Forestry Department
Food and Agriculture Organization of the United Nations

GLOBAL FOREST RESOURCES ASSESSMENT 2010

COUNTRY REPORT

UNITED ARAB EMIRATES

FRA2010/220
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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 2010 (FRA 2010).

The reporting framework for FRA 2010 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes variables related to the extent, condition, uses and values of forest resources, as well as the policy, legal and institutional framework related to forests. More information on the FRA 2010 process and the results - including all the country reports - is available on the FRA Web site (www.fao.org/forestry/fra).

The Global Forest Resources Assessment process is coordinated by the Forestry Department at FAO headquarters in Rome. The contact person for matters related to FRA 2010 is:

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1 Table T1 – Extent of Forest and Other wooded land

1.1 FRA 2010 Categories and definitions

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

1.2 National data

1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Ministry of Environment and Water	M	Forest and Date Palm	1990 - 2003	Agriculture and Fisheries-Facts and Figures covering all agricultural activities in the country.
Ministry of Environment and Water 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
Barari Forest Management	H	Forest management	2008	Annual report

1.2.2 Classification and definitions

National class	Definition
Forest	It corresponds to FRA
Other wooded land	Mangrove forest (natural protected areas and afforestation)
Other 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**	**2005**	**2007**[4]	**2010**
Forest		245	300	309.6	NDA	NDA	310.971	312	317.3	317.3
Mangroves	2.93[1]	NDA	NDA	NDA	NDA	4.00	3.552[2]	4.10	4.20	4.30
Date palm		22.4	36.5	59.2	170.3	185.3	185.3	193	185.3	185.30
Fruit trees		3.15	2.55	2.52	2.55	2.47	2.08	2.08	2.25	2.25
Sabkha	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6
Other land		NDA	NDA	NDA	NDA	NDA	7774.53[3]	7 765	7767.45	7767.25
TOTAL	**8360**	**8360**	**8360**	**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).
[4] 2008 data is not available yet.
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 Environment and Water.

National class	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	245	310	312	317.3
Mangroves	3.80	4.00	4.10	4.30
Date palm	22.4	185	193	185.30
Fruit trees	3.15	2.47	2.08	2.25
Sabkha [1]	83.6	83.6	83.6	83.6
Other land[2]	8 002	7 775	7 765	7767.25
TOTAL	**8 360**	**8 360**	**8 360**	**8 360**

[1] The area represents 1% out of total country area.

[2] Other land is calculated as the remaining area.

*data available till 2007

1.3.3 Reclassification into FRA 2010 categories

National classes	FRA 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%		

1.4 Data for Table T1

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	245	310	312	317.3
Other wooded land	3.80	4.00	4.10	4.30
Other land	8111.2	8046	8043.9	8038.4
...of which with tree cover	25.6	188	195	188
Inland water bodies	0	0	0	0
TOTAL	**8360**	**8360**	**8360**	**8360**

1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest		The large area expansion in 1990s was due to the afforestation projects during this period, while 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.

Other wooded land		An estimated 800-1200 hectares of mangroves (classified as OWL) have been planted since 1972.
Other land		
Other land with tree cover	Other land … of which with tree cover, include date palm, fruit trees and shrubs. 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).	
Inland water bodies		

Other general comments to the table

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

2 Table T2 – Forest ownership and management rights

2.1 FRA 2010 Categories and definitions

Category	Definition
Public ownership	Forest owned by the State; or administrative units of the public administration; or by institutions or corporations owned by the public administration.
Private ownership	Forest owned by individuals, families, communities, private co-operatives, corporations and other business entities, private religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.
Individuals *(sub-category of Private ownership)*	Forest owned by individuals and families.
Private business entities and institutions *(sub-category of Private ownership)*	Forest owned by private corporations, co-operatives, companies and other business entities, as well as private non-profit organizations such as NGOs, nature conservation associations, and private religious and educational institutions, etc.
Local communities *(sub-category of Private ownership)*	Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area. The community members are co-owners that share exclusive rights and duties, and benefits contribute to the community development.
Indigenous / tribal communities *(sub-category of Private ownership)*	Forest owned by communities of indigenous or tribal people.
Other types of ownership	Other kind of ownership arrangements not covered by the categories above. Also includes areas where ownership is unclear or disputed.
Categories related to the holder of management rights of public forest resources	
Public Administration	The Public Administration (or institutions or corporations owned by the Public Administration) retains management rights and responsibilities within the limits specified by the legislation.
Individuals/households	Forest management rights and responsibilities are transferred from the Public Administration to individuals or households through long-term leases or management agreements.
Private institutions	Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities, private co-operatives, private non-profit institutions and associations, etc., through long-term leases or management agreements.
Communities	Forest management rights and responsibilities are transferred from the Public Administration to local communities (including indigenous and tribal communities) through long-term leases or management agreements.
Other form of management rights	Forests for which the transfer of management rights does not belong to any of the categories mentioned above.

2.2 National data

Table 1 was used as input to this table. All land is publicly owned and under administration of the Ministry of Environment and Water and the municipalities.

2.3 Data for Table T2

Table 2a - Forest ownership

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public ownership	245	310	312
Private ownership	0	0	0
...of which owned by individuals			
...of which owned by private business entities and institutions			
...of which owned by local communities			
...of which owned by indigenous / tribal communities			
Other types of ownership	0	0	0
TOTAL	**245**	**310**	**312**

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

Does ownership of trees coincide with ownership of the land on which they are situated?	√	Yes
		No
If **No** above, please describe below how the two differ:		

Table 2b - Holder of management rights of public forests

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public Administration	245	310	312
Individuals	0	0	0
Private corporations and institutions	0	0	0
Communities	0	0	0
Other	0	0	0
TOTAL	**245**	**310**	**312**

2.4 Comments to Table T2

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Public ownership		
Private ownership		
Other types of ownership		
Management rights		

Other general comments to the table

3 Table T3 – Forest designation and management

3.1 FRA 2010 Categories and definitions

Term	Definition
Primary designated function	The primary function or management objective assigned to a management unit either by legal prescription, documented decision of the landowner/manager, or evidence provided by documented studies of forest management practices and customary use.
Protected areas	Areas especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.
Categories of primary designated functions	
Production	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Protection of soil and water	Forest area designated primarily for protection of soil and water.
Conservation of biodiversity	Forest area designated primarily for conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas.
Social services	Forest area designated primarily for social services.
Multiple use	Forest area designated primarily for more than one purpose and where none of these alone is considered as the predominant designated function.
Other	Forest areas designated primarily for a function other than production, protection, conservation, social services or multiple use.
No / unknown	No or unknown designation.
Special designation and management categories	
Area of permanent forest estate (PFE)	Forest area that is designated to be retained as forest and may not be converted to other land use.
Forest area within protected areas	Forest area within formally established protected areas independently of the purpose for which the protected areas were established.
Forest area under sustainable forest management	To be defined and documented by the country.
Forest area with management plan	Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, which is periodically revised.

3.2 National data

3.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Ministry of Environment and Water	M	Forest function	2003	Records kept by the Ministry of Environment and Water UAE
Ministry of Environment and Water UAE Marine Resources Research Centre	M	Other wooded land function	1978& 2003	Records kept by the Ministry of Environment and Water UAE Marine Resources Research Centre

3.2.2 Original data

Table 1 is used as input to this table

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).

3.3 Data for Table T3

Table 3a – Primary designated function

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production	0	0	0	0
Protection of soil and water	0	0	0	0
Conservation of biodiversity	0	0	0	0
Social services	0	0	0	0
Multiple use	245	310	312	317.3
Other (please specify in comments below the table)	0	0	0	0
No / unknown	0	0	0	0
TOTAL	**245**	**310**	**312**	**317.3**

Table 3b – Special designation and management categories

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Area of permanent forest estate	245	310	312	317.3
Forest area within protected areas	nd	nd	nd	nd
Forest area under sustainable forest management	245	310	312	317.3
Forest area with management plan	0	0	0	0

3.4 Comments to Table T3

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Production		
Protection of soil and water		
Conservation of biodiversity		
Social services		
Multiple use		
Other		
No / unknown designation		
Area of permanent forest estate		
Forest area within protected areas		
Forest area under sustainable forest management		
Forest area with management plan		

Other general comments to the table
Both forests and other wooded lands are of multiple purposes including conservation of biodiversity and soil protection but no productive function.

4 Table T4 – Forest characteristics

4.1 FRA 2010 Categories and definitions

Term / category	Definition
Naturally regenerated forest	Forest predominantly composed of trees established through natural regeneration.
Introduced species	A species, subspecies or lower taxon, occurring outside its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).
Characteristics categories	
Primary forest	Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Other naturally regenerated forest	Naturally regenerated forest where there are clearly visible indications of human activities.
Other naturally regenerated forest of introduced species *(sub-category)*	Other naturally regenerated forest where the trees are predominantly of introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
Planted forest of introduced species *(sub-category)*	Planted forest, where the planted/seeded trees are predominantly of introduced species.
Special categories	
Rubber plantations	Forest area with rubber tree plantations.
Mangroves	Area of forest and other wooded land with mangrove vegetation.
Bamboo	Area of forest and other wooded land with predominant bamboo vegetation.

4.2 National data

All forests are planted, no natural forest exists in the UAE

4.3 Data for Table T4

Table 4a

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest	0	0	0	0
Other naturally regenerated forest	0	0	0	0
...of which of introduced species	0	0	0	0
Planted forest	245	310	312	317.3
...of which of introduced species	0	0	0	0
TOTAL	**245**	**310**	**312**	**317.3**

Table 4b

FRA 2010 Categories	Area (1000 hectares)			
	1990	2000	2005	2010
Rubber plantations (Forest)	0	0	0	0
Mangroves (Forest and OWL)	3.8	4.0	4.1	4.3
Bamboo (Forest and OWL)	0	0	0	0

4.4 Comments to Table T4

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Primary forest		
Other naturally regenerating forest		
Planted forest		
Rubber plantations		
Mangroves		
Bamboo		

Other general comments to the table

5 Table T5 – Forest establishment and reforestation

5.1 FRA 2010 Categories and definitions

Term	Definition
Afforestation	Establishment of forest through planting and/or deliberate seeding on land that, until then, was not classified as forest.
Reforestation	Re-establishment of forest through planting and/or deliberate seeding on land classified as forest.
Natural expansion of forest	Expansion of forests through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture).

5.2 National data

The data used for table is the same as for table T1. All increase in forest area is attributed to afforestation.

5.3 Data for Table T5

FRA 2010 Categories	Annual forest establishment (hectares/year)			...of which of introduced species [1)] (hectares/year)		
	1990	2000	2005	1990	2000	2005
Afforestation	n. a	398	650	0	0	0
Reforestation	0	0	0	0	0	0
...of which on areas previously planted	0	0	0	0	0	0
Natural expansion of forest	0	0	0	0	0	0

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

5.4 Comments to Table T5

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Afforestation	Afforestation in UAE is mainly for environmental and soil conservation, and the density of plantation are low (200 tree/hectare).	
Reforestation		
Natural expansion of forest		

Other general comments to the table

6 Table T6 – Growing stock

6.1 FRA 2010 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.
Growing stock of commercial species	Growing stock (see def. above) of commercial species.

6.2 National data

6.2.1 Data sources

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

6.2.2 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.

6.2.3 Original data

The weighed volume of **48.9m^3/ha** has be applied to the forest area and **25m^3 /ha** to the OWL area. These figures are obtained from inventories of afforested areas at Al Ain, the eastern area of Abu Dhabi, applied to the whole forest area of the country.

The following data from Al Ain, the eastern area of Abu Dhabi Emirate, show the data and assumptions behind the estimated volumes per hectare:

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.

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: Calculation of 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

Based on the above-mentioned tables, the weighted volume/ha for forest is 2795805/57147= 48.9 m^3. This figure will be applied to forests for the whole country and 25m^3 (expert estimate) will be applied to the OWL area.

6.3 Data for Table T6

Table 6a – Growing stock

FRA 2010 category	Volume (million cubic meters over bark)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Total growing stock	11.981	15.166	15.233	15.516*	0.095	0.100	0.102	0.108
... of which coniferous	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
... of which broadleaved	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Growing stock of commercial species	0	0	0	0	0	0	0	0

* Growing stock calculations were based on data available of 2007 with an area of 317.3 (1000 hectares).

Table 6b – Growing stock of the 10 most common species

FRA 2010 category / Species name			Growing stock in forest (million cubic meters)		
Rank	Scientific name	Common name	1990	2000	2005
1st					
2nd					
3rd					
4th					
5th					
6th					
7th					
8th					
9th					
10th					
Remaining					
TOTAL					

Note: Rank refers to the order of importance in terms of growing stock, i.e. 1st is the species with the highest growing stock. Year 2000 is the reference year for defining the species list and the order of the species.

Table 6c – Specification of threshold values

Item	Value	Complementary information
Minimum diameter (cm) at breast height[1] of trees included in growing stock (X)	10.2	
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)		
Minimum diameter (cm) of branches included in growing stock (W)		
Volume refers to "above ground" (AG) or "above stump" (AS)	AG	

[1] Diameter at breast height (DBH) refers to diameter over bark measured at a height of 1.30 m above ground level or 30 cm above buttresses if these are higher than 1 m.

6.4 Comments to Table T6

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total growing stock	The total growing stock in table 6a for all UAE, is based on the weighted volume/ha obtained from Al Ain, the eastern area of Abu Dhabi.	
Growing stock of broadleaved / coniferous		
Growing stock of commercial species		
Growing stock composition		

Other general comments to the table

7 Table T7 – Biomass stock

7.1 FRA 2010 Categories and definitions

Category	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass	All biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood	All non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.

7.2 National data

7.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
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

7.2.2 Classification and definitions

National class	Definition
Above ground biomass	Same as FRA 2010
Below ground biomass	Same as FRA 2010
Dead wood biomass	Same as FRA 2010

7.2.3 Original data

The final data of table T6 was used as an input for carbon estimation

7.3 Analysis and processing of national data

Calculation of living biomass for forest

year	G.stock (Million m^3)	Basic density (Tones/ m^3)	Stem biomass (million tones)	Biomass exp.fact	AG biomass (million tones)	Root-Shoot ratio	B.G biomass (million tones)
1990	11.981	0.76	9.106	2	18.211	0.43	7.831
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
2010*	15.516	0.76	11.792	2	23.584	0.43	10.141

* Data for 2010 is calculated based on the growing stock for the available area of 2007 (317.3) (1000 hectares)

Calculation of living biomass for OWL

year	G.stock (Million m^3)	Basic density (Tones/ m^3)	Stem biomass (million tones)	Biomass exp.fact	AG 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
2010*	0.108	0.76	0.082	2	0.164	0.43	0.071

7.4 Data for Table T7

FRA 2010 category	**Biomass (million metric tonnes oven-dry weight)**							
	Forest				**Other wooded land**			
	1990	**2000**	**2005**	**2010**	**1990**	**2000**	**2005**	**2010**
Above-ground biomass	18.21	23.05	23.15	23.58	0.144	0.152	0.155	0.164
Below-ground biomass	7.83	9.91	9.96	10.14	0.062	0.065	0.067	0.071
Dead wood biomass	3.65	4.62	4.64	4.72	0.029	0.030	0.031	0.033
TOTAL	**29.69**	**37.58**	**37.75**	**38.45**	**0.235**	**0.248**	**0.253**	**0.268**

7.5 Comments to Table T7

Variable / category	**Comments related to data, definitions, etc.**	**Comments on the reported trend**
Above-ground biomass		
Below-ground biomass		
Dead wood		

Other general comments to the table
Expansion factor and conversion ratios used in FRA 2005 were also used in FRA 2010.

8 Table T8 – Carbon stock

8.1 FRA 2010 Categories and definitions

Category	Definition
Carbon in above-ground biomass	Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.
Carbon in dead wood	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in litter	Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm), lying dead in various states of decomposition above the mineral or organic soil.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a specified depth chosen by the country and applied consistently through the time series.

8.2 National data

8.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
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

8.2.2 Original data

The data of table T7 was used as an in put for table T8. A conversion factor of 0.47 was used. For litter, the default value of 2.1 t/ha was used.

8.3 Data for Table T8

FRA 2010 Category	Carbon (Million metric tonnes)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Carbon in above-ground biomass	8.56	10.83	10.88	11.08	0.068	0.071	0.073	0.077
Carbon in below-ground biomass	3.68	4.66	4.68	4.77	0.029	0.031	0.031	0.033
Sub-total: Living biomass	***12.24***	***15.49***	***15.56***	***15.85***	***0.097***	***0.102***	***0.104***	***0.110***
Carbon in dead wood	1.71	2.17	2.18	2.22	0.014	0.014	0.015	0.015
Carbon in litter	0.51	0.65	0.66	0.67	n.a.	n.a.	n.a.	n.a.
Sub-total: Dead wood and litter	***2.23***	***2.82***	***2.83***	***2.89***	***0.014***	***0.014***	***0.015***	***0.015***
Soil carbon	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TOTAL	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Soil depth (cm) used for soil carbon estimates				30 cm				

8.4 Comments to Table T8

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Carbon in above-ground biomass		
Carbon in below-ground biomass		
Carbon in dead wood		
Carbon in litter		
Soil carbon		

Other general comments to the table

9 Table T9 – Forest fires

9.1 FRA 2010 Categories and definitions

Category	Definition
Number of fires	Average number of vegetation fires per year in the country.
Area affected by fire	Average area affected by vegetation fires per year in the country.
Vegetation fire *(supplementary term)*	Any vegetation fire regardless of ignition source, damage or benefit.
Wildfire	Any unplanned and/or uncontrolled vegetation fire.
Planned fire	A vegetation fire regardless of ignition source that burns according to management objectives and requires limited or no suppression action.

9.2 National data

No forests were affected by forest fires. No information is available about other vegetation fires.

9.3 Data for Table T9

Table 9a

FRA 2010 category	Annual average for 5-year period					
	1990		2000		2005	
	1000 hectares	number of fires	1000 hectares	number of fires	1000 hectares	number of fires
Total land area affected by fire	nd	nd	nd	nd	nd	nd
... of which on forest	0	0	0	0	0	0
... of which on other wooded land	nd	nd	nd	nd	nd	nd
... of which on other land	nd	nd	nd	nd	nd	nd

Table 9b

FRA 2010 category	Proportion of forest area affected by fire (%)		
	1990	2000	2005
Wildfire			
Planned fire			

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

9.4 Comments to Table T9

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Area affected by fire		
Number of fires		
Wildfire / planned fire		

Other general comments to the table

10 Table T10 – Other disturbances affecting forest health and vitality

10.1 FRA 2010 Categories and definitions

Term	Definition
Disturbance	Damage caused by any factor (biotic or abiotic) that adversely affects the vigour and productivity of the forest and which is not a direct result of human activities.
Invasive species	Species that are non-native to a particular ecosystem and whose introduction and spread cause, or are likely to cause, socio-cultural, economic or environmental harm or harm to human health.
Category	**Definition**
Disturbance by insects	Disturbance caused by insect pests.
Disturbance by diseases	Disturbance caused by diseases attributable to pathogens, such as bacteria, fungi, phytoplasma or virus.
Disturbance by other biotic agents	Disturbance caused by biotic agents other than insects or diseases, such as wildlife browsing, grazing, physical damage by animals, etc.
Disturbance caused by abiotic factors	Disturbances caused by abiotic factors, such as air pollution, snow, storm, drought, etc.

10.2 National data

10.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Barari Forest management	H	Disturbances by Insects	2008	Annual report 2008

10.3 Data for Table T10

Table 10a – Disturbances

FRA 2010 category	Affected forest area (1000 hectares)		
	1990	2000	2005
Disturbance by insects	3.0	4.045	5.0
Disturbance by diseases	0	0	0
Disturbance by other biotic agents	0	0	0
Disturbance caused by abiotic factors	0	0	0
Total area affected by disturbances	**3.0**	**4.045**	**5.0**

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

The total area affected by disturbances is not necessarily the sum of the individual disturbances as these may be overlapping.

Table 10b – Major outbreaks of insects and diseases affecting forest health and vitality

Description / name	Tree species or genera affected (scientific name)	Year(s) of latest outbreak	Area affected (1000 hectares)	If cyclic, approx. cycle (years)
Spodeptra	*Salvadore persica*	2008	5.0	annually

Note: Area affected refers to the total area affected during the outbreak.

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

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

Note: The total forest area affected by woody invasive species is not necessary the sum of the values above, as these may be overlapping.

10.4 Comments to Table T10

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Disturbance by insects		
Disturbance by diseases		
Disturbance by other biotic agents		
Disturbance caused by abiotic factors		
Major outbreaks		
Invasive species		

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

11 Table T11 – Wood removals and value of removals

11.1 FRA 2010 Categories and definitions

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

11.2 National data

All forests are for soil protection and conservation. No wood is removed for industrial purposes.

11.3 Data for Table T11

FRA 2010 Category	Industrial roundwood removals			Woodfuel removals		
	1990	2000	2005	1990	2000	2005
Total volume (1000 m^3 o.b.)	0	0	0	nd	nd	nd
... of which from forest	0	0	0	nd	nd	nd
Unit value (local currency / m^3 o.b.)	0	0	0	nd	nd	nd
Total value (1000 local currency)	0	0	0	nd	nd	nd

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

	1990	2000	2005
Name of local currency			

11.4 Comments to Table T11

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total volume of industrial roundwood removals		
Total volume of woodfuel removals		
Unit value		
Total value		

Other general comments to the table

12 Table T12 – Non-wood forest products removals and value of removals

No data are available for this reporting table.

13 Table T13 – Employment

No data are available for this reporting table.

14 Table T14 – Policy and legal framework

14.1 FRA 2010 Categories and definitions

Term	Definition
Forest policy	A set of orientations and principles of actions adopted by public authorities in harmony with national socio-economic and environmental policies in a given country to guide future decisions in relation to the management, use and conservation of forest and tree resources for the benefit of society.
Forest policy statement	A document that describes the objectives, priorities and means for implementation of the forest policy.
National forest programme (nfp)	A generic expression that refers to a wide range of approaches towards forest policy formulation, planning and implementation at national and sub-national levels. The national forest programme provides a framework and guidance for country-driven forest sector development with participation of all stakeholders and in consistence with policies of other sectors and international policies.
Law (Act or Code) on forest	A set of rules enacted by the legislative authority of a country regulating the access, management, conservation and use of forest resources.

14.2 Data for Table T14

Indicate the existence of the following (2008)			
Forest policy statement with national scope			Yes
		√	No
If Yes above, provide:	Year of endorsement		
	Reference to document		
National forest programme (nfp)			Yes
		√	No
If Yes above, provide:	Name of nfp in country		
	Starting year		
	Current status		In formulation
			In implementation
			Under revision
			Process temporarily suspended
	Reference to document or web site		
Law (Act or Code) on forest with national scope			Yes, specific forest law exists
			Yes, but rules on forests are incorporated in other (broader) legislation
		√	No, forest issues are not regulated by national legislation
If Yes above, provide:	Year of enactment		
	Year of latest amendment		
	Reference to document		

In case the responsibility for forest policy- and/or forest law-making is decentralized, please indicate the existence of the following and explain in the comments below the table how the responsibility for forest policy- and law-making is organized in your country.		
Sub-national forest policy statements		Yes
	√	No
If Yes above, indicate the number of regions/states/provinces with forest policy statements		
Sub-national Laws (Acts or Codes) on forest		Yes
	√	No
If Yes above, indicate the number of regions/states/provinces with Laws on forests		

14.3 Comments to Table T14

Variable / category	**Comments related to data, definitions, etc.**
Forest policy statement with national scope	
National forest programme (nfp)	
Law (Act or Code) on forest with national scope	
Sub-national forest policy statements	
Sub-national Laws (Acts or Codes) on forest	

Other general comments to the table

15 Table T15 – Institutional framework

No data are available for this reporting table.

16 Table T16 – Education and research

16.1 FRA 2010 Categories and definitions

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

16.2 National data

16.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments

16.2.2 Original data

There is no forest related education in UAE and no public forest research centers.

16.3 Data for Table T16

FRA 2010 Category	Graduation [1] of students in forest-related education					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Master's degree (MSc) or equivalent	0		0		0	
Bachelor's degree (BSc) or equivalent	0		0		0	
Forest technician certificate / diploma	0		0		0	
FRA 2010 Category	**Professionals working in publicly funded forest research centres [2]**					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Doctor's degree (PhD)	0	0	0	0	0	0
Master's degree (MSc) or equivalent	0	0	0	0	0	0
Bachelor's degree (BSc) or equivalent	0	0	0	0	0	0

Notes:

1. Graduation refers to the number of students that have successfully completed a Bachelor's or higher degree or achieved a certificate or diploma as forest technician.
2. Covers degrees in all sciences, not only forestry.

16.4 Comments to Table T16

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Graduation of students in forest-related education		
Professionals working in public forest research centres		

Other general comments to the table

17 Table T17 – Public revenue collection and expenditure

No data are available for this reporting table.