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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).

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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.

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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
Reports of Dept. of Range and Forestry.	L	Forest Cover	1996	Estimate is based on reports sent by the regions.
Agriculture Statistics	H	Agricultural Land	2003	
National Forest Inventory (NFI) (Ongoing)	L	Diversity of tree spp., Growing stock.	2005	NFI started in 2001 and expected to finish in 2008.

1.2.2 Classification and definitions

National class	Definition
Forest	It corresponds to FRA 2005 but minimum area not stated.
Riyad, Fiads and Valleys	It corresponds to FRA 2005 (Other wooded Land)
Oasis	Predominantly planted date palms.
Rangeland	Corresponds to FRA 2005 (Other land).
Agricultural Land	Rainfed or irrigated land.
Parks and Gardens	Corresponds to FRA 2005
Others	Cities, Roads, bare hills etc..

1.2.3 Original data

National class	Area (1000 hectares)	
	1996	2003
Forests	2728	
Riyad, Fiads and Valleys	280	
Oasis	250	
Rangelands	170 000	
Agricultural lands		40 700
Parks and gardens	11	
Others	1000	

1.3 Analysis and processing of national data

1.3.1 Calibration

There is no need to perform calibration since the national land area of 214 969 000 hectares matches the FAOSTAT land area.

1.3.2 Estimation and forecasting

Due to lack of other information, the above estimates are used for all 3 reporting years.

1.4 Reclassification into FRA 2005 classes

National class	FRA 2005 Categories				
	Forest	OWL	Other land	Total	OLWTC
Forests	100%			100%	0%
Riyad Fiad and valleys		100%		100%	0%
Oasis			100%	100%	0%
Rangelands		20%	80%	100%	0%
Agricultural lands			100%		0%
Parks and Gardens			100%		0%
Others			100%		0%

The reclassification % for OWL are based on that Riyadh, Fiad and Valleys are wooded areas, while 20% of Rangelands are considered to be covered with natural forests.

1.5 Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Forest	2 728	2 728	2 728
Other wooded land	34 155	34 155	34 155
Other land	178 086	178 086	178 086
...of which with tree cover	0	0	0
Inland water bodies	0	0	0
TOTAL	214 969	214 969	214 969

1.6 Comments to National reporting table T1

- The data on forest area is from 1996 and has been used for all 3 reporting years, which is considered a main weakness.
- The National Forest Inventory will be completed in the year 2008
- Data for Agricultural land and rangelands are somewhat of high quality.
- The Forest area for the year 2000 doesn't match with the one in the previous assessment (FRA 2000, Main Report). The new updated figures are considered more reliable and accurate.

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
Dept. of Range and Forestry reports	H	Forest Ownership	2004	

2.2.2 Classification and definitions

National class	Definition
Private Ownership	It corresponds to FRA 2005 definition
Public ownership	It corresponds to FRA 2005 definition

2.2.3 Original data

In 2004, an estimated 19 000 hectares of forests and 125 000 hectares of other wooded land were privately owned. The rest of the area of forest and other wooded land was publicly owned.

The Original national data matches with the FRA 2005 categories and there is no need to perform any analysis and processing.

2.3 Analysis and processing of national data

The figures for 2004 have been used for both reporting years, due to lack of other information

2.4 Reclassification into FRA 2005 classes

2.5 Data for National reporting table T2

FRA 2005 Categories	Area (1000 hectares)			
	Forest		Other wooded land	
	1990	2000	1990	2000
Private ownership	19	19	125	125
Public ownership	2 709	2 709	34 030	34 030
Other ownership	0	0	0	0
TOTAL	2 728	2 728	34 155	34 155

2.6 Comments to National reporting table T2

The main weakness in the national data is the uncertainty of the forest area of the private ownership.

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
Product ion	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
Dept. of Range and Forestry Reports.	M	Forest functions	1996	

3.2.2 Classification and definitions

National class	Definition
Permanent Forests	Area designated for conservation and protection of the environment.
National Forest Parks	Area designated for the provision of recreation.
No function	Area which has not been designated to any specific function.

There is data for permanent forests. National Forest Parks are considered a part of the Permanent Forests.

3.2.3 Original data

See original data in table 1. All forests and OWL are designated for multiple purposes.

3.3 Analysis and processing of national data

No need to perform analysis.

3.4 Reclassification into FRA 2005 classes

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						
Protection of soil and water						
Conservation of biodiversity						
Social services						
Multiple purpose	2728	2 728	2 728	not appl.	not appl.	not appl.
No or unknown function				not appl.	not appl.	not appl.
Total – Forest	2728	2728	2728	not appl.	not appl.	not appl.
Other wooded land						
Production						
Protection of soil and water						
Conservation of biodiversity						
Social services						
Multiple purpose	34 155	34 155	34 155	not appl.	not appl.	not appl.
No or unknown function				not appl.	not appl.	not appl.
Total – Other wooded land	34 155	34 155	34 155	not appl.	not appl.	not appl.

3.6 Comments to National reporting table T3

It is difficult to breakdown the multiple purpose figures for forests and other wooded lands. All the forests and other wood land in Saudi Arabia are considered protective or have a multiple purpose forests, and there are no management plans at all. According to this, all the Forests and OWL in Saudi Arabia are considered to be under a designated function.

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
Dept. of Range and Forests	M	Naturalness	1996	

4.2.2 Classification and definitions

National class	Definition
Natural forests (primary)	It corresponds to FRA 2005 definition.
Protective plantation	It corresponds to FRA 2005 definition.

4.2.3 Original data

National class	Area (1000 ha)	
	Forest	Other wooded land
	1996	1996
Natural Forest	2 728	34 155
Plantations	-	-
Total	2 728	34 155

4.3 Analysis and processing of national data

No need to carry analysis.

4.4 Data for National reporting table T4

FRA 2005 Categories	Area (1000 hectares)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Primary						
Modified natural	2 728	2 728	2 728	34 155	34 155	34 155
Semi-natural						
Plantation	ID	ID	ID	ID	ID	ID
TOTAL	2 728	2 728	2728	34 155	34 155	34 155

4.5 Comments to National reporting table T4

Introduced species do not regenerate naturally and occupy a very small area.
All forest and OWL areas are considered modified natural.

5 Table 5 – 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
Dept. of Range and Forestry	L	Forest areas	1994	
Partial forest inventory carried out by Attalah in (1984), Natural Forests in Saudi Arabia, and the possibility to exploit it economically.	M	Growing stock	1984	
National Forest Inventory (NFI) (Ongoing)	L	Diversity of tree spp., Growing stock.	2005	Ongoing NFI started in 2001 and expected to finish in 2008.

5.3 Classification and definitions

National class	Definition
Growing stock	Volume over bark of all living trees more than 7cm in diameter at breast height. Includes stem from ground level to a top diameter of 2 cm. It does not include branches.

5.3.1 Original data

National class (Broad classes of forest types)	Volume (m3/ha)
Natural Forest (NF)	8.4
OWL	5.0

The above figures are expert estimates based on a partial inventory undertaken in 1984 and some preliminary findings from the ongoing NFI.

5.4 Analysis and processing of national data

The above average volumes per hectare were applied to the area of forest and other wooded land from Table 1.

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	22.9	22.9	22.9	171	171	171
Commercial growing stock	NDA	NDA	0	NDA	NDA	0

5.6 Comments to National reporting table T5

The weakness is that only one and rough estimation of the growing stock was done in 1984, so the dynamics and productive capacity of forests and other wooded land cannot be understood.

There is no industrial wood production and legal removals of firewood were stopped since three years ago and for the two coming years, so officially there is no wood production during these five years.

The growing stock/hectare was estimated at 4.86 and 1.5 m³/ha for Forest and Other wooded land respectively in 1984. It was then refined to 8.40 and 5 m³/ha respectively based on some results of the on-going forest inventory. This is still a very low figure, but it is the best estimate we have until more results from the ongoing NFI become available.

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
FAO. Working Paper 82. 2004. FAO/Forestry Department	M	Biomass expansion factor. Root-shoot ratio	2004	
FAO. Working Paper 81. 2004.FAO/ Forestry Department	H	Biomass expansion factor. Root-shoot ratio	2004	
Attalah (1984)	M	Biomass	1984	

6.3 Classification and definitions

National class	Definition
Above ground biomass	It corresponds to FRA 2005 definition.
Below ground biomass	It corresponds to FRA 2005 definition.
Dead wood biomass	It corresponds to FRA 2005 definition.

6.3.1 Original data

The final data of table 5 was used as input for the biomass estimations

6.4 Analysis and processing of national data

The following conversion factors were used (tropical Asia, deciduous and broadleaved forests)

Basic wood density for *Zizyphus Spina-christi* is 0.76 and for *Ficus* spp is 0.39, the average was considered 0.6
 Biomass Expansion Factor = 2
 Root-shoot ratio for broadleaf forest < 75 ton/hectare = 0.27
 Dead-live ratio = 0.14

Applying these conversion factors gives the following results:

	G. stock (Million m3)	Basic density (ton/m3)	Stem biomass (million tons)	Biomass exp. fact	A.G biomass (million tons)	Root-Shoot ratio	B.G biomass (million tons)
Forest	22.9151	0.6	13.749	2	27.498	0.27	7.424
OWL	170.7750	0.6	102.465	2	204.930	0.27	55.331

6.5 Data for National reporting table T5

FRA 2005 Categories	Biomass (million metric tonnes oven-dry weight)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Above-ground biomass	27.50	27.50	27.50	204.9	204.9	204.9
Below-ground biomass	7.42	7.42	7.42	55.3	55.3	55.3
Dead wood biomass	4.89	4.89	4.89	36.4	36.4	36.4
TOTAL	39.81	39.81	39.81	296.6	296.6	296.6

6.6 Comments to National reporting table T6

Weakness in the existing data:

Lack of accurate data on growing stock and dead wood volume.

No studies were carried on the below ground biomass

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
FAO. Working Paper 82. 2004. FAO/Forests department	M	Dry matter and biomass and root shoot ratio	2004	
FAO. Working Paper 81. 2004.FAO/ Forests department	H	Biomass expansion factor. Root-shoot ratio	2004	
Attalah (1984)	M	Biomass	1984	

7.2.2 Classification and definitions

National class	Definition
Carbon in above-ground biomass	It corresponds to FRA 2005 definition
Carbon in below-ground biomass	It corresponds to FRA 2005 definition.
Carbon in dead wood biomass	It corresponds to FRA 2005 definition.
Carbon in litter and Soil carbon.	It corresponds to FRA 2005 definition.

7.2.3 Original data

The final data of table 6 was used as input for the carbon estimations

7.3 Analysis and processing of national data

The default factor of 50% was used to convert biomass stock from table T6 to carbon stock. The default value for carbon stock of litter in tropical forests (2.1 ton C/ha) has been used.

7.4 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	13.75	13.75	13.75	102.45	102.45	102.45
Carbon in below-ground biomass	3.71	3.71	3.71	27.65	27.65	27.65
Sub-total: Carbon in living biomass	17.46	17.46	17.46	130.10	130.10	130.10
Carbon in dead wood	2.45	2.45	2.45	18.20	18.20	18.20
Carbon in litter	5.73	5.73	5.73	72.30	72.30	72.30
Sub-total: Carbon in dead wood and litter	8.18	8.18	8.18	90.50	90.50	90.50
Soil carbon to depth of 30cm.	NDA	NDA	NDA	NDA	NDA	NDA
Total Carbon	25.64	25.64	25.64	220.60	220.60	220.60

7.5 Comments to National reporting table T7

Same weaknesses as in table 6.

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
Range and forestry department	M	Burnt area	1988-2002	

8.2.2 Classification and definitions

National class	Definition
Disturbance by fire	It corresponds to FRA 2005 definition.
Disturbance by insects	It corresponds to FRA 2005 definition.
Disturbance by diseases	It corresponds to FRA 2005 definition.

8.2.3 Original data

Data were collected from scattered reports.

8.3 Analysis and processing of national data

8.4 Reclassification into FRA 2005 classes

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	0.05	0.05	0.01	0.01
Disturbance by insects	4.0	4.0	30.0	30.0
Disturbance by diseases	2.5	2.5	15.0	15.0
Other disturbance	3.0	3.0	20.0	20.0

8.6 Comments to National reporting table T8

No reliable and systematic recorded data are available. The above figures are rough estimates reflecting the present position.

Other disturbances are caused by animals.

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
Department of Range and forests, Ministry of Agriculture.	H	Number of Native Tree species, Number of endangered tree spp.	2003	Vegetation of the Kingdom of Saudi Arabia. Ministry of Agriculture.
National Commission for Wildlife Conservation and Development, Kingdom of Saudi Arabia.	H	Number of Native tree spp., Number of endangered tree spp.	2003	Scientific papers.
Red Book	H	endangered tree species, vulnerable tree species	2004	Research Institute on Forests and Range Lands

9.2.2 Original data

9.3 Data for National reporting table T9

FRA 2005 Categories	Number of species (year 2000)
Native tree species	52
Critically endangered tree species	0
Endangered tree species	2
Vulnerable tree species	1

9.4 Comments to National reporting table T9

The IUCN Red List includes the following tree species for Saudi Arabia:

Endangered species

Dracaena ombet
Dracaena serrulata.

Vulnerable species:

Euphorbia ammak

The Department of Range and Forests lists three tree species as critically endangered, two as endangered and one as vulnerable as follows:

Critically endangered species

1. *Dracaena ombet*
2. *Rizophora mucronata*.
3. *Hyphaene thebaica*

Endangered species

1. *Juniperus procera*
2. *Cupressus arizonica*

Vulnerable species

1. *Albizia lebbek*

10 Table T10 – Growing stock composition

10.1 FRA 2005 Categories and definitions

List of species names (scientific and common names) of the ten most common species.

<i>Juniperus procera</i> (Arar)
<i>Acacia spp.</i> (Akasiat).
<i>Ziziphus spina-christi</i> (Al sidir).
<i>Olea europaea</i> (Zaitoon bari)
<i>Prosopis juliflora</i> (Miskeet).
<i>Tamarix spp.</i> (Al tarfa).
<i>Avicennia marina</i> (Mangroves)
<i>Hyphaene thebaica</i> (Al dom).
<i>Capparis decidua</i> (Tontob)
<i>Ficus spp.</i> (Al labakh)

10.2 National data

10.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Dept. of Range and forestry, Ministry of Agriculture.	M	Growing stock	2000	

10.2.2 Original data

No National Forest Inventory has been carried out to estimate the volume for each species. All the figures presented in the final table are rough estimates based on experience.

10.3 Data for National reporting table T10

FRA 2005 Categories / Species name (Scientific name and common name)	Growing Stock in Forests (million cubic meters)	
	1990	2000
<i>Juniperus procera</i> (Arar)	8.65	8.65
<i>Acacia spp.</i> (Akasiat).	3.46	3.46
<i>Ziziphus spina-christi</i> (Al sidir).	1.73	1.73
<i>Olea europaea</i> (Zaitoon bari)	1.56	1.56
<i>Prosopis juliflora</i> (Miskeet).	1.38	1.38
<i>Tamarix spp.</i> (Al tarfa).	1.38	1.38
<i>Avicennia marina</i> (Mangroves)	1.04	1.04
<i>Hyphaene thebaica</i> (Al dom).	0.69	0.69
<i>Capparis decidua</i> (Tontob)	0.43	0.43
<i>Ficus spp.</i> (Al labakh)	0.35	0.35
Remainder of species	2.25	2.25
TOTAL	22.91	22.91

10.4 Comments to National reporting table T10

No National Forest Inventory was carried out to estimate the volume for each species. All the above figures are rough estimates based on experience.

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
Forest Dept. reports.	L	Volume of round wood over bark.	1990, 2000	

11.2.2 Classification and definitions

National class	Definition
Woodfuel removal	It corresponds to FRA 2005 definition.

Note: No industrial wood was produced since the forests are considered to be protective forests.

11.2.3 Original data

There is no production of industrial round wood in Saudi Arabia. The woodfuel production for 1990 and 2000 is presented in the following table

Year	Production (1000 m3)
1990	47.2
2000	61.2

11.3 Analysis and processing of national data

It is estimated that 75% of the woodfuel production comes from forest and 25% comes from other wooded land.

11.3.1 Estimation and forecasting

Since 2002, removals of fuelwood are not longer permitted, hence the estimated removal for 2005 is zero.

11.4 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	0	0	0	0	0	0
Woodfuel	35.4	45.9	0	11.8	15.3	0
TOTAL for Country	35.4	45.9	0	11.8	15.3	0

11.5 Comments to National reporting table T11

Figures represent only the legal wood removals; illegal removals may be equal to or exceed the legal removals but they are very difficult to estimate and no attempt was made to estimate this amount.

There is no industrial wood production. Legal removals of fuelwood were stopped since three years ago and for the two coming years, so officially there is no fuelwood production during these five years.

12 Table T12 – Value of wood removal

12.1 FRA 2005 Categories and definitions

Category	Definition
Value of industrial wood removal	Value of the wood removed for production of goods and services other than energy production (woodfuel).
Value of woodfuel removal	Value of the wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

12.2 National data

12.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Forest Dept. reports.	L	Value of fuelwood	1990. 2000	

12.2.2 Classification and definitions

National class	Definition
Value of woodfuel removal	It corresponds to FRA 2005 definition.

12.2.3 Original data

There is no original data. An estimated average value of 300 Riyals per m³ (equalling 80 USD/m³) has been used for all three reporting years.

12.3 Data for National reporting table T12

FRA 2005 Categories	Value of roundwood removal (1000 USD)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Industrial roundwood	0	0	0	0	0	0
Woodfuel	2832	3672	0	944	1224	0
TOTAL for Country	2832	3672	0	944	1224	0

12.4 Comments to National reporting table T12

The same weakness as in table 11.

13 Table T13 – Non-wood forest product removal

13.1 FRA 2005 Categories and definitions

The following categories of non-wood forest products have been defined:

Category
<u>Plant products / raw material</u>
1. Food
2. Fodder
3. Raw material for medicine and aromatic products
4. Raw material for colorants and dyes
5. Raw material for utensils, handicrafts & construction
6. Ornamental plants
7. Exudates
8. Other plant products
<u>Animal products / raw material</u>
9. Living animals
10. Hides, skins and trophies
11. Wild honey and bee-wax
12. Bush meat
13. Raw material for medicine
14. Raw material for colorants
15. Other edible animal products
16. Other non-edible animal products

13.2 National data

13.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Forestry Dept. reports.	M		1990 2000	

13.2.2 Classification and definitions

National class	Definition
Living animals	It corresponds to FRA 2005 definition.
Wild honey and bee wax	It corresponds to FRA 2005 definition.

13.2.3 Original data

13.3 Analysis and processing of national data

Estimation and forecasting

13.4 Reclassification into FRA 2005 classes

13.5 Data for National reporting table T13

FRA 2005 Categories	Scale factor	Unit	NWFP removal		
			1990	2000	2005
<u>Plant products / raw material</u>					
1. Food					
2. Fodder					
3. Raw material for medicine and aromatic products					
4. Raw material for colorants and dyes					
5. Raw material for utensils, handicrafts & construction					
6. Ornamental plants					
7. Exudates					
8. Other plant products					
<u>Animal products / raw material</u>					
9. Living animals					I D.
10. Hides, skins and trophies					
11. Wild honey and bee-wax	Mass	Ton	48	50	60
12. Bush meat					
13. Raw material for medicine					
14. Raw material for colorants					
15. Other edible animal products					
16. Other non-edible animal products					

I D. = Insufficient data

13.6 Comments to National reporting table T13

Forecasting for 2005 was made according to local knowledge and experience. No extrapolation defining a proper trend over the 1990-2005 period was made.

The amount of fodder consumed by domestic animals through grazing in forests and other wooded lands is roughly estimated at 500 000; 560 000 and 800 000 tons for the years 1990, 2000 and 2005 respectively.

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

14.1 FRA 2005 Categories and definitions

The following categories of non-wood forest products have been defined:

Category
<u>Plant products / raw material</u>
1. Food
2. Fodder
3. Raw material for medicine and aromatic products
4. Raw material for colorants and dyes
5. Raw material for utensils, handicrafts & construction
6. Ornamental plants
7. Exudates
8. Other plant products
<u>Animal products / raw material</u>
9. Living animals
10. Hides, skins and trophies
11. Wild honey and bee-wax
12. Bush meat
13. Raw material for medicine
14. Raw material for colorants
15. Other edible animal products
16. Other non-edible animal products

14.2 National data

14.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Forest Dept. reports.	M	values	1990, 2000, 2005	

14.2.2 Classification and definitions

As in table 13 above.

14.3 Analysis and processing of national data

14.3.1 Estimation and forecasting

14.4 Reclassification into FRA 2005 classes

14.5 Data for National reporting table T14

FRA 2005 Categories	Value of the of NWFP removed (1000 USD)		
	1990	2000	2005
<u>Plant products / raw material</u>			
1. Food			
2. Fodder			
3. Raw material for medicine and aromatic products			
4. Raw material for colorants and dyes			
5. Raw material for utensils, handicrafts & construction			
6. Ornamental plants			
7. Exudates			
8. Other plant products			
<u>Animal products / raw material</u>			
9. Living animals			
10. Hides, skins and trophies			
11. Wild honey and bee-wax	1 000	1 160	1 960
12. Bush meat			
13. Raw material for medicine			
14. Raw material for colorants			
15. Other edible animal products			
16. Other non-edible animal products			
TOTAL	1 000	1 160	1 960

The value of one US \$ is 3.75 Saudi Riyals for the three reporting periods 1990, 2000 and 2005.

14.6 Comments to National reporting table T14

The same weaknesses as in table 13.

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
Forest Dept. reports.	H	Number of employee.	1990	

15.2.2 Classification and definitions

National class	Definition
Provision of services	It corresponds to FRA 2005 definition..

15.2.3 Original data

National category	Employment (000 persons)	
	1990	2000
Foresters	0.136	0.136
Regular labourers employed directly by the dept. of forests.	0.905	0.905
Casual labourers employed directly by the Dept. of Forests.	0	0
Labourers employed by private contactors for afforestation	0.335	0.335
Total	1.376	1.376

The original report present the same estimates for 1990 and 2000.

15.3 Analysis and processing of national data

15.3.1 Estimation and forecasting

15.4 Reclassification into FRA 2005 classes

15.5 Data for National reporting table T15

FRA 2005 Categories	Employment (1000 person-years)	
	1990	2000
Primary production of goods	0	0
Provision of services	1.38	1.38
Unspecified forestry activities	0	0
TOTAL	1.38	1.38

No casual labours are employed

15.6 Comments to National reporting table T15

During the last 15 years, definitely there were some changes but the absence of inventories make it very difficult to estimate any changes occurred. For that reason figures were kept constant.