Forestry Department
Food and Agriculture Organization of the United Nations

GLOBAL FOREST RESOURCES ASSESSMENT 2010

COUNTRY REPORT

ANTIGUA AND BARBUDA

FRA2010/008
Rome, 2010

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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Contents

Due to lack of information, only Tables T1 and T4b are reported upon. For the remaining tables no information is available.

Report preparation and contact persons

No report was received from Antigua and Barbuda. This report is the result of a desk study prepared by the FRA secretariat which summarizes existing available information using the established format for FRA 2010 country reports.

1 Table T1 – Extent of Forest and Other wooded land

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.

National data

Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
a) Atkins Land and Water Management. 1983. Soil and water conservation, Windward and Leeward Islands, Phase 1: Reconnaissance Study. Draft Final Report, as cited in Caribbean Development Bank, DFS-GmbH, Regional Forestry Sector Study, Country Report, Antigua and Barbuda, 1983.	M	Forest cover	1980	Regional Forestry Sector Study country report for Antigua and Barbuda gives forest cover figures for Antigua in 1980 based on the work of Atkins Land and Water Management and published in 1983. Assessed as Medium quality because report does not cite methods or definitions. Mangrove area likely underestimated
b) Putney, A.D. 1982. Survey of conservation priorities in the Lesser Antilles. Technical Report 1. Caribbean	M	Area of Mangroves	1982	
c) Bacon, P. R**.** 1991. *The Status of Mangrove Conservation in the Caricom Islands of the Eastern Caribbean. R*eport to the Commission of the European Communities as part of the Tropical Forestry Action Plan for the Caribbean Region. University of the West Indies, Mona, Jamaica. 211 pp.	H	Area of mangroves	1991	Ground inventory of 36 mangrove sites in Antigua and 9 in Barbuda. Includes all mangroves, also those with height less than 5 meters.

d) FAO. 1997. Project Forest Resources Assessment of the Caribbean Sub-Region, G-3897, Country Report, Antigua.	M	Forest cover	1980	Presents forest cover figures for Barbuda, citing the DFS-CDB 1983 study as the source. Used to confirm information presented in Atkins Land and Water Management, 1983. Assessed as Medium quality because figures are based on Atkins Land and Water Management (1983), which does not cite methods or definitions.

Classification and definitions

Definitions according to Atkins (1983)

National class	Definition
Moist forest	Closed forest (>40% canopy cover, with trees > 5m tall)
Dry woodland	Closed forest (>40% canopy cover, with trees > 5m tall)
Cactus scrub	Open forest (10-40% canopy cover, with trees > 5m tall)
Mangroves	Closed forest (>40% canopy cover, with trees > 5m tall)
Shrubs	Other wooded land (5-10% canopy cover, with trees and/or shrubs > 5m tall, or >10% canopy cover with trees and/or shrubs < 5m tall)

Original data

(Atkins, 1983)

National class	1980 (1000 ha)
Moist forest	2.2
Dry woodland	5.8
Mangrove	0.3
Cactus scrub	1.1
Shrub	15.6
Total forest	**9.4**
Total other wooded land	**15.6**
Total other land	**19.0**
Total land	**44.0**

(Putney, 1982)

National class	1980 (1000 ha)
Mangrove	1.500

(Bacon, 1991)

National class	1980 (1000 ha)
Mangrove	1.175

Analysis and processing of national data

Calibration

There is no need to perform calibration because the national land area data matches the FAOSTAT land area.

Estimation and forecasting

The forest area according to Atkins, excluding the mangroves, has been assumed constant over time due to lack of time series data. The area of mangroves (which also includes an unknown component of other wooded land) for 1990, 2000 and 2005 was estimated using linear inter- and extrapolation of the data from Putney and Bacon. Mangrove area for 2010 was assumed the same as for 2005.

The inclusion of data from the mangrove studies of Putney and Bacon is the reason why the reported figures are different from those reported to FRA 2005.

Reclassification into FRA 2010 categories

	FRA 2005 Categories				
National Classes	**Forest**	**OWL**	**Other land**	**Total**	**OLWTC**
Moist forest	100%			100%	n.a.
Dry woodland	100%			100%	n.a.
Mangrove	100%			100%	n.a.
Cactus scrub	100%			100%	n.a.
Shrub		100%		100%	n.a.
Non forest			100%	100%	n.a.

In table T4 there is an estimated time series of mangrove area based on data sources considered being of higher quality than Atkins. The difference between the mangrove area according to table T4 and 300 hectares as of Atkins has been added to the forest area and subtracted from other land.

Data for Table T1

FRA 2010 categories	Area (1000 hectares)			
	1990	**2000**	**2005**	**2010**
Forest	10.3	10.0	9.8	9.8
Other wooded land	15.6	15.6	15.6	15.6
Other land	18.1	18.4	18.6	18.6
...of which with tree cover	n.a.	n.a.	n.a.	n.a.
Inland water bodies	0	0	0	0
TOTAL	**44.0**	**44.0**	**44.0**	**44.0**

Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest	May include mangrove areas with height less than 5 m.	The trend only reflects the estimated trend of the area of mangroves. The area of all other forest types are assumed constant due to lack of time series data.
Other wooded land	Mangrove areas with height less than 5 m are included under Forest.	
Other land		
Other land with tree cover		
Inland water bodies		

Other general comments to the table
Although more recent estimates of forest cover for Antigua and Barbuda exist, Atkins Land and Water Management (1983) estimate is the only one documented in such a way as to allow reclassification to FRA classes.

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

2 Table T4 – Forest characteristics

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.

National data

Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAO.2007. Working paper 137. Mangroves of North and Central America 1980-2005.		Mangroves	1990 2000 2005	Estimates based on sources below
Putney, A.D. 1982. Survey of conservation priorities in the Lesser Antilles. Technical Report 1. Caribbean		Mangroves	1982	
Bacon, P. R. 1991. *The Status of Mangrove Conservation in the Caricom Islands of the Eastern Caribbean. R*eport to the Commission of the European Communities as part of the Tropical Forestry Action Plan for the Caribbean Region. University of the West Indies, Mona, Jamaica. 211 pp.		Mangroves	1991	

Classification and definitions

National class	Definition
Mangroves	Mangroves are found on both Antigua and Barbuda islands. Antigua's low-lying coasts have many saline ponds and tidal mud flats that carry stunted mangrove vegetation of the species *Rhizophora mangle*, *Avicennia germinans* (syn *A. nitida*) and *Laguncularia racemosa*. Mangroves are found usually on mud or sandbanks sites that are not actually inundated but have a high brackish-water table. "Manchineel" swamps of *Hippomane mancinella* with some *Annona glabra* and *Acrostichum sp.* are often found bordering the mangrove swamps. Whereas the mangrove trees are commonly stunted and do not exceed 4.5 m in height, the manchineel attains 9 to 12 m with girths of up to 1.2 m. The biggest area of mangroves occurs in Hansons Bay (Antigua) swamp, with some trees reaching up to 10 m. In Barbuda fringing mangroves are found around salt flats and lagoons, the biggest stand being along Codrington Lagoon.

Original data

Putney: 1500 hectares (1982)
Bacon: 1175 hectares (1991)

Analysis and processing of national data

Estimation and forecasting

Only data on mangroves are available. A linear inter- and extrapolation was made based on the above data to get estimates for the reporting years up to 2005. For 2010 the same value as for 2005 has been used.

Data for Table T4

Table 4a

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

Table 4b

FRA 2010 Categories	Area (1000 hectares)			
	1990	2000	2005	2010
Rubber plantations (Forest)	n.a.	n.a.	n.a.	n.a.
Mangroves (Forest and OWL)	1.211	0.850	0.669	0.669
Bamboo (Forest and OWL)	n.a.	n.a.	n.a.	n.a.

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		The trend is based on data from 1982 and 1991. The estimated 2005 figure was therefore kept constant for 2010.
Bamboo		

Other general comments to the table