Forestry Department
Food and Agriculture Organization of the United Nations

GLOBAL FOREST RESOURCES ASSESSMENT

COUNTRY REPORTS

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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:

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

1.2 National data

1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Ministry of agriculture and fisheries	M	Forest and Date Palm	1990 - 2003	Agriculture and Fisheries-Facts and Figures covering all agricultural activities in the country.
Ministry of agriculture and fisheries UAE Marine Resources Research Centre	M	Mangrove	1978 & 2003	Experimental cultivation of mangrove (*Avicennia marina*) combined with aquaculture in UAE
Earth Trends	M	Inland water bodies	2003	Sabkha
Saenger, P., Blasco, F., Youssef, A. and R. Loughland. in press. *The coastal atlas: mangroves of the UAE with particular emphasis on those of the Abu-Dhabi Emirate*	M	Mangrove area	1999	Based on aerial
Böer, B. pers. Comm.	L	Area of mangrove afforestation	Since 1972	Expert estimate

1.2.2 Classification and definitions

FRA class	National Class and Definition
Forest	Forest (It corresponds to FRA 2005)
Other wooded land	Mangrove forest (natural protected areas and afforestation)
Other land	All land that is not classified as "Forest" or "Other wooded land"
Other land with tree cover (Subordinated to Other land)	Includes tree plantations established mainly for other purposes than wood such as fruit orchards and palm plantations.
Inland water bodies	Sabkha

1.2.3 Original data

National categories	Area (1000 hectares)						
	1978	**1990**	**1997**	**1998**	**1999**	**2000**	**2003**
Forest		245	300	309.6	NDA	NDA	310.971
Mangroves	2.93[1]	NDA	NDA	NDA	NDA	4.00	3.552[2]
Date palm		22.4	36.5	59.2	170.3	185.3	185.3
Fruit trees		3.15	2.55	2.52	2.55	2.47	2.08
Sabkha	83.6	83.6	83.6	83.6	83.6	83.6	83.6
Other land		NDA	NDA	NDA	NDA	NDA	7774.53[3]
TOTAL	**8360**	**8360**	**8360**	**8360**	**8360**	**8360**	**8360**

[1] This estimate covers only five of the seven Emirates. No information was provided on the area of mangroves in Dubai. No mangroves have been reported from Fujairah.
[2]This estimate is only from two emirates out of seven.
[3] Estimated from the original data as: total land area – (forest +other wooded land + Sabkha).
NDA: No data available.

An estimated 800-1200 ha of mangroves have been planted since 1972 (Böer, B. pers. Comm.)

1.3 Analysis and processing of national data

1.3.1 Calibration

Not needed. The UN/FAO STAT figures for total country area and total land area have been used.

1.3.2 Estimation and forecasting

Estimation and forecasting for forests are done through linear inter- and extrapolation based on data available for 1998 and 2003.

The area of mangroves in Dubai as of 1978 is estimated at around 500 hectares, taking the total area of mangroves in 1978 to around 3 500 ha. Estimation and forecasting for 1990, 2000 and 2005 is done through linear inter- and extrapolation based on the revised figure for 1978 and the estimate for 1999. The increase over time corresponds more or less to the estimated area of mangroves which have been planted since 1972.

Figures for date palms and fruit trees are based on records kept by the Ministry of Agriculture and Fisheries.

National class	Area (1000 hectares)		
	1990	**2000**	**2005**
Forest	245	310	312
Mangroves	3.80	4.00	4.10
Date palm	22.4	185	193
Fruit trees	3.15	2.47	2.08
Sabkha [1]	83.6	83.6	83.6
Other land[2]	8002	7775	7765
TOTAL	**8360**	**8360**	**8360**

[1] The area represents 1% out of total country area.
[2] Other land is calculated as the remaining area.

1.4 Reclassification into FRA 2005 classes

National classes	FRA 2005 Classes				
	Forest	**Other wooded land**	**Other land**	**Other land with tree cover**	**Inland water**
Forest	100%				
Mangroves		100%			
Date palm			100%	100%	
Fruit trees			100%	100%	
Sabkha			100%		
Other land			100%		

1.5 Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	**2000**	**2005**
Forest	245	310	312
Other wooded land	3.80	4.00	4.10
Other land	8111	8046	8044
…..of which with tree cover	25.6	188	195
Inland water	0	0	0
TOTAL	**8360**	**8360**	**8360**

…of which tree cover (date palm and fruit trees): Values are included within Other land

1.6 Comments to National reporting table T1

- Forest Data of 2005 estimated and forecasted based on the available data for the period 1998 – 2003, from the Ministry of Agriculture and Fisheries.
- Other land … of which with tree cover, include date palm and fruit trees. The area of date palm trees was widely expanded from 1990 up to now, (the area of 2003 was 187.4 as published on late of 2003 that was due to some reduction in fruit trees area).
- The large area expansion in 1990s due to widely afforested projects at this period, while later starting from 1998 the area expansion was reduced due to the concentration on the maintenance of the existing projects and limitation of water resources used for newly established forest areas.
- An estimated 800-1200 hectares of mangroves (classified as OWL) have been planted since 1972.

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
Ministry of agriculture and fisheries	M	Ownership of forest areas	2003	Forest owned by the federal &local governments, and municipalities.
Ministry of agriculture and fisheries UAE Marine Resources Research Centre	M	Ownership of other wooded land	1978& 2003	Includes only mangrove

2.2.2 Classification and definitions

National class	Definition
Public ownership	It corresponds to FRA 2005 definition.

2.2.3 Original data

All land is publicly owned

2.3 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	245	310	3.80	4.00
Other ownership	0	0	0	0
TOTAL	**245**	**310**	**3.80**	**4.00**

2.4 Comments to National reporting table T2

All land is publicly owned
The data on the area of forest and other wooded land are taken directly from table T1.

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
Ministry of agriculture and fisheries	M	Forest function	2003	Records kept by the Ministry of agriculture and fisheries UAE
Ministry of agriculture and fisheries UAE Marine Resources Research Centre	M	Other wooded land function	1978& 2003	Records kept by the Ministry of agriculture and fisheries UAE Marine Resources Research Centre

3.2.2 Classification and definitions

National class	Definition
Multiple purpose	Same as FRA
Area for protection of flora and fauna	Same as FRA

3.2.3 Original data

Data from Table T1 are used as input to this table.

3.3 Reclassification into FRA 2005 classes

- All forest areas are designated for multiple purpose (Protection of soil erosion, conservation of biodiversity.
- All other wooded land (mangrove areas) are designated for multiple purpose (fish nursery to increase fish resources, protection of coastal areas from erosion and making green areas along coasts).

3.4 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				245	310	312
Conservation of biodiversity				245	310	312
Social services						
Multiple purpose	245	310	312	not appl.	not appl.	not appl.
No or unknown function				not appl.	not appl.	not appl.
Total - Forest	**245**	**310**	**312**	**not appl.**	**not appl.**	**not appl.**
Other wooded land						
Production						
Protection of soil and water				3.80	4.00	4.10
Conservation of biodiversity				3.80	4.00	4.10
Social services						
Multiple purpose	3.80	4.00	4.10	**not appl.**	**not appl.**	**not appl.**
No or unknown function				**not appl.**	**not appl.**	**not appl.**
Total – Other wooded land	3.80	4.00	4.10	**not appl.**	**not appl.**	**not appl.**

3.5 Comments to National reporting table T3

- From the table above both forest and other wooded land are of multiple purposes including conservation of biodiversity and soil protection but no production function.
- It is difficult to record each function separately for the forest and other wooded land because no data available for each 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
Ministry of agriculture and fisheries	M	Forest function	2003	Records kept by the Ministry of agriculture and fisheries UAE
Ministry of agriculture and fisheries UAE Marine Resources Research Centre	M	Other wooded land function	1978& 2003	Records kept by the Ministry of agriculture and fisheries UAE Marine Resources Research Centre

4.2.2 Classification and definitions

National class	Definition
Protective plantation	Same as FRA
Primary	Same as FRA

Note: If different national data sources use different classes and definitions, a table such as above is needed for each relevant data source.

4.2.3 Original data

Data from Table T1 are used as input to this table.

4.3 Reclassification into FRA 2005 classes

- All forests are classified as protective plantations.
- All other wooded land (mangroves) are classified as primary protective plantations.

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				3.80	4.00	4.10
Modified natural						
Semi-natural						
Productive plantation						
Protective plantation	245	310	312			
TOTAL	**245**	**310**	**312**	**3.80**	**4.00**	**4.10**

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
Forestry department al Ain	H	Growing stock	2004	Data obtained in December 2004

5.2.2 Classification and definitions

National class	Definition
Growing stock	Volume over bark of the stem from ground level up to the top of trees more than 10.2 cm in diameter at breast height.

5.2.3 Original data

The data in table 5 does not represent the whole country. It represents the growing stock at Al Ain, the eastern area of Abu Dhabi Emirate.

Afforested areas at Al Ain, the eastern area of Abu Dhabi Emirate.

Year	Area Ha	No of trees	Observation
1990	24453	4 890 600	
1995	39177	7 835 400	
2000	46981	9 396 200	
2004	57147	11 429 400	

Distribution of afforested area according to the species (% and Number)

Species	%	No of trees	observation
Prosopis cineraria	32	3 657 408	
Salvadora persica	25	2 857 350	
Zizyphus spina-christi	11.6	1 325 810	
Acacia spp	19.6	2 240 162	All *Acacia* spp
Others (species)	11.8	1 348 670	
Total	**100%**	**11 429 400**	

* Data was collected on 20 December 2004, so no calibration was made for 2005.

5.3 Analysis and processing of national data

Evaluation of Growing stock

Step 1: Calculation of tree volume for the individual species

1. *Prosopis cineraria*

Serial No	Circumference(m)	Radius	Height (m)	Volume (m^3)
1	1.65	0.26	7.6	1.29
2	1.45	0.23	9.5	1.262
3	0.93	0.15	9.0	0.509
4	0.68	0.11	6.0	0.182
5	0.75	0.12	6.5	0.234
6	0.72	0.11	7.0	0.213
7	0.65	0.1	7.6	0.190
8	0.49	0.08	7.0	0.113
9	0.48	0.08	4.0	0.064
10	0.47	0.07	4.0	0.049
11	0.40	0.06	4.3	0.038
12	0.35	0.06	4.0	0.036
Volume of 12 trees				4.18

Volume of tree =$\prod r^2$ H* F where F is the cylindrical form factor.
Average volume/tree = 0.3483 m^3 , Density of plantation = 200 plants/Hectare, Average volume/Hectare = 69.667 m^3

2. *Salvadora persica*

Serial No	Circumference(m)	Radius	Number of stems	Height (m)	Volume (m^3)
1	0.64	0.100	2	3.5	0.176
2	0.48	0.076	1	4.4	0.064
3	0.36	0.056	2	3	0.047
4	0.44	0.070	1	2.8	0.034
5	0.54	0.086	1	3.8	0.070
6	0.66	0.106	2	2.5	0.141
7	0.28	0.044	1	3.3	0.016
8	0.48	0.076	1	4.2	0.061
9	0.76	0.122	2	3	0.224
10	0.54	0.086	1	2.6	0.048
Volume of 10 trees					0.881

Average volume / tree = 0.0881 m^3, Density of plantation = 200 plants / Hectare, Average volume/Hectare = 17.62 m^3

3. *Acacia tortilis*

Serial No	Circumference(m)	Radius	Number of stems	Height (m)	Volume (m^3)
1	0.96	0.15	4	2	0.451
2	0.88	0.14	5	5.5	1.352
3	0.66	0.10	3	3.2	0.240
4	0.72	0.11	4	2	0.243
5	0.98	0.15	4	4.5	1.014
6	0.57	0.09	3	3.5	0.214
7	0.74	0.11	3	4.5	0.410
8	0.65	0.10	3	4.5	0.338
9	0.7	0.11	3	3.5	0.317
10	0.69	0.11	3	4.5	0.408
Volume of 10 trees					4.987

Average volume / tree = 0.4987 m^3, Density of plantation = 200 plants / hectare, Average volume / hectare = 99.74 m^3

4. *Acacia raddiana*

Serial No	Circumference(m)	Radius	Number of stems	Height (m)	Volume (m^3)
1	0.48	0.076	2	5	0.146
2	0.5	0.081	1	5	0.082
3	0.39	0.062	1	5	0.048
4	0.30	0.097	2	5	0.058
5	0.58	0.092	1	5	0.106
6	0.39	0.062	1	5	0.048
7	0.36	0.057	2	5	0.082
8	0.40	0.062	1	5	0.050
9	0.30	0.047	1	5	0.027
10	0.33	0.053	2	5	0.070
11	0.41	0.065	1	5	0.053
12	0.41	0.065	1	5	0.053
13	0.30	0.047	1	5	0.027
Volume of 13 trees					0.850

Average volume / tree = 0.06548 m^3, Density of plantation = 200 plants / hectare, Average volume / hectare = 13.077 m^3

5. *Zizyphus spina-christi*

Serial No	Circumference(m)	Radius	Number of stems	Height (m)	Volume (m^3)
1	0.23	0.037	4	4.5	0.0773
2	0.27	0.043	3	4.5	0.0783
3	0.18	0.029	4	4.5	0.0475
4	0.22	0.035	5	4.5	0.0865
5	0.27	0.043	4	4.5	0.1045
6	0.23	0.037	3	4.5	0.0580
7	0.27	0.043	2	4.5	0.0522
8	0.21	0.033	4	4.5	0.0616
9	0.32	0.051	3	4.5	0.1103
10	0.19	0.030	3	4.5	0.0382
Volume of 10 trees					0.5717

Average volume / tree = 0.0572 m^3, Density of plantation = 200 plants / hectare, Average volume / hectare = 11.434 m^3

Step2: Volume/ha

Parameters	**Species**			
	Prosopis cineraria	***Salvadora persica***	***Zizyphus spina-christi***	***Acacia tortilis***
Average volume/tree	0.348	0.0881	0.0572	0.498
Density/ ha	200	200	200	200
Average volume/ha	69.667	17.62	11.434	99.74
Annual growth rate/ ha	2.787	0.705	0.458	3.989
Age of plantation	25	25	25	25

5.3.1 Estimation and forecasting

Species	% Area	Area ha	Volume (1000m^3 over bark)	
			Average volume/ha	Total volume/sp
Prosopis cineraria	32	18287.04	69.67	1274.003
Salvadora persica	25	14286.75	17.62	251.733
Zizyphus spina-christi	11.6	6629.052	11.43	75.797
Acacia tortilis	19.6	11200.81	99.74	1117.169
Others	11.8	6743.346	11.43	77.103
Total	**100**	**57147**		**2795.805**

*The growth and volume of other species was considered as that of *Zizyphus spina-christi.*

5.4 Reclassification into FRA 2005 classes

Based on the abovementioned table, the weighted volume/ha is 2795805/57147= 48.9 m^3. This figure will be applied to forests for the whole country and 25m^3 will be applied to the OWL

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	11.981	15.166	15.233	0.095	0.100	0.102
Commercial growing stock	-	-	-	-	-	-

Specification of country threshold values	Unit	Value	Complementary information
1. Minimum diameter at breast height of trees included in Growing stock (X)	Cm	10.2	
2. Minimum diameter at the top end of stem (Y) for calculation of Growing stock	Cm	0	
3. Minimum diameter of branches included in Growing stock (W)	Cm		
4. Minimum diameter at breast height of trees in Commercial growing stock (Z)	cm		
5. Volume refers to "Above ground" (AG) or "Above stump" (AS)	AG / AS	AG	
6. Have any of the above thresholds (points 1 to 4) changed since 1990	Yes/No	No	
7. If yes, then attach a separate note giving details of the change	Attachment		

* No commercial growing stock.

5.6 Comments to National reporting table T5

- The data of the national tables was only for Al Ain forests.
- The obtained weighted mean of volume/ha was applied for the forests of the whole country.
- The growth of the OWL (about 1% as that of the forest area) was considered as 50% of the forest growth (25 m^3/ha).

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/Forests department	M	Biomass expansion factor. Root-shoot ratio.	2004	
FAO. Working Paper 81. 2004.FAO/ Forests department	H	Biomass expansion factor. Root-shoot ratio	2004	
Forestry department al Ain	H	Stem biomass	2004	Data obtained in December 2004

6.2.2 Classification and definitions

National class	Definition
Above ground biomass	Same as FRA 2005
Below ground biomass	Same as FRA 2005
Dead wood biomass	Same as FRA 2005

Note: If different national data sources use different classes and definitions, a table such as above is needed for each relevant data source.

6.2.3 Original data

The final data for table T5 was used as input for carbon estimation.

6.3 Analysis and processing of national data

6.3.1 Estimation and forecasting

Calculation of living biomass for forest (No GS by species)

year	G. stock (Million m3)	Basic density (tones/m3)	Stem biomass (million tones)	Biomass exp. fact	A.G biomass (million tones)	Root-Shoot ratio	B.G biomass (million tones)
1990	11.981	0.76	9.105	2	19.211	0.43	7.83
2000	15.166	0.76	11.526	2	23.052	0.43	9.912
2005	15.233	0.76	11.577	2	23.154	0.43	9.956

Calculation of living biomass for OWL (No GS by species)

year	G. stock (Million m3)	Basic density (tones/m3)	Stem biomass (million tones)	Biomass exp. fact	A.G biomass (million tones)	Root-Shoot ratio	B.G biomass (million tones)
1990	0.095	0.76	0.072	2	0.144	0.43	0.062
2000	0.100	0.76	0.076	2	0.152	0.43	0.065
2005	0.102	0.76	0.078	2	0.155	0.43	0.067

To calculate dead wood biomass, a dead/live ratio of 0.123 was used.

6.4 Reclassification into FRA 2005 classes

Not needed. The data can be used directly.

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	19.21	23.05	23.15	0.144	0.152	0.155
Below-ground biomass	7.83	9.91	9.96	0.062	0.065	0.067
Dead wood biomass	3.81	4.62	4.62	0.025	0.027	0.027
TOTAL	**30.85**	**37.58**	**37.63**	**0.231**	**0.244**	**0.249**

Thresholds used by the country are:
For tropical Asia, deciduous and broadleaved forests:
Basic wood density for acacias and *Zizyphus spina christi* is 0.76
R for broadleaf forest<75 ton/hectare = 0.43
BEF = 2
Dead-live ratio = 0.123

6.6 Comments to National reporting table T6

- The growing stock is the only available Parameter. To overcome this constraint, the IPCC values: BEF, R, WD and Biomass of dead wood for the information in appendix 5 for the tropical Asia, broadleaf and deciduous forest were used.

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, fumic, 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	Biomass expansion factor. Root-shoot ratio.	2004	
FAO. Working Paper 81. 2004.FAO/ Forests department	H	Biomass expansion factor. Root-shoot ratio	2004	
Forestry department al Ain	L	Stem biomass	2004	Data obtained in December 2004

7.2.2 Classification and definitions

National class	Definition
Carbon in above-ground biomass	Same as FRA
Carbon in below-ground biomass	Same as FRA
Carbon in dead wood biomass	Same as FRA
Carbon in litter	Same as FRA

7.2.3 Original data

The data of table 6 was used as an input for table 7. A conversion factor of 0.5 was used.

7.3 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	9.61	11.53	11.58	0.072	0.076	0.0775
Carbon in below-ground biomass	3.92	4.96	4.98	0.031	0.0325	0.0335
Sub-total: Carbon in living biomass	**13.52**	**16.48**	**16.56**	**0.103**	**0.109**	**0.111**
Carbon in dead wood	1.90	2.31	2.31	0.006	0.007	0.007
Carbon in litter	0.533	0.651	0.654	0.006	0.007	0.008
Sub-total: Carbon in dead wood and litter	**2.44**	**2.96**	**2.96**	**0.013**	**0.014**	**0.014**
Soil carbon to a depth of _____ cm						
TOTAL CARBON	**15.96**	**19.44**	**19.52**	**0.116**	**0.122**	**0.125**

The litter carbon stock was calculated on basis of 2.1 tonnes C/ha

7.4 Comments to National reporting table T7

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.

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

8.2.2 Classification and definitions

8.2.3 Original data

No disturbances occurred during the period 1990-2005

8.3 Analysis and processing of national data

8.3.1 Estimation and forecasting

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	0	0	0
Disturbance by insects	0	0	0	0
Disturbance by diseases	0	0	0	0
Other disturbance	0	0	0	0

8.6 Comments to National reporting table T8

Note: Afforestation in UAE is mainly for environmental and soil conservation, and the density of plantation are low (200 tree/hectare) and well managed (cleaning all stuff under trees, regular monitoring and control of diseases and insects) to avoid any disturbances, hence no disturbances were reported.

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
IUCN Red List				

9.2.2 Classification and definitions

9.2.3 Original data

9.3 Data for National reporting table T9

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

9.4 Comments to National reporting table T9

The IUCN Red List does not contain any endangered or vulnerable plant species for United Arab Emirates.

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.

Serial	Scientific name	Common name
1	*Prosopis cineraria*	Agafa
2	*Salvadora persica*	Arak
3	*Acacia tortilis*	Samer
4	*Zizyphus spina-christi*	Sedder
5	*Acacia raddiana*	
6	*Acacia seyal*	Taleh
7	*Azadirachtia indica*	Neem
8	*Conocarpus lancifolius*	Damas
9	*Avicennia marina*	Mangrove (garam)
10	*Acacia arabica*	Alkarat

10.2 National data

10.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Forestry department al Ain	H	Growing stock	2004	
Forestry department al Ain	H	Species	2004	

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10.2.2 Original data

National class	2004				
Growing stock	**% Area**	**Area ha**		**Total volume/ha**	**Million cubic meters**
	Prosopis cineraria	32	18287.04	1273373	1.2734
	Salvadora persica	25	14286.75	251733	0.2517
	Zizyphus spina-christi	11.6	6629.052	75797	0.0758
	Acacia tortilis *Acacia radiana*	19.6	11200.81	1117169	1.117
	Others	11.8	6743.346	77103	0.0771
	Total	**100**	**550403.65**	**2795805**	**2795.8**

The growing stock composition calculated based on data available from al Ain total forest area which represents 16.2% of the total forest area in the country

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**
Prosopis cineraria	ID	ID
Salvadora persica	ID	ID
Acacia tortilis	ID	ID
Zizyphus spina-christi	ID	ID
Acacia raddiana	ID	ID
Acacia seyal	ID	ID
Azadirachtia indica	ID	ID
Conocarpus lancifolius	ID	ID
Avicennia marina	ID	ID
Acacia arabica	ID	ID
TOTAL		

10.4 Comments to National reporting table T10

- The growing stock composition calculated based on data available from al Ain total forest area which represents 16.2% of the total forest area in the country
- Data was collected only for the above mentioned spp.
- All types of afforstation are mostly for protection against soil erosion and sand dune stabilization.

11 Table T11 – Wood removal

11.1 FRA 2005 Categories and definitions

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

11.2 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 round wood	0	0	0	0	0	0
Wood fuel	0	0	0	0	0	0
TOTAL for Country	0	0	0	0	0	0

11.3 Comments to National reporting table T11

This table is not applicable in UAE , because the main forest function is protection and conservation i.e. no wood removal**.**

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 (wood fuel).
Value of wood fuel removal	Value of the wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

12.2 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 round wood	0	0	0	0	0	0
Wood fuel	0	0	0	0	0	0
TOTAL for Country	0	0	0	0	0	0

12.3 Comments to National reporting table T12

This table is not applicable in UAE , because the main forest function is protection and conservation i.e. no value of wood removal.

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
Plant products / raw material
1. Food
2. Fodder
3. Raw material for medicine and aromatic products
4. Raw material for colorants and dyes
5. Raw material for utensils, handicrafts & construction
6. Ornamental plants
7. Exudates
8. Other plant products
Animal products / raw material
9. Living animals
10. Hides, skins and trophies
11. Wild honey and bee-wax
12. 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 Data for National reporting table T13

FRA 2005 Categories	**Scale factor**	**Unit**	**NWFP removal**		
			1990	**2000**	**2005**
Plant products / raw material					
1. Food			0	0	0
2. Fodder			0	0	0
3. Raw material for medicine and aromatic products			0	0	0
4. Raw material for colorants and dyes			0	0	0
5. Raw material for utensils, handicrafts & construction			0	0	0
6. Ornamental plants			0	0	0
7. Exudates			0	0	0
8. Other plant products			0	0	0
Animal products / raw material					
9. Living animals			0	0	0
10. Hides, skins and trophies			0	0	0
11. Wild honey and bee-wax			0	0	0
12. Bush meat			0	0	0
13. Raw material for medicine			0	0	0
14. Raw material for colorants			0	0	0
15. Other edible animal products			0	0	0
16. Other non-edible animal products			0	0	0

13.3 Comments to National reporting table T13

This table is not applicable in UAE , because the main forest function is protection and conservation i.e. no removal of non-wood forest products.

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
Plant products / raw material
1. Food
2. Fodder
3. Raw material for medicine and aromatic products
4. Raw material for colorants and dyes
5. Raw material for utensils, handicrafts & construction
6. Ornamental plants
7. Exudates
8. Other plant products
Animal products / raw material
9. Living animals
10. Hides, skins and trophies
11. Wild honey and bee-wax
12. 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 Data for National reporting table T14

FRA 2005 Categories	**Value of the of NWFP removed (1000 USD)**		
	1990	**2000**	**2005**
Plant products / raw material 1. Food	0	0	0
2. Fodder	0	0	0
3. Raw material for medicine and aromatic products	0	0	0
4. Raw material for colorants and dyes	0	0	0
5. Raw material for utensils, handicrafts & construction	0	0	0
6. Ornamental plants	0	0	0
7. Exudates	0	0	0
8. Other plant products	0	0	0
Animal products / raw material 9. Living animals	0	0	0
10. Hides, skins and trophies	0	0	0
11. Wild honey and bee-wax	0	0	0
12. Bush meat	0	0	0
13. Raw material for medicine	0	0	0
14. Raw material for colorants	0	0	0
15. Other edible animal products	0	0	0
16. Other non-edible animal products	0	0	0
TOTAL			

14.3 Comments to National reporting table T14

This table is not applicable in UAE, because the main forest function is protection and conservation i.e. no value of non-wood forest product removals.

15 Table T15 – Employment in forestry

No record is available on employment in forestry