GLOBAL FOREST RESOURCES ASSESSMENT 2010

COUNTRY REPORT

MALDIVES



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 upto-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).

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

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Introduction

The republic of Maldives is a coral archipelago consisting of 1190 islands, forming a chain of 820 km at its length and 130km at its width. These islands are grouped into 26 coral atoll sets in an area of 90,000sq.km in the Indian Ocean. At least 90 percent of this area consists of seas. The islands are small, few with a land area in excess of one kilometre. They are low-laying with an average elevation of 1.6m above sea level.

The natural vegetation of an island consists of a variety of plants growing in profusion. The vegetation is relatively uniform and follows a common pattern: salt-tolerant bushes a the island edges then large trees and coconut palms further inland. All islands are dominated by large stands of coconut, with coastal fringe forest consisting of *Pemphis acidula*, *Suriana maritime* etc. while the low lying richer soil support isolated strands of numerous species such as *Cocos nucifera*, *Terminalia cattappa*, *Calophullum inophyllum*, *Hibiscus sp.* as well as *Artocarpus altilis*, these multi-purpose trees dominating coconut fulfils the needs, such as boat and house building, fuel wood, fencing, foods and medicine etc. within such vegetation, at least 13 species of mangrove exists in the country which acts as wind breaks and combat tidal surge and provide timber for boat building. Fruits of some varieties are edible and are used seasonally as a minor constituent of rural diet. Soils are poor and highly porous rainfall is generally variable.

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 Land classified as "Other land", spanning more than 0.5 hectares with a c			
(Subordinated to "Other	cover of more than 10 percent of trees able to reach a height of 5 meters at		
land")	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	Variable(s)	Year(s)	Additional
	(H/M/L)			comments
CIA, 2000. The World Fact Book 2000	M	Extent	2000	
(http://www.authorama.com/world-2000-d-3.html)				
CIA, 1990. The World Fact Book 1990	M	Extent	1990	
(http://www.theodora.com/wfb1990/maldives/maldives_ge				
ography.html)				

1.2.2 Classification and definitions

National class	Definition
Arable land	Land cultivated for crops that are replanted after each harvest like wheat, maize, and rice
Permanent crops	Land cultivated for crops that are not replanted after each harvest like citrus, coffee, and rubber;
Permanent pastures	Land permanently used for herbaceous forage crops
Forests and Woodlands Land under dense or open stands of trees	
Other land	Any land type not specifically mentioned above, such as urban areas, roads, desert, etc
Total Area It is the sum of all land and water areas delimited by international bounda and/or coastlines	
Land Area It is the aggregate of all surfaces delimited by international boundaries an coastlines, excluding inland water bodies (lakes, reservoirs, rivers)	
Water Area It is the sum of all water surfaces delimited by international boundarie coastlines, including inland water bodies (lakes, reservoirs, rivers).	

(Source: CIA World Fact Book, 2000)

1.2.3 Original data

Land use: arable land: 10% permanent crops: 0% permanent pastures: 3% forests and

woodland: 3% other: 84% (1993 est.)

National class	Extent in ha		
	1990	2000	
Arable land	3000 (10%)	3000 (10%)	
Permanent crops	0 (0%)	0 (0%)	
Permanent pastures	900 (3%)	900 (3%)	
Forests and Woodlands	900 (3%)	900 (3%)	
Other land	25200 (84%)	25200 (84%)	
Land Area	30000	30000	
Water Area	0	0	
Total Area	30000	30000	

(Note: For breakdown of land use into five classes - CIA reports percentages mentioned in the brackets)

1.3 Analysis and processing of national data

1.3.1 Calibration

Not needed as total area and land area figures for the country match with UN STAT and FAO STAT figures.

1.3.2 Estimation and forecasting

There is no need for estimation as figures for 1990 and 2000 are available. The forecasted figures for 2005 are assumed to be the same as 2000 as no change has been reported between 1990 and 2000. Same figures have been applied for 2010 since no new figures to update the trend are so far available.

1.3.3 Reclassification into FRA 2010 categories

CIA Categories	FRA 2005 classes (%)			
	Forest	Other Land	Inland water bodies	
Arable land		100		
Permanent crops		100		
Permanent pastures		100		
Forests and Woodlands	100			
Other land		100		
Water Area			100	

1.4 Data for Table T1

ED 4 2010	Area (1000 hectares)				
FRA 2010 categories	1990	2000	2005	2010	
Forest	0.9	0.9	0.9	0.9	
Other wooded land	0	0	0	0	
Other land	29.1	29.1	29.1	29.1	
of which with tree cover					
Inland water bodies	0	0	0	0	
TOTAL	30	30	30	30	

1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest	Coconut palm groves are included as they are typically non-monocultures, composed of a mix of coconut palms and various other tress and bushes. Naturally occurring vegetation.	
Other wooded land		
Other land		
Other land with tree cover		
Inland water bodies	Exist, but no through assessment has been done so far to quantify a figure.	

Other general comments to the table

The Maldives is an archipelago of nearly 1,190 coral islands grouped into 26 atolls (200 inhabited islands, plus 80 islands with tourist resorts). All the islands are threatened by sea level rise. Species include coconut, iron wood, breadfruit, mangrove, red bean tree, tangion, sea trumpet and Alexander laurelwood, which are harvested for the construction of boats and buildings. Many timber and wood products are imported. The estimate for forests and woodlands is thus a rough estimate.

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
Private ownership	administration. 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
Individuals (sub-category of Private ownership)	associations and other private institutions. 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 cooperatives, 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

2.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Ministry of Fisheries,				
Agriculture and Marine				
Resources and FAO.				
March 2006.Agricultural				
development Master Plan				
of Maldives				

2.2.2 Classification and definitions

National class	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	Forest owned by individuals and families.
(sub-category of	
Private ownership)	
Private business	Forest owned by private corporations, co-operatives, companies and other
entities and	business entities, as well as private non-profit organizations such as NGOs,
institutions	nature conservation associations, and private religious and educational
(sub-category of	institutions, etc.
Private ownership)	
Local communities	Forest owned by a group of individuals belonging to the same community
(sub-category of	residing within or in the vicinity of a forest area. The community members are
Private ownership)	co-owners that share exclusive rights and duties, and benefits contribute to the
	community development.

2.2.3 Original data

The Agricultural Master Plan gives the best available description of the land tenure system. Accordingly, state owns all lands in the Maldives. For administrative purposes a distinction is drawn between inhabited islands (200 island) and uninhabited islands (990 island). Uninhabited islands, mostly covered by coconut trees and a number of other tree species, are leased out by the government to private individuals or companies. The law regulating the lease of uninhabited islands for agriculture development states that "...the lessee must rehabilitate woodlots, improve and maintain the island according to this law and the regulations under this law".

The <u>uninhabited islands</u> are leased by the government to individuals or private companies for promotion of agriculture, tourism/resorts depending upon the size and resource endowment of the island. Islands for tourist resort development are leased to private entrepreneurs for a period of 20 to 30 years for the sole purpose of resort development. Islands for the development of commercial agriculture are leased to individuals or private companies for

commercial production. Theses islands numbered 32 with a total area of 997 ha and rented for a maximum duration of 21 years. Depending on the size of the investment-with a minimum of US\$10,000,the lessee is entitled to extend the period of rent for up to 35 years. The policy instituted by the ministry of Environment dictates that only 20 percent of the area can be used for building and construction. This measure is intended to protect the natural environment of the island and reduce pressure on the limited resources.

The land tenure regime on <u>inhabited island</u> is more complex. Entire land on inhibited island is categorized into ;(a) homestead plots, (b) *goi* land, (c) *faalabb*' land with different rights to use. In the case of homestead plots each family is entitled to a homestead allotment, the usual size is approximately 15m by 30m. Where land is in short, homestead sizes are much smaller, sometimes even without any space for a garden. No rent is paid on this allotment, and all the trees grown on homestead allotment is inheritable under Islamic law.

Goi land (on a section of the inhibited island) is leased to residents on the island for seasonal cultivation and the rent-payment to the lessee (i.e., Ministry of Fisheries, Agriculture and Marine Resources (MoFAMR)) is of 1/8 (or 12.5%) of the value of crops produced.

The government land called *faalabba*, usually located near the village on inhibited islands, is used by the island community members to grow valuable tree crops with the permission of the island Chief. Half of the trees planted become the property of the State and the remaining half is owned by the grower. A lessee collects the produce of the Government trees and the individual planters collect the produce of their respective trees. In the 'faalabba' area, each tree planted has a distinguishing mark ('thah') and the trees planted are divided as follows:

- Trees owned by government
- Trees owned by different individual growers
- Trees owed half by the government and one half by individual growers;
- Trees naturally grown and owned by the island community; and
- Trees belonging to the person responsible for marking of trees

The islanders also have access to community forest land, where they can grow forest trees or tree crops such as mango, breadfruit, coconut and other fruit trees or practice intercropping with field crops. Apart from backyard garden areas on inhabited islands, people on some islands are also allotted with communal land free of charge for growing annual crops. However, there is no standard rule applied for this type of land tenure; in some islands, for instance, these lots change hand very year, but in some other islands, growers can hold the land as long as they remain as cultivators. Naturally then, the former very rarely undertake land improvement activities.

Despite varying MoFAMR regulations the guidelines are not clear enough to guide the island officers in land allocation. therefore varying allocation practices may appear in the same island.

There is no systematic mechanism for effective monitoring and lack in the effective supervision and control so that whether or not the lessee actually honoured their commitment was not known. Appropriate land tenure systems are critically important for promotion of agricultural or forest related development. There is no discrimination is access to land between men and women. Both can own and lease on equal terms.

This information is not sufficient to compile table 2.4.

2.3 Data for Table T2

Table 2a - Forest ownership

EDA 2010 Catagorias	Forest area (1000 hectares)			
FRA 2010 Categories	1990	2000	2005	
Public ownership	.n.a.	n.a.	n.a.	
Private ownership	n.a.	n.a.	n.a.	
of which owned by individuals	n.a.	n.a.	n.a.	
of which owned by private business entities and institutions	n.a.	n.a.	n.a.	
of which owned by local communities	n.a.	n.a.	n.a.	
of which owned by indigenous / tribal communities	n.a	n.a	n.a	
Other types of ownership	n.a	n.a	n.a	
TOTAL	0.9	0.9	0.9	

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

Does ownership of trees coincide with ownership of the	X	Yes
land on which they are situated?		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)			
TRA 2010 Categories	1990	2000	2005	
Public Administration	.n.a.	.n.a.	.n.a.	
Individuals	.n.a.	.n.a.	.n.a.	
Private corporations and institutions	.n.a.	.n.a.	.n.a.	
Communities	.n.a.	.n.a.	.n.a.	
Other	.n.a.	.n.a.	.n.a.	
TOTAL	.n.a.	.n.a.	.n.a.	

2.4 Comments to Table T2

Variable /	Comments related to data, definitions,	Comments on the reported trend
category	etc.	
Public ownership	The ministry of Fisheries, Agriculture and Marine resources are the regulatory body with responsible for the forestry in the Maldives.	
Private ownership		

Other types of ownership		
Management rights	All lands belong to the Maldives and islanders are granted communal land, free of charge, for the cultivation of annual crops.	

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 design	gnated 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 ma	anagement 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
Commercialization of Agriculture in the Maldives. Main report.	Н		TA No. 4337- ML.April 2005	-

3.2.2 Classification and definitions

National class	Definition
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.

3.2.3 Original data

Ministry of fisheries, Agriculture and Marine Resources: in the mandate of the ministry the following points are relevant for forest resources management:

- To undertake timber rehabilitation, management and development
- To control the import of exotic trees and the export of indigenous tree species

Assuming that forest resources are implicitly contained under agriculture it seems that all essential functions of the ministry for sustainable management of forest resources are there. However, design of policies and strategic plans is largely dependent of foreign consultants; implementation and monitoring suffer from the capacity of constraints.

Forest management for timber production requires a long planning horizon. Long-term commercial lease on uninhabited islands would be in the Maldivian circumstances the most suitable land tenure instrument, provided that the lease period is long enough to motivate for investments in tree planting and in improvement of the existing forest stands. Duration of lease should be 30-50 years and renewable, it the lessee has managed the resource according to the lease conditions, which are elaborated in a compulsory forest management plan.

There is not sufficient data available to compile this table.

3.3 Data for Table T3

Table 3a – Primary designated function

FRA 2010 Categories	Forest area (1000 hectares)			
rka 2010 Categories	1990	2000	2005	2010
Production	n.a	n.a	n.a	n.a
Protection of soil and water	n.a	n.a	n.a	n.a
Conservation of biodiversity	n.a	n.a	n.a	n.a
Social services	n.a	n.a	n.a	n.a
Multiple use	n.a	n.a	n.a	n.a
Other (please specify in comments below the table)	n.a	n.a	n.a	n.a
No / unknown	n.a	n.a	n.a	n.a
TOTAL	0.9	0.9	0.9	0.9

Table 3b – Special designation and management categories

FRA 2010 Categories	Forest area (1000 hectares)			
rka 2010 Categories	1990	2000	2005	2010
Area of permanent forest estate	n.a	n.a	n.a	n.a
Forest area within protected areas	n.a	n.a	n.a	n.a
Forest area under sustainable forest management	n.a	n.a	n.a	n.a
Forest area with management plan	n.a	n.a	n.a	n.a

3.4 Comments to Table T3

Variable /	Comments related to data, definitions,	Comments on the reported trend
category	etc.	
Production	In the absence of better yield data a rule-of-thumb could be applied: 1 cubic meter per hectare per annum could represent a conservative annual allowable cut from the forest land on uninhabited islands, provided that the forest is management is on a sustainable basis.	Increasing timber production has been presented in development plans as a priority factor in promoting and sustaining the limited forest resources. Demand for wood (mainly for firewood, boat building and house construction) outstrips supply, mainly due to population pressures and previous improper management. Wood is recognized as a valuable natural resource in the Maldives and the preservation and regeneration of timber stocks is an important element of government policy.
Protection of soil and water	Undistributed littoral forest along the coast provides essential protection of the shoreline against storms and tidal waves. This was one of the conclusions in the aftermath of Tsunami.	
Conservation of biodiversity	Maldives, as one of the first nations, signed the Convention of Biological Diversity in 1992. This indicates appreciation of biodiversity conservation in the country. The Action plan defines	

	the vision and guiding principles for the sector, which are elaborated in section 3.8(26a). The plan sets three goals: (1) conserve the biological diversity and sustainability utilize biological resources;(2)built capacity for biodiversity conservation through a strong governance framework, and improved knowledge and understanding;(3)foster community participation, ownership and support for biodiversity conservation.	
Social services		
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 com	nents to the table	
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Forest area with management plan		
Other general comn	nents to the table	
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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 <u>outside</u> 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	Planted forest, where the planted/seeded trees are predominantly of
(sub-category)	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

4.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Report to the government of the Maldives on Mangrove conservation and management	Н	TCP/MDV/2251(A)	1993	The offer for this study came under the program "support to community tree planting" as a consultancy on mangrove conservation and management. This was offered by FAO under TCP/MDV/2251(A). The duration of the study was only four weeks

4.2.2 Classification and definitions

National class	Definition
Mangroves	Maldivian Mangroves are either lagoon or depression oriented. The lagoon water is normally shallow with a depth of about 9 inches during long tide. It has direct opening to sea and tide visits are regular. The lagoon water is relatively clear. Humus accumulation in such area is almost nil. The depression harbouring mangrove vegetation is devoid of direct flushing by tide water from the sea. During June/ July hey receive a tide flushing of saline sea water, but from underneath the forest floor. This water percolates slowly through the coral stones during high spring tides. They have some underneath connections with the sea water. Many of these depressions have a stagnant water layer of 2 to 3 inches which is turbid and full of decayed forest litter and humus.

4.2.3 Original data

Extent and distribution of mangroves

It is reported that the northern atolls have more mangroves than that of the south. The total number of islands is 1190. Out of these 200 islands are inhabited, 94 islands have been brought under use as Resorts, 54 island as commercially leased islands and the rest are still uninhabited. It is reported that the inhabited ones are richer in mangrove. The correct distribution and extend is not known. No map showing the location of mangroves in Maldives is available. Till date no map is available showing the extant and distribution of this resource. Mangrove vegetation is observed in the following islands;

Atoll	Island	Atoll	Island	Atoll	Island
K	Gaafaru	Sh	Goidhoo	N	Goidhoo
K	Kaashidhoo	Sh	Milandhoo	N	Landhoo
Sh	FarukolhuFunadhoo	Sh	Maakadoodhoo	N	Kedhikolhu
Sh	Maaugoodhoo	Sh	Eriadhoo	N	Kan'doodhoo
Sh	Funadhoo	Sh	Ekasdhoo	A.dh	Ariadhoo
Sh	Maakandhoo	Ha	Kelai	A.dh	Kulhudhufushi
Sh	Neyo	Ha	Filladhoo	H.dh	Keylakunu
Sh	Feydhoo	Ha	Muraadhoo	H.dh	Neykurendhoo
Sh	Foakaidhoo	Ha	Baarah		
Sh	Kanditheemu	Ha	Thakandhoo		
Sh	Maaugoodhoo	S	Villigili		
Sh	Keekimini	S	Hithadhoo		

Their size composition and pattern vary from island to island, depending on the availability of wet depression or lagoon front in the island.

No quantitative information is available to complete this table.

4.3 Data for Table T4

Table 4a

EDA 2010 Cotogories	Forest area (1000 hectares)				
FRA 2010 Categories	1990	2000	2005	2010	
Primary forest	n.a	n.a	n.a	n.a	
Other naturally regenerated forest	n.a	n.a	n.a	n.a	
of which of introduced species	n.a	n.a	n.a	n.a	
Planted forest	n.a	n.a	n.a	n.a	
of which of introduced species	n.a	n.a	n.a	n.a	
TOTAL	0.9	0.9	0.9	0.9	

- All the forest in the uninhabited islands are primary forest
- They are naturally regenerated, as there are no reforestation activities
- It will be hard to know the introduced spp and there area

Table 4b

ED A 2010 Catagories	Area (1000 hectares)				
FRA 2010 Categories	1990	2000	2005	2010	
Rubber plantations (Forest)	n.a	n.a	n.a	n.a	
Mangroves (Forest and OWL)	n.a	n.a	n.a	n.a	
Bamboo (Forest and OWL)	n.a	n.a	n.a	n.a	

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

5.2.1 Original data

In Maldives there is always the phenomenon of natural expansion, and as with regard to reforestation this has been carried out not to an extent that it reaches even a hectare. Also this is done in different islands from time to time. And there is hardly an area for Afforestation activity in Maldives.

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	0	0	0	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	n.a	n.a	n.a	n.a	n.a	n.a	

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 /	Comments related to data, definitions,	Comments on the reported trend
category	etc.	
Afforestation		
Reforestation		
Natural expansion		
of forest		

0	ther general comments to the	ne table		

6 Table T6 - Growing stock

No data available.

7 Table T7 - Biomass stock

No data available.

8 Table T8 - Carbon stock

No data available.

9 Table T9 - Forest fires

No data available

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
Establishment of a laboratory to diagnose and manage pest & diseases	H-	-	2004	-

10.2.2 Classification and definitions

National class	Definition
Disturbance by other	Disturbance caused by biotic agents other than insects or diseases, such as
biotic agents	wildlife browsing, grazing, physical damage by animals, etc.
Disturbance caused by	Disturbances caused by abiotic factors, such as air pollution, snow, storm,
abiotic factors	drought, etc.

10.3 Data for Table T10

Table 10a – Disturbances

FRA 2010 category	Affected forest area (1000 hectares)			
FRA 2010 Category	1990	2000	2005	
Disturbance by insects	n.a	n.a	n.a	
Disturbance by diseases	n.a	n.a	n.a	
Disturbance by other biotic agents	n.a	n.a	n.a	
Disturbance caused by abiotic factors	n.a	n.a	n.a	
Total area affected by disturbances	n.a	n.a	n.a	

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)
Brontispa longissima	Cocos nucifera	No specific time, always present, 1 st introduce in 1999	Major areas of Ari atoll	
Xanthomonas campestris	Citrus aurantifolia	No specific time, always present, 1 st introduced in 1980	All areas	
Orystes rhinoceros	Cocos nucifera	No specific time, always present, 1 st introduces in 1970	All areas	
Lymantria dispar	Hibiscus tiliaceae, Ochrosia borbonica, Calophyllum inophyllum, Thespesia populanea, Cordia subcordata, Barringtonia asiatica, Pemphis acidula, Terminalia catappa, Ficus benhalensis, Guettarda speciosa	Various times, except rainy season	All areas	
Batocera rufomaculata	Artocarpus altilis, Mangitera indica	No specific time ,always present, 1 st introduced in 1990	All areas	

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)
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 /	Comments related to data, definitions,	Comments on the reported trend
category	etc.	
Disturbance by		
insects		
Disturbance by		
diseases		
discuses		
Disturbance by		
other biotic agents		
Distructions	The recent Tsunami caused considerable	
Disturbance caused	additional destruction of trees and forest	
by abiotic factors	vegetation.	
	vegetation.	
Major outbreaks		
Invasive species		

Other general comments to the table

Coral and sand mining for urbanization and house construction are causes observed for coastal area/beach erosion. This is disturbing the littoral vegetation. The local people are aware of the consequences but the economic situation and high cost of importing sand and lack of suitable low cost material forces them to go for sand mining.

11 Table T11 - Wood removals and value of removals

11.1 FRA 2010 Categories and definitions

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

11.2 National data

11.2.1 Data sources

References to sources of	Quality	Variable(s)	Year(s)	Additional
information	(H/M/L)			comments
Timber permit issued from Ministry of Fisheries and Agriculture	Н	-	2000-2005	Data refers to only permit issued, not the actual amount cut

11.2.2 Classification and definitions

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

11.2.3 Original data

Timber Felling Permit from 2000 to 2005

Cate gory	Scientific Name	Common Name	Unit	2000	2001	2002	2003	2004	2005
1	Cocos nucifera	Coconut palm	Trunk	269	406	562	274	386	362
2	Hibiscus tilaceae Terminalia catappa Cordia subcordata	Nit pitcha Country almond kou sea trumpet	Metre	309	693	247	509	85	422
3	Calophyllum inophyllum Cordia subcordata	Laurel wood tree kou sea trumpet	Bundle	26	3	0	0	65	15

1	Bruguirea								
4	cylindrica	Mangrove	Metre	0	24	14	0	8	0
			Aerial						
	<u>Ficus</u>	Banyan	root in						
5	<u>benghalensis</u>	tree	metre	34	17	30	44	0	10
6	Pemphis acidula	Iron wood	Trunk	27599	23749	16480	19560	44062	62646
			1.5						
7	Hernandia ovigera	Sea hearse	Metre	90	94	30	43	3324	15
	<u>Bruguirea</u>								
8	<u>cylindrica</u>	Mangrove	Stick	30	74	36	42	6	6
		Laurel							
	<u>Calophyllum</u>	wood tree							
	<u>inophyllum</u>	kou sea							
9	Cordia subcordata	trumpet	Bundle	2375	3643	2005	3851	1745	3246
		Laurel							
	<u>Calophyllum</u>	wood tree							
	<u>inophyllum</u>	kou sea							
10	Cordia subcordata	trumpet	3 Metre	7	16	11	19	763	11
	<u>Oschrosia</u>								
11	<u>borbonica</u>	Corkwood	Stick	3013	3424	530	0	0	0

Revenue obtained by issuing Timber Felling Permit from 2000 to 2005 (Unit Mrf)

Cate		Common							
gory	Scientific Name	Name	Unit Rate	2000	2001	2002	2003	2004	2005
		Coconut	30 Mr per						
1	Cocos nucifera	palm	trunk	8,070	12180	16860	8,220	11580	10860
		Nit pitcha							
		Country							
	Hibiscus tilaceae	almond							
	Terminalia catappa	kou sea							
2	Cordia subcordata	trumpet		2781	6237	2223	4581	765	3798
		Laurel							
	Calophyllum	wood tree							
	inophyllum	kou sea							
3	Cordia subcordata	trumpet		468	54	0	0	1,170	270
4	Bruguirea cylindrica	Mangrove		0	432	252	0	144	0
		Banyan							
5	Ficus benghalensis	tree		612	306	540	792	0	180
6	Pemphis acidula	Iron wood		27599	23749	16480	19560	44062	62646
		Sea							
7	Hernandia ovigera	hearse		90	94	30	43	3,324	15
8	Bruguirea cylindrica	Mangrove		210	518	252	294	42	42
		Laurel							
	Calophyllum	wood tree							
	inophyllum	kou sea							
9	Cordia subcordata	trumpet		21375	32787	18045	34659	15705	29214
		Laurel							
	Calophyllum	wood tree							
	inophyllum	kou sea							
10	Cordia subcordata	trumpet		126	288	198	342	13,734	198
	Oschrosia								
11	borbonica	Corkwood		0	0	0	0	0	0
	Total			61331	76645	54880	68491	90526	107223

FELLING TIMBER AND FIREWOOD FROM UNINHABITED ISLAND

LAW AND REGULATIONS GOVERNING THE UNINHABITED ISLANDS AND STATE'S TIMBER

Law No. 4/70 (12-04-70) Affixing revenue stamps on legal documents

Clause 2- Affixing revenue stamps on the "Application Form" for felling state's timber

- For a meter of the following types of timber from any part of the tree . RF 18

 Bruiguirea cylindrical, Calophyllum inopyhllum,Cordia subcordata,Ficus

 benghalensis,Syzygium cumini,Brugyuira gymorhiza,Adenanthera povonina,Thespesia
 populnea,Mimosops elengi,Tamarindus indicus,Sonerita acida and Azadorachta indica
- RF 9, for a meter of timber from the following species of trees to build wood plank layers of dhoni/boat. Maximum 7 meters per permit.
 Guttarda speciosa, Terminalia catappa, Hibiscus teliaceus
- Rf 30 for a meter of timber from the following species of trees to build bow platform of shoni/boat. Mximum 6 meters per permit.
 - Guttarda speciosa, Terminalia catappa, Hibiscus teliaceus
- Rf 18 for a meter of timber from the following species of trees to build the rudder of dhoni/boat. Maximum 3 meters per permit.
 - Calophyllum inophyllum, Cordia subcordata, Terminalia catappa, Azadirachta indica
- Rf 18 for a meter of timber from the following species of trees to build the stern stem of dhoni/boat. Maximum 3 meters per permit.
 - Calophyllum inophyllum, Cordia subcordata, Terminalia catappa, Azadirachta indica
- Rf 18 for a meter of timber from the following species of trees to build the mast of the dhoni/boat
 - Calophyllum inophyllum, Cordia subcordata
- Rf 7 meter of the following species of trees
 Calophyllum inophyllum, Cordia subcordata
- Rf 1 per stick from the following species of trees
 Phemsis acidula
- Rf 30 per coconut palm Cocos nucifera
- Rf 25 oer bundle (approx.50 pieces of stick) of firewood to prepare lime
- Rf per stick of Lumnitzera racemosa

Felling timber from leased uninhabited islands

- Timber can be felled from leased uninhabited islands according to the following regulations under this law;
 - 1. According to permit letter issued by the Ministry of Fisheries and Agriculture
 - 2. In the presence of an official from the Atoll Office
 - 3. In the presence of the lessee or the person(s) in charge of maintaining the island or a representative of these parties

11.3 Data for Table T11

FRA 2010 Category	Indus	strial round removals	wood	Woodfuel removals			
	1990	2000	2005	1990	2000	2005	
Total volume (1000 m ³ o.b.)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
of which from forest	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Unit value (local currency / m ³ o.b.)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Total value (1000 local currency)	n.a.	64	89	n.a.	n.a.	n.a.	

Note: The figures for the reporting years 1990 are not available. The figures for reporting year of 2000 and 2005 refer to the averages of annually affected areas for the periods 2000-2002 and 2003-2005 respectively.

	1990	2000	2005
Name of local surrency	Maldivian Rufiyaa	Maldivian Rufiyaa	Maldivian Rufiyaa
Name of local currency	(MRF)	(MRF)	(MRF)

11.4 Comments to Table T11

Variable /	Comments related to data, definitions,	Comments on the reported trend
category	etc.	
Total volume of	Timber permit is only given for Build	
industrial	sea transportation vessels, renovate sea	Trend in preparation of lime has declined
roundwood	transportation vessels, preparation of	
removals	lime and building houses	
Total volume of		
woodfuel		
removals		
Unit value	The unit value of Timber Permit is	
	stipulated in Revenue Stamp Rule.	
T (1 1		
Total value	This value is the total revenue generated	
	from issuing timber permit under	
	revenue stamp rule.	

Other general comments to the table	

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

No data available

13 Table T13 - Employment

No data are available for this reporting table.

The Ministry of fisheries, Agriculture and Marine Resources is the regulatory body with responsibility for forestry in the Maldives. The Ministry is formulating a policy programme to promote conservation and sustainable management of the Maldives forest and tree resources. A national body has been formed to advice the government on forest rehabilitation and management and is particularly keen on promoting planting of species of timber, fuel wood and improved varieties of fruit trees.

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	A document that describes the objectives, priorities and means for implementation
statement	of the forest policy.
National forest	A generic expression that refers to a wide range of approaches towards forest policy
programme (nfp)	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)	A set of rules enacted by the legislative authority of a country regulating the access,
on forest	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		
	Year of endorsement	•	No		
If Yes above, provide:	Reference to document				
National forest programs	me (nfn)	✓	Yes		
National forest programme (mp)		·	No		
	Name of nfp in country	Ma	aldives does not have an nfp yet		
	Starting year				
	Current status		In formulation		
If Yes above, provide:			In implementation		
ii res above, provide.	Current status		Under revision		
			Process temporarily suspended		
	Reference to document or web site				
			Yes, specific forest law exists		
Law (Act or Code) on forest with national scope		✓	Yes, but rules on forests are incorporated in other (broader) legislation		
			No, forest issues are not regulated by national legislation		
	Year of enactment	199	98		
If Yes above, provide:	Year of latest amendment				
	Reference to document	La	Law on Uninhabited Islands of Maldive		

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	Under Maldives component of forestry programme for early rehabilitation in Asia Tsunami Affected Countries (OSRO/GLO/502/FIN) a forest policy of Maldives a tentative draft for discussions have been conducted in 2006.
National forest programme (nfp)	Greening program Coconut rehabilitation programme Fruit tree programme
Law (Act or Code) on forest with national scope	Law on Uninhabited Islands of Maldives (Law No.20/98) states that MoFAMR is the responsible government agency that will assign uninhabited islands on <i>varuuva</i> lease, which is the traditional non-commercial form of lease. The law stipulates rights and responsibilities of the lessee. Wood can only be harvested from the island with a written permission from MoFAMR. Harvesting can be only conducted in the presence of an atoll officer and representative of the lessee. Chapter 11-14 defines the conditions of commercial lease.
Sub-national forest policy statements	
Sub-national Laws (Acts or Codes) on forest	

Other general comments to the table		

15 Table T15 – Institutional framework

15.1 FRA 2010 Categories and definitions

Term	Definition
Minister responsible for	Minister holding the main responsibility for forest issues and the formulation of
forest policy-making	the forest policy.
Head of Forestry	The Head of Forestry is the Government Officer responsible for implementing
-	the mandate of the public administration related to forests.
Level of subordination	Number of administrative levels between the Head of Forestry and the Minister.
University degree	Qualification provided by University after a minimum of 3 years of post
	secondary education.

15.2 Data for Table T15

Table 15a – Institutions

FRA 2010 Category	2008
Minister responsible for forest policy formulation :	Ministry of Fisheries, Agriculture and Marine
please provide full title	Resources (MoFAMR)
Level of subordination of Head of Forestry within the Ministry	1 st level subordination to Minister
	2 nd level subordination to Minister
	3 rd level subordination to Minister
	4 th or lower level subordination to Minister
Other public forest agencies at national level	
Institution(s) responsible for forest law enforcement	MoFAMR, MEEW, Mini. Of Atolls, Atoll office, Island office
	isiand office

Table 15b – Human resources

	Human resources within public forest institutions					
FRA 2010 Category	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Total staff	n.a.	n.a.	n.a.	n.a.	2	50%
of which with university degree or equivalent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes:

- 1. Includes human resources within public forest institutions at sub-national level
- 2. <u>Excludes</u> people employed in State-owned enterprises, education and research, as well as temporary / seasonal workers.

15.3 Comments to Table T15

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Minister responsible for	Minister of Fisheries, Agriculture and Marine	
forest policy formulation	resource and the head of the Agriculture section.	
Level of subordination of	There are currently 60 employees working under the	
Head of Forestry within the	Minister of Fisheries, Agriculture and Marine	
Ministry	resource	
Other public forest		
agencies at national level		
Institution(s) responsible		
for forest law enforcement		
Human resources within		
public forest institutions		

Other general comments to the table		

16 Table T16 – Education and research

There are not sufficient data to complete this reporting table.

4 employees from Maldives graduated from the Cyprus Forestry College. 1 employee is currently doing higher studies abroad

17 Table T17 – Public revenue collection and expenditure

No data are available for this reporting table.