not appl.
Total - Forest	936	936	936	not appl.	not appl.	not appl.
Other wooded land						
Production	0	0	0	15	15	15
Protection of soil and water	39	39	39	52	52	52
Conservation of biodiversity	15	15	15	15	15	15
Social services	ID	ID	ID	ID	ID	ID
Multiple purpose	0	0	0	not appl.	not appl.	not appl.
No or unknown function	0	0	0	not appl.	not appl.	not appl.
Total – Other wooded land	54	54	54	not appl.	not appl.	not appl.

4 Table T4 – Characteristics of Forest and Other wooded land

4.1 FRA 2005 Categories and definitions

Category	Definition
Primary	Forest / Other wooded land of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Modified natural	Forest / Other wooded land of naturally regenerated native species where there are clearly visible indications of human activities.
Semi-natural	Forest / Other wooded land of native species, established through planting, seeding or assisted natural regeneration.
Productive plantation	Forest / Other wooded land of introduced species, and in some cases native species, established through planting or seeding mainly for production of wood or non wood goods.
Protective plantation	Forest / Other wooded land of native or introduced species, established through planting or seeding mainly for provision of services.

4.2 National data

4.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand (TBFRA 2000)		Forest and other wooded land by categories of “naturalness”	1997	Secondary data source.
The State Statistical Committee of Azerbaijan Republic, http://www.azstat.org/statinfo/environment/en/		Reforestation area	1999-2003	

4.2.2 Classification and definitions

National class	Definition
Undisturbed by man	No human disturbance at all or disturbance so long ago that natural processes have been completely re-established.
Semi-natural forest/other wooded land	Forest / Other wooded land that is neither “Forest / Other wooded land undisturbed by man” nor “Plantation”.
Plantation(s)	Forest stands established by planting or/and seeding in the process of afforestation or reforestation. They are either: <ul style="list-style-type: none"> • Of introduced species (all planted stands), or • Intensively managed stands of indigenous species which meet all the following criteria: one or two species at plantation, even age class, regular spacing.

Note that the term “Semi-natural” as defined above corresponds to the sum of both “Semi-natural” and “Modified natural” in the FRA 2005 definition.

4.2.3 Original data

The reforestation by sowing and planting has been on average 2 500 ha/y in Azerbaijan between 1999-2003 (*Reestablishment of forests of state importance, The State Statistical Committee of Azerbaijan Republic*).

Category of Forest	1988, Area (1000ha)	1988, %
Forest:	935.5	100.00
Undisturbed by man	400	42.76
Semi-natural	515.5	55.10
Plantations	20	2.14
Other wooded land:	54	100.00
Undisturbed by man	15	27.77
Semi-natural	39	72.33

Source: UNECE/FAO, 2000

4.3 Analysis and processing of national data

4.3.1 Calibration

4.3.2 Estimation and forecasting

The percentages reported in the UNECE/FAO 2000 have been applied to the estimated forest and OWL area from T1 to obtain the Category areas for 1990, 2000 and 2005.

Category	1990, Area (1000ha)	2000, Area (1000ha)	2005, Area (1000ha)
Forests			
Undisturbed by man	400	400	400
Semi-natural	516	516	516
Plantations	20	20	20
Other wooded land			
Undisturbed by man	15	15	15
Semi-natural	39	39	39

4.4 Reclassification into FRA 2005 classes

In order to reclassify the national data for the category “semi-natural” into the FRA 2005 categories, some knowledge on regeneration methods used is indispensable. Since this information is lacking, all the area reported by UNECE/FAO 2000 as “semi-natural” has been assigned to the “modified natural” category. Since the major primary function of the forests is protective (see T3), all area reported as “plantations” has been assigned to the “Protective plantation” category.

4.5 Data for National reporting table T4

FRA 2005 Categories	Area (1000 hectares)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Primary	400	400	400	15	15	15
Modified natural	516	516	516	39	39	39
Semi-natural	ID	ID	ID	0	0	0
Productive plantation	ID	ID	ID	0	0	0
Protective plantation	20	20	20	0	0	0
TOTAL	936	936	936	54	54	54

5 Table T5 – Growing stock

5.1 FRA 2005 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.
Commercial growing stock	The part of the growing stock of species that are considered as commercial or potentially commercial under current market conditions, and with a diameter at breast height of Z cm or more.

5.2 National data

5.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand (TBFRA 2000)		growing stock	1983,1988	Secondary data source.
UNECE environmental performance review, Azerbaijan, 2004, Environmental Performance Reviews Series No.19.		Forest area, fellings	2000,2003	
Ministry of Ecology and Natural Resources of Azerbaijan Republic, WWW-pages, http://eco.gov.az/v2.1/en/forest/ , date 18.3.2005.		Growing stock		

5.2.2 Classification and definitions

National class	Definition
Growing stock	The living tree component of the standing volume
Growing stock on forest available for wood supply	GS on forest where legal, economic or specific environmental restrictions do not have any significant impact on the supply of wood

5.2.3 Original data

Category	1983	1988
Growing stock on Forest (1000 m3)	119000	127440
...of which available for wood supply (1000 m3)	NDA	26000
Growing stock on OWL (1000 m3)	NDA	NDA

Source: UNECE/FAO 2000 (secretariat estimate), reference years 1983, 1988

The proportion of the growing stock available for wood supply of the total growing stock on forest land, 0.2040, is used to calculate the corresponding figures for the FRA reporting years.

5.3 Analysis and processing of national data

5.3.1 Calibration

No calibration was needed as the UNECE/FAO, 2000 forest and OWL areas were used.

5.3.2 Estimation and forecasting

Quotation: “According to the latest forest inventory of 1984, the total woodland area of Azerbaijan was 1,213,700 ha, or 14% of the territory. By 2001, the percentage had declined, to approximately 11% of the territory, and there is concern that the actual figure could be lower because of deforestation...”.

Quotation: “During the mission, it was reported that the average annual forest cut was about 60,000 m³ for sanitary and maintenance purposes only. However, from 2003 forest cuttings for sanitary purposes have been suspended and only forest residues are collected. It was also roughly estimated that an additional 30,000-40,000 m³ per year is cut illegally.”
(UNECE environmental performance review)

Quotation: “Wood capacity in pistachio forests is 59,73 million cubic meters, oak forests is 27,97 million cubic meters and hornbeam forests is 26,22 million cubic meters. The overall wood capacity of mountain forests is 110,92 million cubic meters or 81,4 percent” (Ministry of Ecology and Natural Resources of Azerbaijan Republic).

Based on the UNECE environmental review, it is obvious that the UNECE/FAO 2000 estimates of growing stock for 1983 and 1988 can not be used as basis for forecasting (especially 2000 and 2005), although the according the Ministry of Ecology and Natural Resources the growing stock would have increased. The UNECE/FAO (TBFRA 2000) 1988 figures are used to report year 1990, 2000 and 2005.

5.4 Reclassification into FRA 2005 classes

No further reclassification is needed.

5.5 Data for National reporting table T5

FRA 2005 Categories	Volume (million cubic meters over bark)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Growing stock	127	127	127	ID	ID	ID
Commercial growing stock	26	26	26	ID	ID	ID

Specification of country threshold values	Unit	Value	Complementary information
1. Minimum diameter at breast height of trees included in Growing stock (X)	Cm	NDA	
2. Minimum diameter at the top end of stem (Y) for calculation of Growing stock	Cm	NDA	
3. Minimum diameter of branches included in Growing stock (W)	Cm	NDA	
4. Minimum diameter at breast height of trees in Commercial growing stock (Z)	Cm	NDA	
5. Volume refers to “Above ground” (AG) or “Above stump” (AS)	AG / AS	NDA	
6. Have any of the above thresholds (points 1 to 4) changed since 1990	Yes/No	NDA	
7. If yes, then attach a separate note giving details of the change	Attachment		

6 Table T6 – Biomass stock

6.1 FRA 2005 Categories and definitions

Category	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass	All living biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood biomass	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.

6.2 National data

6.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand (TBFRA 2000)		Above stump biomass, Biomass of stumps and roots	1988	Secondary data source.

6.2.2 Classification and definitions

The UNECE/FAO 2000 report distinguishes two categories of biomass: Above-stump biomass and Stump and root biomass. There is a small difference in the definitions of the biomass fractions as compared to FRA 2005 regarding the stump biomass. In UNECE/FAO 2000 the stump biomass is grouped together with the root biomass, while in FRA 2005 the above-ground portion of the stump belongs to Above-ground biomass.

6.2.3 Original data

The 1988 data presented in the following table has been obtained from UNECE/FAO 2000 and the original questionnaire received from Azerbaijan for UNECE/FAO 2000. The original data will then be as follows:

Category	1988, Tg biomass (Oven dry weight)	
	Forest	OWL & trees outside forest
Above stump biomass	98.58	ID
Stump and root biomass	17.25	ID
Proportion of Above	0.8512	ID

stump biomass of total BM		
Total woody biomass	115.83	ID

Source: UNECE/FAO 2000, reference year 1988.

Note that one Teragram (Tg) is 1×10^{12} g and equals one million metric tonne. The above data only refer to Forest. No information on biomass of dead wood was found.

6.3 Analysis and processing of national data

6.3.1 Calibration

No calibration was needed.

6.3.2 Estimation and forecasting

Based on the same reasoning as for T5, the UNECE/FAO (TBFRA 2000) 1988 figures are used to report years 1990, 2000 and 2005.

6.4 Reclassification into FRA 2005 classes

”Above-stump biomass” is considered to correspond to “Above-ground biomass” and “Stump and root biomass” is considered to correspond to “Below-ground biomass”.

6.5 Data for National reporting table T6

FRA 2005 Categories	Biomass (million metric tonnes oven-dry weight)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Above-ground biomass	98.58	98.58	98.58	ID	ID	ID
Below-ground biomass	17.25	17.25	17.25	ID	ID	ID
Dead wood biomass	NDA	NDA	NDA	NDA	NDA	NDA
TOTAL	115.83	115.83	115.83	ID	ID	ID

7 Table T7 – Carbon stock

7.1 FRA 2005 Categories and definitions

Category	Definition
Carbon in above-ground biomass	Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all living 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 biomass	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 a minimum diameter chose by the country for lying dead (for example 10 cm), in various states of decomposition above the mineral or organic soil. This includes the litter, fomic, and humic layers.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a specified depth chosen by the country and applied consistently through the time series.

7.2 National data

7.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
National reporting table T6		Woody biomass: above stump, stump and root biomass		

7.2.2 Classification and definitions

The UNECE/FAO 2000 reports on two categories: Carbon in above-stump biomass and Carbon in stump and rood biomass. There is a small difference in the definitions of the biomass fractions as compared to FRA 2005 regarding the stump biomass. In UNECE/FAO 2000 the stump biomass is grouped together with the root biomass, while in FRA 2005 the above-ground portion of the stump belongs to Above-ground biomass.

7.2.3 Original data

Forest carbon data were estimated using biomass data (as coming from table 6) multiplied by the default conversion factor of 0.5. This was the procedure applied in the UNECE/FAO 2000 report too obtain carbon stock of woody biomass.

7.3 Analysis and processing of national data

7.3.1 Calibration

No calibration was needed.

7.3.2 Estimation and forecasting

See table T6.

7.4 Reclassification into FRA 2005 classes

”Above-stump biomass” is considered to correspond to “Above-ground biomass” and “Stump and root biomass” is considered to correspond to “Below-ground biomass”.

7.5 Data for National reporting table T7

FRA 2005 Categories	Carbon (Million metric tonnes)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Carbon in above-ground biomass	49.29	49.29	49.29	ID	ID	ID
Carbon in below-ground biomass	8.625	8.625	8.625	ID	ID	ID
Sub-total: Carbon in living biomass	57.92	57.92	57.92	ID	ID	ID
Carbon in dead wood	NDA	NDA	NDA	NDA	NDA	NDA
Carbon in litter	NDA	NDA	NDA	NDA	NDA	NDA
Sub-total: Carbon in dead wood and litter	NDA	NDA	NDA	NDA	NDA	NDA
Soil carbon to a depth of _____ cm	NDA	NDA	NDA	NDA	NDA	NDA
TOTAL CARBON	NDA	NDA	NDA	NDA	NDA	NDA

8 Table T8 – Disturbances affecting health and vitality

8.1 FRA 2005 Categories and definitions

Category	Definition
Disturbance by fire	Disturbance caused by wildfire, independently whether it broke out inside or outside the forest/OWL.
Disturbance by insects	Disturbance caused by insect pests that are detrimental to tree health.
Disturbance by diseases	Disturbance caused by diseases attributable to pathogens, such as a bacteria, fungi, phytoplasma or virus.
Other disturbance	Disturbance caused by other factors than fire, insects or diseases.

8.2 National data

8.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand (TBFRA 2000)		Fire, Insects & disease, Wildlife & grazing, Pollution, Abiotic factors	1988-1997 (fire); 1992-1997	Secondary data source. Original questionnaire data (forest fires).
The State Statistical Committee of Azerbaijan Republic , http://www.azstat.org/statinfo/environment/en/		Forest fires, Areas as sources of diseases and forest pests	1995, 1999-2002 (fires); 1990, 1995, 1999-2003	
UNECE environmental performance review , Azerbaijan, 2004, Environmental Performance Reviews Series No.19. http://www.countryanalyticwork.net/CAW/Cawdoclib.nsf/0/7E8C14AF9756CDC485256FB00048D69F/\$file/pdf+file+with+maps.pdf		Grazing	2000,2003	

8.2.2 Classification and definitions

The UNECE/FAO 2000 classification is on area of damage to forest and other wooded land and the burnt areas by forest fires. It should be noted that the level of damage qualifying for entry to statistics was not supplied by the countries in most cases in the UNECE/FAO 2000 report.

National class	Definition
Forest Fire	Fire which breaks out and spreads on forest and other wooded land or which breaks out on other land and spreads to forest and other wooded land. <i>Excludes:</i> Prescribed or controlled burning, usually with the purpose of reducing or eliminating the quantity of accumulated fuel on the ground.

8.2.3 Original data

Grazing and illegal cuttings are mentioned to be the two major factors causing the degradation of forests in Azerbaijan. Fencing is done on forest areas in which there is young growth, which needs to be preserved, to keep livestock out. (*UNECE environmental performance review*)

Category	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1988-1992 average
	1000 hectares										
Area of Forest burnt	0	0	0	0.06	0.07	0.012	0.007	0.04	0	0	0.026
Area of Other wooded land burnt	0	0	0	0	0.01	0.018	0	0.01	0	0	0.002
Total area burnt	0	0	0	0.06	0.08	0.03	0.007	0.05	0	0	0.028

Source: UNECE/FAO 2000, original questionnaires received from Azerbaijan.

Category	1999	2000	2001	2002	2003	1999-2002 average
	1000 hectares					
Area of Forest burnt	0.124	0.386	0.016	0.060	0	0.147
Area of Other wooded land burnt	NDA	NDA	NDA	NDA	NDA	NDA
Total area burnt	0.124	0.386	0.016	0.060	0	0.147

Source: The State Statistical Committee of Azerbaijan Republic.

Category	1990	1995	1999	2000	2001	2002	2003
	1000 hectares						
Areas as sources of diseases and forest pests to the end of year	33.2	17.6	27.2	35.8	0.1	2.1	12.0
of which sources needing control activities	33.1	14.4	16.4	28.6	0.1	2.1	0.0

Source: The State Statistical Committee of Azerbaijan Republic.

In the UNECE/FAO 2000 original inquiry the area primarily damaged by insects and disease was 115 ha on average for period 1992-1997.

8.3 Analysis and processing of national data

8.3.1 Estimation and forecasting

The Disturbance by fire is reported for forest applying the means of 1988-1992 and 1999-2002 for years 1990 and 2000, respectively. The figures from the national data source table (*The State Statistical Committee of Azerbaijan Republic*) of areas needing control activities due to pests or diseases are used as significant disturbance estimates. The 1990 figure is used for FRA reporting year 1990 and the yearly averages of 1999-2002 are used for the year 2000. All damages are assumed to have occurred in forests.

8.4 Reclassification into FRA 2005 classes

Reclassification was done as follows:

National Category\FRA category	Fire	Insects	Diseases	Other disturbances
Fire	100 %			
Areas as sources of diseases and forest pests		50 %	50 %	

8.5 Data for National reporting table T8

FRA-2005 Categories	Average annual area affected (1000 hectares)			
	Forests		Other wooded land	
	1990	2000	1990	2000
Disturbance by fire	0.026	0.147	0.002	NDA
Disturbance by insects	16.6	5.9	NDA	NDA
Disturbance by diseases	16.6	5.9	NDA	NDA
Other disturbance	NDA	NDA	NDA	NDA

9 Table T9 – Diversity of tree species

9.1 FRA 2005 Categories and definitions

Category	Definition
Number of native tree species	The total number of native tree species that have been identified within the country.
Number of critically endangered tree species	The number of native tree species that are classified as “Critically endangered” in the IUCN red list.
Number of endangered tree species	The number of native tree species that are classified as “Endangered” in the IUCN red list.
Number of vulnerable tree species	The number of native tree species that are classified as “Vulnerable” in the IUCN red list.

9.2 National data

9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand (TBFRA 2000)		Number of tree species	1988	Secondary data source.
IUCN Red List of threatened species		Number of threatened tree species	2000	

9.2.2 Original data

In the respond to questionnaire for UNECE/FAO 2000, Azerbaijan reported 109 native tree species.

There were no threatened tree species found in IUCN Red List

<http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=5461&sitetreeId=20747&langId=1&geoId=0>.

9.3 Data for National reporting table T9

FRA 2005 Categories	Number of species (year 2000)
Native tree species	109
Critically endangered tree species	0
Endangered tree species	0
Vulnerable tree species	0

10 Table T10 – Growing stock composition

Some tree species composition and volume figures are found in the Internet pages of *Ministry of Ecology and Natural Resources of Azerbaijan Republic*, (<http://eco.gov.az/v2.1/en/forest/>, date 18.3.2005): Quotation: “Forest areas categorized with regard to prevalent species are distributed approximately as follows: Pine- 0,3, juniper - 1,3, pistachio - 31,9, oak - 31,5, hornbeam - 22,4, goyrush - 0,9, aghjagayin - 0,3, bushes - 2,2, birch - 0,14, govag - 0,81, gizilaghaj - 0,82, lime-tree - 0,10, other species - 8,06. Despite the forests being very diverse in composition broadleaf forests are generated mainly by pistachio, oak and hornbeam. These three species constitute 85,8 percent of the territory covered with forests”...

“Wood capacity in pistachio forests is 59,73 million cubic meters, oak forests is 27,97 million cubic meters and hornbeam forests is 26,22 million cubic meters. The overall wood capacity of mountain forests is 110,92 million cubic meters or 81,4 percent”. However, these data do not support enough to fully present the table T10 estimates of the growing stock composition for particular reporting years.

11 Table T11 – Wood removal

11.1 FRA 2005 Categories and definitions

Category	Definition
Industrial wood removal	The wood removed (volume of roundwood over bark) for production of goods and services other than energy production (woodfuel).
Woodfuel removal	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

11.2 National data

11.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAOSTAT, 2004		Wood production		

11.2.2 Classification and definitions

FAOSTAT uses the same definition of the categories Industrial roundwood and Woodfuel as FRA 2005. It is assumed that the term “Production” used in FAOSTAT can be used as a good estimate of “Removal”, although these terms are not identical. FRA 2005 requests information on wood removal as volume over bark while the FAOSTAT figures refer to volume under bark. The figures are converted from volume under bark to volume over bark by application of a bark factor. The bark factor used is the “global” default conversion factor of 1.15.

11.2.3 Original data

FAOSTAT provides the following data on wood production for the period 1998 – 2003:

Category	Volume m ³ under bark						
	1998	1999	2000	2001	2002	Average 1998-2002	2003
Industrial roundwood	6400	6400	7100	7100	7100	6820	7100
Woodfuel	6200	6200	6400	6400	6400	6320	6400
Total	12600	12600	13500	13500	13500	13140	13500

There was no data for the 1988-1992 period in the FAOSTAT database. The figures are assumed to represent removals from forest.

The State Statistical Committee of Azerbaijan Republic gives the following figures for Felling of forest for protection and sampling sanitary:

Category	Volume 1000 m ³ under bark ¹⁾						
	1990	1995	1999	2000	2001	2002	2003
Volume of cutting trees,	105.5	60.9	63.6	71.4	51.1	57.7	7.2
of which suitable wood for use	91.2	53.7	56.9	63.8	45.9	52.7	6.4

1) under bark, not verified.

However, since the Industrial removals are requested, the FAOSTAT figures were used.

11.3 Analysis and processing of national data

The volume figures from FAOSTAT refer to volume under bark, hence these figures must be converted to over-bark figures applying a bark factor. No national bark factor has been found, hence the global bark factor of 1.15 has been applied. The volume over bark is then as follows:

Category	Average 1998-2002 (m ³ over bark)	2003 (m ³ over bark)
Industrial roundwood	7843	8165
Woodfuel	7268	7360
Total	15111	15525

11.3.1 Estimation and forecasting

In the UNECE/FAO 2000 report, the underbark removals was 60 000 m³ for reference period 1988. This is in accordance with the national figures of fellings. However, since the Industrial removals are requested, the FAOSTAT database figures will be used. The average values of 1998-2002 were used as estimates for 2000. The figures for year 2003 were used as forecast for the year 2005.

11.4 Reclassification into FRA 2005 classes

No reclassification was needed.

11.5 Data for National reporting table T11

FRA 2005 Categories	Volume in 1000 cubic meters of roundwood over bark					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Industrial roundwood	NDA	7.8	8.2	NDA	NDA	NDA
Woodfuel	NDA	7.3	7.4	NDA	NDA	NDA
TOTAL for Country	NDA	15.1	15.5	NDA	NDA	NDA

12 Table T12 – Value of wood removal

No information has been found to support estimates of the value of wood removal.

13 Table T13 – Non-wood forest product removal

Quotation: “Azerbaijan forests are also famous for its non-wood resources. In our forests there 150 species of wild fruit plants relating to 35 taxa. These plants produce thousand tons of wild fruits (walnut, apple, peer, zogal, sour plum, azgil, persimmon, chestnut, hazelnut, blackberries). 30 percent of these fruits are of consumption significance”, *Ministry of Ecology and Natural Resources of Azerbaijan Republic*, (<http://eco.gov.az/v2.1/en/forest/>, date 18.3.2005).

14 Table T14 – Value of non-wood forest product removal

No information has been found to support estimates of the value of non-wood forest products removal.

15 Table T15 – Employment in forestry

15.1 FRA 2005 Categories and definitions

Category	Definition
Primary production of goods	Employment in activities related to primary production of goods, like industrial roundwood, woodfuel and non-wood forest products.
Provision of services	Employment in activities directly related to services from forests and woodlands.
Unspecified forestry activities	Employment in unspecified forestry activities.

15.2 National data

15.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
ILO statistics of Employment in forestry, logging and related services, 2003		Employment in forestry, logging and related services		Secondary data

15.2.2 Classification and definitions

Employment in forestry, logging and related services according to ILO, 1990-2000. Comment on Azerbaijan series: “1996-2000 is extrapolated from the employment trend 1990-1995”.

15.3 Analysis and processing of national data

The ILO statistics for the particular years are directly applied.

15.4 Reclassification into FRA 2005 classes

The ILO figures are placed under category “Unspecified”, since there was not enough information about definitions of ILO employment.

15.5 Data for National reporting table T15

FRA 2005 Categories	Employment (1000 person-years)	
	1990	2000
Primary production of goods	ID	ID
Provision of services	ID	ID
Unspecified forestry activities	4.8	2.9
TOTAL	4.8	2.9