

GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

# **Marshall Islands**

Rome, 2014

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Global Forest Resources Assessment (FRA). This country report is prepared as a contribution to the FAO publication, the Global Forest Resources Assessment 2015 (FRA 2015).

The content and the structure are in accordance with the recommendations and guidelines given by FAO in the document Guide for country reporting for FRA 2015 (<http://www.fao.org/3/a-au190e.pdf>). These reports were submitted to FAO as official government documents.

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## TABLE OF CONTENTS

Report preparation and contact persons.....	4
1. What is the area of forest and other wooded land and how has it changed over time? .....	5
2. What is the area of natural and planted forest and how has it changed over time? .....	12
3. What are the stocks and growth rates of the forests and how have they changed? .....	18
4. What is the status of forest production and how has it changed over time? .....	32
5. How much forest area is managed for protection of soil and water and ecosystem services? .....	38
6. How much forest area is protected and designated for the conservation of biodiversity and how has it changed over time? .....	43
7. What is the area of forest affected by woody invasive species? .....	46
8. How much forest area is damaged each year? .....	49
9. What is the forest area with reduced canopy cover? .....	53
10. What forest policy and regulatory framework exists to support implementation of sustainable forest management SFM? .....	54
11. Is there a national platform that promotes stakeholder participation in forest policy development? .....	56
12. What is the forest area intended to be in permanent forest land use and how has it changed over time? .....	57
13. How does your country measure and report progress towards SFM at the national level? .....	60
14. What is the area of forest under a forest management plan and how is this monitored? .....	62
15. How are stakeholders involved in the management decision making for publicly owned forests? .....	64
16. What is the area of forest under an independently verified forest certification scheme? .....	65
17. How much money do governments collect from and spend on forests? .....	67
18. Who owns and manages the forests and how has this changed? .....	69
19. How many people are directly employed in forestry? .....	73
20. What is the contribution of forestry to Gross Domestic Product (GDP)? .....	75
21. What is forest area likely to be in the future .....	76

## Report preparation and contact persons

### Contact persons

The present report was prepared by the following person(s)

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N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

### Introductory Text

Place an introductory text on the content of this report

No report has been received from the country. This report is the result of a desk study prepared by the FRA secretariat in Rome, which is based on the existing available information using the established format for FRA 2015/CFRQ format.

The Republic of the Marshall Islands is a collection of 29 atolls with over 1000 individual islands spread out over a vast distance in the north-central Pacific Ocean. Climatic data for Majuro indicates little month-to-month fluctuation in temperature and a mean monthly maximum of 30 C and minimum of 25 C. Normal annual precipitation is about 3300 mm. January, February, and March are the driest months of the year.

Much of the native vegetation on the atolls has been replaced with crops of coconut for copra production. While coconut palms provide some cover and erosion protection, they differ markedly from native vegetation.

### Desk Study?

Check "yes" if this survey is a Desk Study, "no" otherwise	
Desk Study?	yes

## 1. What is the area of forest and other wooded land and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 1.1 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 ; 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".
...of which with tree cover ( <i>sub-category</i> )	Land considered as "Other land", that is predominantly agricultural or urban lands use and has patches of tree cover that span 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. It includes bothe forest and non-forest tree species.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.
Forest expansion	Expansion of forest on land that, until then, was not defined as forest.
...of which afforestation ( <i>sub-category</i> )	Establishment of forest through planting and/or deliberate seeding on land that, until then, was not defined as forest.
...of which natural expansion of forest ( <i>sub-category</i> )	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).
Deforestation	The conversion of forest to other land use or the longterm reduction of the tree canopy cover below the minimum 10 percent threshold.
...of which human induced ( <i>sub-category</i> )	Human induced conversion of forest to other land use or the permanent reduction of the tree canopy cover below the minimum 10 percent threshold.
Reforestation	Natural regeneration or re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.
...of which artificial reforestation ( <i>sub-category</i> )	Re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.

### 1.2 National data

#### 1.2.1 Data sources

References to sources of information	Variables	Years	Additional comments
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1	Liu, Z., Fischer, L. In press. The Republic of the Marshall Islands Vegetation Mapping Using Very High Resolution Imagery: Methodology. U.S. Department of Agriculture, Forest Service, Pacific Southwest Region, Forest Health Protection. URL: <a href="http://www.fs.fed.us/r5/spf/fhp/fhm/landcover/islands/index.shtml">http://www.fs.fed.us/r5/spf/fhp/fhm/landcover/islands/index.shtml</a>	Land cover	2008	Data and methods available on the web site. Satellite data spans 2003-6.
2	Republic of the Marshall Islands Forest Resource Fact Sheet 2001. <a href="http://www.fs.fed.us/r5/spf/projects/factsheets/marshall.htm">http://www.fs.fed.us/r5/spf/projects/factsheets/marshall.htm</a>	Forest area	2001	N/A
3	FAOSTAT	Land area and country area	N/A	N/A
4	Donnegan, Joseph A.; Trimble, Steven T.; Kusto, Karness; Kuegler, Olaf; Hiserote, Bruce A. 2011. Republic of the Marshall Islands' forest resources, 2008. Resour. Bull. PNW-RB-263. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 29 p.	Land cover, volume	2008	More recent publication that was in draft form previously.

### 1.2.2 Classification and definitions

National class	Definition
Barren	Nonforest land that has little or no vegetation cover.
Forest	Tropical forest, agroforest, or secondary vegetation with at least 10 percent canopy cover of tree species.
Grassland	Nonforest land with less than 10 percent tree cover that supports grass, shrub, fern, or other vegetation.
Urban	Nonforest land that is urban land use.
Water	Streams, lakes, or other water bodies.

### 1.2.3 Original data

<b>Forest area</b>
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SELECTED FACTS, U.S. Dept. of Agriculture, Forest Service, Fact Sheet, 2001.	Numbers
Hectares of Forest Land	17992
Hectares of Non-Industrial Private Forest Land	17992

**2008 landcover (preliminary) for 10 largest atoll groups in the Marshall Islands (Liu and Fischer, in press).**

Atoll Group	Forest	Grassland	Barren	Urban	Water	Grand Total
			<i>hectares</i>			
Ailinglaplap	1241	13	155	63	0	1472
Arno	1311	22	187	39	0	1558
Jaluit	1092	19	176	57	0	1344
Kwajalein	1023	107	258	599	0	1987
Likiep	866	54	168	41	0	1129
Majuro	481	22	138	640	0	1282
Maloelap	734	103	174	34	0	1045
Mili	1171	33	302	50	0	1557
Rongelap	634	53	208	40	0	935
Wotje	848	31	156	47	0	1082
<b>Total</b>	9401	459	1921	1611	0	13391

FAOSTAT Area of land: 18000 hectares

### 1.3 Analysis and processing of national data

## 1.3.1 Adjustment

**Forest area**

Calibration factor 2008 =  $(18000/13391) = 1.34418639384661$

**2008 landcover (preliminary) for 10 largest atoll groups in the Marshall Islands (Liu and Fischer, in press) adjusted for total land area reported by FAO.**

<b>Atoll Group</b>	<b>Forest</b>	<b>Grassland</b>	<b>Barren</b>	<b>Urban</b>	<b>Water</b>	<b>Grand Total</b>
			<i>hectres</i>			
Ailinglaplap	1668	17	208	85	0	1978
Arno	1762	30	251	52	0	2095
Jaluit	1468	26	236	77	0	1806
Kwajalein	1376	144	347	805	0	2671
Likiep	1164	73	225	55	0	1517
Majuro	647	30	186	860	0	1723
Maloelap	986	139	234	46	0	1405
Mili	1574	45	406	68	0	2093
Rongelap	852	71	280	54	0	1257
Wotje	1140	42	209	63	0	1455
<b>Total</b>	12636	617	2582	2165	0	18000

## 1.3.2 Estimation and forecasting

**Forest area**

Due to lack of data, the 2008 figures have been used for all reporting years.

## 1.3.3 Reclassification

National class	FAO reclassification
Forest	Forest
Grassland	Other land
Barren	Other land
Urban	Other land
Water	Inland water bodies

## 1.4 Data

Table 1a

Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
	Forest	12.636	12.636	12.636	12.636	12.636
	Other wooded land	0	0	0	0	0
	Other land	5.364	5.364	5.364	5.364	5.364
	... of which with tree cover	N/A	N/A	N/A	N/A	N/A
	Inland water bodies	0	0	0	0	0
	TOTAL	18.00	18.00	18.00	18.00	18.00

Table 1b

Categories		Annual forest establishment / loss (000 hectares per year)				...of which of introduced species (000 hectares per year)			
		1990	2000	2005	2010	1990	2000	2005	2010
	Forest expansion	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which afforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which natural expansion of forest	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

	Deforestation	N/A							
	... of which human induced	N/A							
	Reforestation	N/A							
	... of which artificial	N/A							

## Tiers

Category	Tier for status	Tier for reported trend
Forest	Tier 1	Tier 1
Other wooded land	Tier 1	Tier 1
Forest expansion	N/A	N/A
Deforestation	N/A	N/A
Reforestation	N/A	N/A

## Tier criteria

Category	Tier for status	Tier for reported trend
<ul style="list-style-type: none"> <li>• Forest</li> <li>• Other wooded land</li> <li>• Afforestation</li> <li>• Reforestation</li> <li>• Natural expansion of forest</li> <li>• Deforestation</li> </ul>	<p><b>Tier 3</b> : Data sources: Either recent (less than 10 years ago) National Forest Inventory or remote sensing, with ground truthing, or programme for repeated compatible NFIs</p> <p><b>Tier 2</b> : Data sources: Full cover mapping / remote sensing or old NFI (more than 10 years ago)</p> <p><b>Tier 1</b> : Other</p>	<p><b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status)</p> <p><b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status)</p> <p><b>Tier 1</b> : Other</p>

## 1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends
Forest	N/A	N/A
Other wooded land	No data are available on the occurrence of Other wooded land. If areas of Other wooded land exist, they are included within the figure for Other land.	N/A
Other land	N/A	N/A
Other land with tree cover	N/A	N/A
Inland water bodies	Original classification work tentatively identified some inland water bodies, however, these were discounted as classification errors.	N/A
Forest expansion	N/A	N/A

Deforestation	N/A	N/A
Reforestation	N/A	N/A

**Other general comments to the table**

No other inventory data exists to establish a trend; the 2008 estimate has been used for all reporting years. Fact sheet data from 2001 erroneously assumed all land was forested.

## 2. What is the area of natural and planted forest and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 2.1 Categories and definitions

Term	Definition
Naturally regenerated forest	Forest predominantly composed of trees established through natural regeneration.
Naturalized introduced species	Other naturally regenerated forest where the tree species are predominantly non-native and do not need human help to reproduce/maintain populations over time.
Introduced species	A species, subspecies or lower taxon occurring <b>outside</b> 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).
Category	Definition
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.
...of which of introduced species ( <i>sub-category</i> )	Other naturally regenerated forest where the trees are predominantly of introduced species.
...of which naturalized ( <i>sub-sub category</i> )	Other naturally regenerated forest where the trees are predominantly of naturalized introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
...of which of introduced species ( <i>sub-category</i> )	Planted forest where the planted/seeded trees are predominantly of introduced species.
Mangroves	Area of forest and other wooded land with mangrove vegetation.
...of which planted ( <i>sub-category</i> )	Mangroves predominantly composed of trees established through planting.

### 2.2 National data

#### 2.2.1 Data sources

References to sources of information	Variables	Years	Additional comments
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1	Donnegan, J. A., K. Waddell, O. Kuegler, and B. A. Hiserote. 2008. Forest Inventory and Analysis: The Pacific Islands Database for American Samoa, Guam, Palau, the Northern Mariana's, Micronesia, and the Marshall Islands. Database version 2008-1. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR.	Forest type area	2008	Data were collected on 0.067 ha plots spaced at approximately 3 km intervals across the forested landscape.
2	Liu, Z., Fischer, L. In press. The Republic of the Marshall Islands Vegetation Mapping Using Very High Resolution Imagery: Methodology. U.S. Department of Agriculture, Forest Service, Pacific Southwest Region, Forest Health Protection. URL: <a href="http://www.fs.fed.us/r5/spf/fhp/fhm/landcover/islands/index.shtml">http://www.fs.fed.us/r5/spf/fhp/fhm/landcover/islands/index.shtml</a>	Land cover	2008	Data and methods available on the web site. Satellite data spans 2003-6.
3	Donnegan, Joseph A.; Trimble, Steven T.; Kusto, Karness; Kuegler, Olaf; Hiserote, Bruce A. 2011. Republic of the Marshall Islands' forest resources, 2008. Resour. Bull. PNW-RB-263. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 29 p.	Land cover, volume	2008	More recent publication that was in preparation previously.
4	N/A	N/A	N/A	N/A

### 2.2.2 Classification and definitions

National class	Definition
Agroforest	Land where trees, shrubs, and herbs are cultivated for food or medicines among a cover of other forest trees.
Lowland tropical rainforest	Lowland forest of tropical, primarily native and naturalized, tree species.
Mangrove forest	Lowland, tidally inundated forest composed of mangrove tree species.
Strand	Coastal forest vegetation occurring in narrow strips on sandy, rocky coasts. May include interior forest species as this vegetation grades into interior forest.

## 2.2.3 Original data

RMIforest cover estimated from inventory field plots, 2008		Total	SE
		<i>hectares</i>	
Foresttype			
	Agroforest	3128	627
	Lowland tropical rainforest	3453	768
	Mangrove	115	115
	Strand	2188	607
All Types		8884	604

## 2.3 Analysis and processing of national data

## 2.3.1 Adjustment

Calibrate to FAO expanded forested area (12636/8884) = 1.42233228275552

RMIforest cover estimated from inventory field plots, 2008		Total
		<i>hectares</i>
Foresttype		
	Agroforest	4449
	Lowland tropical rainforest	4911
	Mangrove	163
	Strand	3112

<b>All Types</b>	12636
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### 2.3.2 Estimation and forecasting

Due to lack of data, the 2008 figures have been used for all reporting years.

### 2.3.3 Reclassification

<b>National class</b>	<b>FAO FRA 2010 Category</b>
Agroforest	Planted forest
Lowland tropical rainforest	Primary forest
Mangrove forest	Primary forest
Strand	Primary forest

## 2.4 Data

Table 2a

<b>Categories</b>		<b>Forest area (000 hectares)</b>				
		<b>1990</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>
	Primary forest	8.186	8.186	8.186	8.186	8.186
	Other naturally regenerated forest	0	0	0	0	0
	... of which of introduced species	N/A	N/A	N/A	N/A	N/A
	... of which naturalized	N/A	N/A	N/A	N/A	N/A
	Planted forest	4.45	4.45	4.45	4.45	4.45
	... of which of introduced species	N/A	N/A	N/A	N/A	N/A
<b>TOTAL</b>		12.64	12.64	12.64	12.64	12.64

Table 2b

Primary forest converted to (000 ha)								
1990-2000			2000-2010			2010-2015		
Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2c

Categories	Area (000 hectares)				
	1990	2000	2005	2010	2015
Mangroves (forest and OWL)	0.163	0.163	0.163	0.163	0.163
... of which planted	N/A	N/A	N/A	N/A	N/A

## Tiers

Category	Tier for status	Tier for reported trend
Primary forest	Tier 3	Tier 3
Other naturally regenerated forest	Tier 3	Tier 3
Planted forest	Tier 3	Tier 3
Mangroves	Tier 3	Tier 3

## Tier Criteria

Category	Tier for status	Tier for reported trend
Primary forest/Other naturally regenerated forest/Planted forest	<p><b>Tier 3</b> : Data sources: Recent (less than 10 years) National Forest Inventory or remote sensing with ground truthing or data provided by official agencies or programme for repeated compatible NFIs</p> <p><b>Tier 2</b> : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years) <b>Tier 1</b> : Other</p>	<p><b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other</p>

## 2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	The reported area of primary forest contain an unknown area of Other naturally regenerated forest.	N/A
Other naturally regenerating forest	N/A	N/A

Planted forest	N/A	N/A
Mangroves	N/A	N/A

**Other general comments to the table**

The above estimates redistribute the total forest area that was estimated from remotely sensed data (Table 1, Section 1) into categories of forest type based on the field plot area sampled on a systematic grid of plots. No other inventory data exists to establish a trend; the 2008 estimate has been used for all reporting years.

### 3. What are the stocks and growth rates of the forests and how have they changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

#### 3.1 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm, excluding branches.
Net Annual Increment (NAI)	Average annual volume of gross increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for "Growing stock".
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 2 mm 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.
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 soil depth of 30 cm.

#### 3.2 National data

##### 3.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
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1	Donnegan, J. A., K. Waddell, O. Kuegler, and B. A. Hiserote. 2008. Forest Inventory and Analysis: The Pacific Islands Database for American Samoa, Guam, Palau, the Northern Mariana's, Micronesia, and the Marshall Islands. Database version 2008-1. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR.	Forest land volume Biomass Carbon	2008	Data are collected on 0.067 ha plots spaced at approximately 3 km intervals across the forested landscape.
2	Penman, J., M. Gytarsky, T. Hiraishi, T. Krug, D. Kruger, R. Pipatti, L. Buendia, K. Miwa, T. Ngara, K. Tanabe, and F. Wagner, editors. 2003. Good Practice Guidance for Land Use, Land-Use Change and Forestry. Intergovernmental Panel on Climate Change, National Greenhouse Gas Inventories Programme, Institute for Global Environmental Strategies (IGES), Hayama, Kanagawa, Japan,.	Carbon mass conversion factors, biomass expansion factors and ratio of aboveground to belowground biomass.	N/A	N/A
3	Donnegan, Joseph A.; Trimble, Steven T.; Kusto, Karness; Kuegler, Olaf; Hiserote, Bruce A. 2011. Republic of the Marshall Islands' forest resources, 2008. Resour. Bull. PNW-RB-263. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 29 p.	Forest cover, volume, biomass, carbon	2008	Publication that was previously in draft.
4	N/A	N/A	N/A	N/A

### 3.2.2 Classification and definitions

National class	Definition
Net growing stock volume	Volume over bark of all living trees more than 12.5 cm in diameter at breast height (or above buttress and stilted roots if these are higher) minus rotten cull. Includes the stem from ground level to a top diameter of 1 cm. Does not include branches off of the main stem.
Timberland volume	Volume of wood on land that is capable of producing at least 1.4 cubic meters per hectare per year of industrial wood.

Live above-ground stem biomass	Biomass of live standing tree stems #2.5 cm at breast height from ground to 1 cm top. Does not include branch, leaf, or root biomass.
Dead above-ground stem biomass	Biomass of dead standing tree stems #2.5 cm at breast height from ground to 1 cm top. Does not include branch, leaf, or root biomass.
Total above-ground stem biomass	Biomass of live and dead standing tree stems #2.5 cm at breast height from ground to 1 cm top. Does not include branch, leaf, or root biomass.
Carbon in above-ground tree stem biomass	Carbon in living tree stems # 2.5 cm in diameter at breast height from ground to 1 cm top. Does not include branches, bark, seeds, and foliage.
Carbon in dead tree stem biomass	Carbon in standing dead tree stems # 2.5 cm in diameter at breast height from ground to 1 cm top. Does not include branches, bark, seeds, and foliage.

## 3.2.3 Original data

<b>Growing stock</b>		
<b>RMI 2008: Net volume (thousand m<sup>3</sup>) of live trees # 12.5 cm d.b.h. on all forest land.</b>		
	<b>Total</b>	
	<b>Total</b>	<b>SE</b>
	<i>cubic meters</i>	
<i>Cocos nucifera</i>	1038742	161062
<i>Pandanus tectorius</i>	94998	22699
<i>Guettarda speciosa</i>	86636	23978
<i>Pisonia grandis</i>	78995	32714
<i>Bruguiera gymnorrhiza</i>	66079	54864
<i>Neisosperma oppositifolia</i>	37305	18665
<i>Cordia subcordata</i>	28429	25557
<i>Tournefortia argentea</i>	38278	24869
<i>Artocarpus mariannensis</i>	19008	19008
<i>Artocarpus altilis</i>	10026	7546
Remaining	28549	10828

<b>Total</b>		1527046	187580

**Biomass stock**

<b>2008 stem biomass, RMI</b>								
	Live			Dead			Total	
	Total	SE <sup>1</sup>		Total	SE		Total	SE
	<i>metric tonnes</i>							
<i>Cocos nucifera</i>	520141	80697		17066	6065		537207	82769
<i>Pandanus tectorius</i>	48183	11552		647	445		48829	11613
<i>Guettarda speciosa</i>	48817	12317		1422	977		50238	12736
<i>Pisonia grandis</i>	40841	16846		0	0		40841	16846
<i>Bruguiera gymnorrhiza</i>	35968	30108		3095	3095		39063	33141
<i>Neisosperma oppositifolia</i>	20013	10137		698	578		20711	10448
<i>Cordia subcordata</i>	15041	13585		1381	1381		16422	14962
<i>Tournefortia argentea</i>	19807	12550		220	220		20028	12551
<i>Artocarpus mariannensis</i>	9505	9505		0	0		9505	9505
<i>Artocarpus altilis</i>	10306	7274		0	0		10306	7274
Remaining	25580	6397		882	683		26462	6926
<b>Total</b>	<b>794200</b>	<b>96491</b>		<b>25410</b>	<b>6857</b>		<b>819611</b>	<b>99575</b>

<sup>1</sup> SE = Standard error.

## Carbon stock

RMIcarbon 2008								
	Live			Dead			Total	
	Total	SE		Total	SE		Total	SE
	<i>metric tonnes</i>							
<i>Cocos nucifera</i>	260070	40349		8533	3032		268603	41385
<i>Pandanus tectorius</i>	24091	5776		323	222		24415	5806
<i>Guettarda speciosa</i>	24409	6159		710	488		25119	6368
<i>Pisonia grandis</i>	20421	8423					20421	8423
<i>Bruguiera gymnorrhiza</i>	17984	15054		1548	1548		19532	16571
<i>Neisosperma oppositifolia</i>	10007	5068		348	289		10356	5224
<i>Cordia subcordata</i>	7521	6793		690	690		8211	7481
<i>Tournefortia argentea</i>	9904	6275		110	110		10014	6276
<i>Artocarpus mariannensis</i>	4752	4752					4752	4752
<i>Artocarpus altilis</i>	5153	3637					5153	3637
Remaining	12789	3199		441	342		13230	3464
<b>Total</b>	<b>397100</b>	<b>48246</b>		<b>12705</b>	<b>3428</b>		<b>409805</b>	<b>49788</b>

<sup>1</sup> SE = Standard error.								
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### 3.3 Analysis and processing of national data

#### 3.3.1 Adjustment

<b>Growing stock</b>	
Calibration factor 2008 = (18000/13391) = 1.34418639384661	
<b>RMI 2008: Net volume (thousand m<sup>3</sup>) of live trees # 12.5 cm d.b.h. on all forest land calibrated by FAO area estimate</b>	
<b>Species</b>	<b>Total</b>
	<i>cubic meters</i>
<i>Cocos nucifera</i>	1396263
<i>Pandanus tectorius</i>	127695
<i>Guettarda speciosa</i>	116455
<i>Pisonia grandis</i>	106184
<i>Bruguiera gymnorrhiza</i>	88822
<i>Neisosperma oppositifolia</i>	50145
<i>Cordia subcordata</i>	38214
<i>Tournefortia argentea</i>	51453
<i>Artocarpus mariannensis</i>	25550
<i>Artocarpus altilis</i>	13477
Remaining	38375
<b>Total</b>	<b>2052634</b>

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## Biomass stock

Calibration factor 2008 =  $(18000/13391) = 1.34418639384661$

Biomass was calculated using total stem volume and wood density, a biomass expansion factor to estimate branches, leaves, and seeds (3.4; tropical broadleaf), and an aboveground to belowground ratio estimator (0.27; tropical/sub-tropical dry forest).

2008 stem biomass, RMI calibrated by FAO area					
	Live		Dead		All
Species	Total		Total		Total
	<i>metric tonnes</i>				
<i>Cocos nucifera</i>	699166		22940		722106
<i>Pandanus tectorius</i>	64767		869		65636
<i>Guettarda speciosa</i>	65618		1911		67529
<i>Pisonia grandis</i>	54897		0		54897
<i>Bruguiera gymnorrhiza</i>	48348		4161		52508
<i>Neisosperma oppositifolia</i>	26902		938		27839
<i>Cordia subcordata</i>	20218		1856		22074
<i>Tournefortia argentea</i>	26625		296		26921
<i>Artocarpus mariannensis</i>	12776		0		12776
<i>Artocarpus altilis</i>	13853		0		13853
Remaining	34384		1185		35569

<b>Total</b>	1067553		34156		1101709
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**Carbon stock**

Calibration factor 2008 =  $(18000/13391) = 1.34418639384661$

Carbon mass was estimated as ½ biomass.

<b>RMI carbon 2008 calibrated by FAO area</b>					
	<b>Live</b>		<b>Dead</b>		<b>All</b>
	<b>Total</b>		<b>Total</b>		<b>Total</b>
	metric tonnes				
<i>Cocos nucifera</i>	349582		11470		361052
<i>Pandanus tectorius</i>	32383		434		32818
<i>Guettarda speciosa</i>	32810		955		33765
<i>Pisonia grandis</i>	27449				27449
<i>Bruguiera gymnorrhiza</i>	24174		2080		26254
<i>Neisosperma oppositifolia</i>	13451		468		13920
<i>Cordia subcordata</i>	10109		928		11037
<i>Tournefortia argentea</i>	13312		148		13460
<i>Artocarpus mariannensis</i>	6387				6387
<i>Artocarpus altilis</i>	6926				6926
Remaining	17191		593		17784
<b>Total</b>	<b>533777</b>		<b>17078</b>		<b>550855</b>

## 3.3.2 Estimation and forecasting

Due to lack of data, the 2008 figures have been used for all reporting years.

## 3.3.3 Reclassification

**Biomass stock**

Live above-ground stem biomass = Above-ground biomass

Dead above-ground stem biomass = Dead wood

Total above-ground stem biomass = TOTAL

**Carbon stock**

Carbon in above-ground tree stem biomass = Carbon in above-ground biomass

Carbon in dead tree stem biomass = Carbon in dead wood

## 3.4 Data

Table 3a

Category		Growing stock volume (million m <sup>3</sup> over bark)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Total growing stock	2.05	2.05	2.05	2.05	2.05	0	0	0	0	0
	... of which coniferous	0	0	0	0	0	0	0	0	0	0
	... of which broadleaved	2.05	2.05	2.05	2.05	2.05	0	0	0	0	0

Table 3b

Category/Species name	Growing stock in forest (million cubic meters)
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Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	Cocos nucifera	nu	N/A	N/A	1.396	1.396
2 nd	Pandanus tectorius	bôb	N/A	N/A	0.128	0.128
3 rd	Guettarda speciosa	mosor	N/A	N/A	0.116	0.116
4 th	Pisonia grandis	mok	N/A	N/A	0.106	0.106
5 th	Bruguiera gymnorrhiza	ong	N/A	N/A	0.089	0.089
6 th	Neisosperma oppositifolia	umwa	N/A	N/A	0.05	0.05
7 th	Cordia subcordata	anno, alau	N/A	N/A	0.038	0.038
8 th	Tournefortia argentea	amoneset	N/A	N/A	0.051	0.051
9 th	Artocarpus mariannensis	breadfruit	N/A	N/A	0.026	0.026
10 th	Artocarpus altilis	mai	N/A	N/A	0.013	0.013
Remaining			N/A	N/A	0.04	0.04
TOTAL			.00	.00	2.05	2.05

**THE PRE-FILLED VALUES FOR GROWING STOCK REFER TO THE FOLLOWING THRESHOLD VALUES (SEE TABLE BELOW)**

Item	Value	Complementary information
Minimum diameter (cm) at breast height of trees included in growing stock (X)	12.5	N/A
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	1	N/A
Minimum diameter (cm) of branches included in growing stock (W)	N/A	N/A
Volume refers to above ground (AG) or above stump (AS)	AS	N/A

**PLEASE NOTE THAT THE DEFINITION OF GROWING STOCK HAS CHANGED AND SHOULD BE REPORTED AS GROWING STOCK DBH 10 CM INCLUDING THE STEM FROM GROUND LEVEL UP TO A DIAMETER OF 0 CM, EXCLUDING BRANCHES.**

Table 3c

Category	Net annual increment (m <sup>3</sup> per hectare and year)
	Forest

		1990	2000	2005	2010	2015
	Net annual increment	N/A	N/A	N/A	N/A	N/A
	... of which coniferous	N/A	N/A	N/A	N/A	N/A
	... of which broadleaved	N/A	N/A	N/A	N/A	N/A

Table 3d

Category		Biomass (million metric tonnes oven-dry weight)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Above ground biomass	3.63	3.63	3.63	3.63	3.63	0	0	0	0	0
	Below ground biomass	0.98	0.98	0.98	0.98	0.98	0	0	0	0	0
	Dead wood	0.03	0.03	0.03	0.03	0.03	0	0	0	0	0
TOTAL		4.64	4.64	4.64	4.64	4.64	.00	.00	.00	.00	.00

Table 3e

Category		Carbon (Million metric tonnes)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Carbon in above ground biomass	1.82	1.82	1.82	1.82	1.82	0	0	0	0	N/A
	Carbon in below ground biomass	0.49	0.49	0.49	0.49	0.49	0	0	0	0	N/A
	<i>Subtotal Living biomass</i>	2.31	2.31	2.31	2.31	2.31	0	0	0	0	N/A
	Carbon in dead wood	0.02	0.02	0.02	0.02	0.02	0	0	0	0	N/A
	Carbon in litter	N/A	N/A	N/A	N/A	N/A	0	0	0	0	N/A

	<i>Subtotal Dead wood and litter</i>	N/A	N/A	N/A	N/A	N/A	0	0	0	0	N/A
	Soil carbon	N/A	N/A	N/A	N/A	N/A	0	0	0	0	N/A
TOTAL		2.33	2.33	2.33	2.33	2.33	.00	.00	.00	.00	.00

## Tiers

Variable/category	Tier for status	Tier for trend
Total growing stock	Tier 1	Tier 1
Net annual increment	N/A	N/A
Above ground biomass	Tier 1	Tier 1
Below ground biomass	Tier 1	Tier 1
Dead wood	Tier 1	Tier 1
Carbon in above-ground biomass	Tier 1	Tier 1
Carbon in below ground biomass	Tier 1	Tier 1
Carbon in dead wood and litter	N/A	N/A
Soil carbon	N/A	N/A

## Tier criteria

Category	Tier for status	Tier for reported trend
Total growing stock	Tier 3: Data sources Recent 10 years National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI 10 years Domestic volume functions Tier 2: Data sources/registers and statistics modelling or old NFI 10 years or partial field inventory Tier 1: Other data sources	Tier 3: Estimate based on repeated compatible tiers 3 (tier for status) Domestic growth functions Tier 2: Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 tier for status Tier 1: Other
Net annual increment	Tier 3: Scientifically tested national volume and growth functions Tier 2: Selection of volume and growth functions as relevant as possible Tier 1: Other	Tier 3: Confirmation/adjustment of functions used through scientific work Tier 2: Review work done to seek alternative functions Tier: 1 Other

Biomass	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied or other domestic or otherwise nationally relevant biomass studies Tier 2: Application of country specific national or sub-national biomass conversion factors from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other
<ul style="list-style-type: none"> <li>• Carbon in above ground biomass</li> <li>• Carbon in below ground biomass</li> <li>• Carbon in dead wood and litter</li> <li>• Soil carbon</li> </ul>	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied Tier 2: Application of country specific national or sub-national biomass conversion factors form from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other

### 3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
Total growing stock	N/A	N/A
Growing stock of broadleaved coniferous	N/A	N/A
Growing stock composition	N/A	N/A
Net annual increment	N/A	N/A
Above-ground biomass	Does not include branch, leaf, or root biomass.	N/A
Below-ground biomass	N/A	N/A
Dead wood	Does not include branch or root biomass.	N/A
Carbon in above-ground biomass	N/A	N/A
Carbon in below-ground biomass	N/A	N/A
Carbon in dead wood	Carbon in standing dead tree stems only. Does not include branches, bark, seeds, and foliage.	N/A
Carbon in litter	N/A	N/A
Soil carbon	N/A	N/A

**Other general comments to the table**

No other inventory data exists to establish a trend; the 2008 estimate has been used for all reporting years. No other inventory data exists to establish a trend; the 2008 estimate has been used for all reporting years. No other inventory data exists to establish a trend; the 2008 estimate has been used for all reporting years.

## 4. What is the status of forest production and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 4.1 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.
Non wood forest product (NWFP)	Goods derived from forests that are tangible and physical objects of biological origin other than wood.
Commercial value of NWFP	For the purpose of this table, value is defined as the commercial market value at the forest gate.
Category	Definition
Production forest	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Multiple use forest	Forest area designated for more than one purpose and where none of these alone is considered as the predominant designated function.
Total wood removals	The total of industrial round wood removals and woodfuel removals.
...of which woodfuel	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

### 4.2 National data

#### 4.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Liu, Z., Fischer, L. In press. The Republic of the Marshall Islands Vegetation Mapping Using Very High Resolution Imagery: Methodology. U.S. Department of Agriculture, Forest Service, Pacific Southwest Region, Forest Health Protection. URL: <a href="http://www.fs.fed.us/r5/spf/fhp/fhm/landcover/islands/index.shtml">http://www.fs.fed.us/r5/spf/fhp/fhm/landcover/islands/index.shtml</a>	Land cover	2008	Data and methods available on the web site. Satellite data spans 2003-6.

2	Donnegan, Joseph A.; Trimble, Steven T.; Kusto, Karness; Kuegler, Olaf; Hiserote, Bruce A. 2011. Republic of the Marshall Islands' forest resources, 2008. Resour. Bull. PNW-RB-263. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 29 p.	Land cover	2008	Publication that was in preparation previously.
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

#### 4.2.2 Classification and definitions

National class	Definition
N/A	N/A

#### 4.2.3 Original data

Assumes all forest land is multiple use from Question 1.

### 4.3 Analysis and processing of national data

#### 4.3.1 Adjustment

Calibration factor 2008 =  $(18000/13391) = 1.34418639384661$

#### 4.3.2 Estimation and forecasting

Due to lack of data, the 2008 figures have been used for all reporting years.

## 4.3.3 Reclassification

Not needed.
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## 4.4 Data

Table 4a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	0	0	0	0	0
	Multiple use forest	12.636	12.636	12.636	12.636	12.636

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
1 st	N/A	N/A	N/A	N/A
2 nd	N/A	N/A	N/A	N/A
3 rd	N/A	N/A	N/A	N/A
4 th	N/A	N/A	N/A	N/A
5 th	N/A	N/A	N/A	N/A
6 th	N/A	N/A	N/A	N/A
7 th	N/A	N/A	N/A	N/A
8 th	N/A	N/A	N/A	N/A
9 th	N/A	N/A	N/A	N/A
10 th	N/A	N/A	N/A	N/A
TOTAL			.00	

2010	
Name of local currency	United States dollar

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

Table 4c Pre-filled data from FAOSTAT

Year	FRA 2015 category (1000 m <sup>3</sup> u.b.)	
	Total wood removals	...of which woodfuel
1990	N/A	N/A
1991	N/A	N/A
1992	N/A	N/A
1993	N/A	N/A
1994	N/A	N/A
1995	N/A	N/A

1996	N/A	N/A
1997	N/A	N/A
1998	N/A	N/A
1999	N/A	N/A
2000	N/A	N/A
2001	N/A	N/A
2002	N/A	N/A
2003	N/A	N/A
2004	N/A	N/A
2005	N/A	N/A
2006	N/A	N/A
2007	N/A	N/A
2008	N/A	N/A
2009	N/A	N/A
2010	N/A	N/A
2011	N/A	N/A

## Tiers

Category	Tier for status	Tier for reported trend
Production forest	N/A	Tier 1
Multiple use forest	Tier 3	Tier 3

## Tier Criteria

Category	Tier for status	Tier for reported trend
Production forest Multiple use forest	Tier 3: Updated including field verifications national forest maps including functions Tier 2: Forest maps older than 6 years including forest functions Tier 1: Other	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other

## 4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
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Production forest	N/A	N/A
Multiple use forest	N/A	N/A
Total wood removals	N/A	N/A
Commercial value of NWFP	N/A	N/A

**Other general comments to the table**

No other inventory data exists to establish a trend; the 2008 estimate has been used for all reporting years.

## 5. How much forest area is managed for protection of soil and water and ecosystem services?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 5.1 Categories and definitions

Category	Definition
Protection of soil and water	Forest area designated or managed for protection of soil and water
...of which production of clean water ( <i>sub-category</i> )	Forest area primarily designated or managed for water production, where most human uses are excluded or heavily modified to protect water quality.
...of which coastal stabilization ( <i>sub-category</i> )	Forest area primarily designated or managed for coastal stabilization.
...of which desertification control ( <i>sub-category</i> )	Forest area primarily designated or managed for desertification control.
...of which avalanche control ( <i>sub-category</i> )	Forest area primarily designated or managed to prevent the development or impact of avalanches on human life assets or infrastructure.
...of which erosion, flood protection or reducing flood risk ( <i>sub-category</i> )	Forest area primarily designated or managed for protecting communities or assets from the impacts of erosion riparian floods and landslides or for providing flood plain services.
...of which other ( <i>sub-category</i> )	Forest area primarily designated or managed for other protective functions.
Ecosystem services, cultural or spiritual values	Forest area primarily designated or managed for selected ecosystem services or cultural or spiritual values.
...of which public recreation ( <i>sub-category</i> )	Forest area designated or managed for public recreation.
...of which carbon storage or sequestration ( <i>sub-category</i> )	Forest area designated or managed for carbon storage or sequestration.
...of which spiritual or cultural services ( <i>sub-category</i> )	Forest area designated or managed for spiritual or cultural services.
...of which other ( <i>sub-category</i> )	Forest area designated or managed for other ecosystem services.

### 5.2 National data

#### 5.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A

3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

### 5.2.2 Classification and definitions

National class	Definition
N/A	N/A

### 5.2.3 Original data

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## 5.3 Analysis and processing of national data

### 5.3.1 Adjustment

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### 5.3.2 Estimation and forecasting

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### 5.3.3 Reclassification

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## 5.4 Data

Table 5a

Categories		Forest area (1000 hectares)				
		1990	2000	2005	2010	2015
	Protection of soil and water	N/A	N/A	N/A	N/A	N/A
	... of which production of clean water	N/A	N/A	N/A	N/A	N/A
	... of which coastal stabilization	N/A	N/A	N/A	N/A	N/A

	... of which desertification control	N/A	N/A	N/A	N/A	N/A
	... of which avalanche control	N/A	N/A	N/A	N/A	N/A
	... of which erosion, flood protection or reducing flood risk	N/A	N/A	N/A	N/A	N/A
	... of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A

<b>Other</b>
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N/A
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Table 5b

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015
Ecosystem services, cultural or spiritual values	N/A	N/A	N/A	N/A	N/A
...of which public recreation	N/A	N/A	N/A	N/A	N/A
...of which carbon storage or sequestration	N/A	N/A	N/A	N/A	N/A
...of which spiritual or cultural services	N/A	N/A	N/A	N/A	N/A
...of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A

## Tiers

Category	Tier for reported trend	Tier for status
Protection of soil and water	N/A	N/A
Ecosystem services, cultural or spiritual values	N/A	N/A

## Tier criteria

Category	Tier for status	Tier for reported trend
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Protection of soil and water	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations or legislation relating to soil and water protection. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other
<ul style="list-style-type: none"> <li>• Cultural or spiritual values</li> <li>• Public recreation</li> <li>• Spiritual or cultural services</li> <li>• Other</li> </ul>	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other

## 5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	N/A	N/A
Production of clean water	N/A	N/A
Coastal stabilization	N/A	N/A
Desertification control	N/A	N/A
Avalanche control	N/A	N/A
Erosion, flood protection or reducing flood risk	N/A	N/A
Other protective functions	N/A	N/A
Ecosystem services, cultural or spiritual values	N/A	N/A
Public recreation	N/A	N/A
Carbon storage or sequestration	N/A	N/A
Spiritual or cultural services	N/A	N/A
Other ecosystem services	N/A	N/A

**Other general comments to the table**

N/A
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## 6. How much forest area is protected and designated for the conservation of biodiversity and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 6.1 Categories and definitions

Category	Definition
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.
Forest area within protected areas	Forest area within formally established protected areas independently of the purpose for which the protected areas were established.

### 6.2 National data

#### 6.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Liu, Z., Fischer, L. In press. The Republic of the Marshall Islands Vegetation Mapping Using Very High Resolution Imagery: Methodology. U.S. Department of Agriculture, Forest Service, Pacific Southwest Region, Forest Health Protection. URL: <a href="http://www.fs.fed.us/r5/spf/fhp/fhm/landcover/islands/index.shtml">http://www.fs.fed.us/r5/spf/fhp/fhm/landcover/islands/index.shtml</a>	Land cover	2008	Data and methods available on the web site. Satellite data spans 2003-6.
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

#### 6.2.2 Classification and definitions

National class	Definition
N/A	N/A

### 6.2.3 Original data

## 6.3 Analysis and processing of national data

### 6.3.1 Adjustment

### 6.3.2 Estimation and forecasting

Due to lack of data, the 2008 figures have been used for all reporting years.

### 6.3.3 Reclassification

## 6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Conservation of biodiversity	0	0	0	0	0
	Forest area within protected areas	N/A	N/A	N/A	N/A	N/A

### Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	N/A	Tier 1
Forest area within protected areas	N/A	N/A

### Tier criteria

Category	Tier for status	Tier for reported trend
<ul style="list-style-type: none"> <li>Conservation of biodiversity</li> <li>Forests within protected areas</li> </ul>	<p>Tier 3: Data obtained from national or state agencies responsible for conservation and protected area or legislation relating to area protection. Tier 2: Studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates Tier 1 Other</p>	<p><b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other</p>

**6.5 Comments**

Category	Comments related to data definitions etc	Comments on the reported trend
Conservation of biodiversity	N/A	N/A
Forest area within protected areas	Looking toward the future, the Micronesian challenge is a conservation challenge to protect at least 30 percent of the near-shore marine and 20 percent of the terrestrial resources across Micronesia by 2020.	N/A

<b>Other general comments to the table</b>
--

No other inventory data exists to establish a trend; the 2008 estimate has been used for all reporting years.
---

## 7. What is the area of forest affected by woody invasive species?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 7.1 Categories and definitions

Category	Definition
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.

### 7.2 National data

#### 7.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

#### 7.2.2 Classification and definitions

National class	Definition
N/A	N/A

#### 7.2.3 Original data

--

### 7.3 Analysis and processing of national data

#### 7.3.1 Adjustment

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Invasive species	Tier 3: Systematic assessment in forest inventory or other survey (e.g. by conservation department) within the last 5 years) Tier 2: Systematic assessment in forest inventory or other survey (e.g. by conservation department conducted more than 5 years ago) Tier 1: Other	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other
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**7.5 Comments**

Category	Comments related to data definitions etc	Comments on the reported trend
Invasive species	N/A	N/A

Other general comments to the table
N/A

## 8. How much forest area is damaged each year?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 8.1 Categories and definitions

Category	Definition
Number of fires	Number of fires per year
Burned area	Area burned per year
Outbreaks of insects	A detectable reduction in forest health caused by a sudden increase in numbers of harmful insects.
Outbreaks of diseases	A detectable reduction in forest health caused by a sudden increase in numbers of harmful pathogens, such as bacteria, fungi, phytoplasma or virus.
Severe weather events	Damage caused severe weather events, such as snow, storm, drought, etc.

### 8.2 National data

#### 8.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

#### 8.2.2 Classification and definitions

National class	Definition
N/A	N/A

#### 8.2.3 Original data

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### 8.3 Analysis and processing of national data

#### 8.3.1 Adjustment

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#### 8.3.2 Estimation and forecasting

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#### 8.3.3 Reclassification

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### 8.4 Data

Table 8a

Category		000 ha, number of fires									
		2003		2004		2005		2006		2007	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which forest area burned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which forest area burned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 8b

Outbreak category	Description/name	Year(s) of latest outbreak	Area damaged (000 hectares)
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

### Outbreak category

1 Insects

2 Diseases

3 Severe weather events

### Tiers

Category	Tier for status	Tier for trend
Area affected by fire	N/A	N/A
<ul style="list-style-type: none"> <li>• Insects</li> <li>• Diseases</li> <li>• Severe weather events</li> </ul>	N/A	N/A

### Tier criteria

Category	Tier for status	Tier for reported trend
Burned area	<b>Tier 3</b> : National fire monitoring routines <b>Tier 2</b> : Remote sensing surveys <b>Tier 1</b> : Other	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other
<ul style="list-style-type: none"> <li>• Insects</li> <li>• Diseases</li> <li>• Severe weather events</li> </ul>	<b>Tier 3</b> : Systematic survey (e.g. via inventory or aerial damage assessment) <b>Tier 2</b> : Management records <b>Tier 1</b> : Other	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other

### 8.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
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Burned area	N/A	N/A
Insects	N/A	N/A
Diseases	N/A	N/A
Severe weather events	N/A	N/A

<b>Other general comments to the table</b>
N/A

## 9. What is the forest area with reduced canopy cover?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

Category	Definition
Reduction in canopy cover	Forest that has undergone a reduction of canopy cover of more than 20% between the years 2000 and 2010 within the forest canopy cover range of 30-80% as detected by the MODIS VCF sensor.

Table 9

Category	Area of forest with reduced canopy cover (000 ha)
Reduction in canopy cover	N/A

Tiers

Category	Tier for reported trend
Reduction in canopy cover	N/A

Tier criteria

Category	Tier for reported trend
Reduction in canopy cover	<b>Tier 3</b> : Remote sensing with ground truthing and/or Landsat imagery <b>Tier 2</b> : Remote sensing using Modis (using pre-filled data provided by FAO) <b>Tier 1</b> : Expert opinion

Comments

Category	Comments related to data definitions etc
Reduction in canopy cover	N/A

Other general comments

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## 10. What forest policy and regulatory framework exists to support implementation of sustainable forest management SFM?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 10.1 Categories and definitions

Category	Definition
Policies supporting sustainable forest management	Policies or strategies that explicitly encourage sustainable forest management.
Legislation and regulations supporting sustainable forest management	Legislation and regulations that govern and guide sustainable forest management, operations and use.

### 10.2 National data

#### 10.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

#### 10.2.2 Classification and definitions

National class	Definition
N/A	N/A

#### 10.2.3 Original data

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### 10.3 Data

Table 10

Category				
	National	Sub-national		
		Regional	Provincial/State	Local
Policies supporting sustainable forest management	no	no	no	no
... of which, in <u>publicly</u> owned forests	no	no	no	no
... of which, in <u>privately</u> owned forests	no	no	no	no
Legislation and regulations supporting sustainable forest management	no	no	no	no
... of which, in <u>publicly</u> owned forests	no	no	no	no
... of which, in <u>privately</u> owned forests	no	no	no	no

#### 10.4 Comments

Variable / category	Comments related to data definitions etc
Policies supporting sustainable forest management	N/A
Legislation and regulations supporting sustainable forest management	N/A

Other general comments

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## 11. Is there a national platform that promotes stakeholder participation in forest policy development?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 11.1 Categories and definitions

Category	Definition
National stakeholder platform	A recognized procedure that a broad range of stakeholders can use to provide opinions, suggestions, analysis, recommendations and other input into the development of national forest policy.

### 11.2 National data

#### 11.2.1 Data sources

	References to sources of information	Years	Additional comments
1	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A

Table 11

Is there a national platform that promotes or allows for stakeholder participation in forest policy development?	no
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### 11.3 Comments

Category	Comments related to data definitions etc
National stakeholder platform	N/A

Other general comments

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## 12. What is the forest area intended to be in permanent forest land use and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 12.1 Categories and definitions

Category	Definition
Forest area intended to be in permanent forest land use	Forest area that is designated or expected to be retained as forest and is highly unlikely to be converted to other land use.
...of which permanent forest estate ( <i>sub-category</i> )	Forest area that is designated by law or regulation to be retained as forest and may not be converted to other land use.

### 12.2 National data

#### 12.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

#### 12.2.2 Classification and definitions

National class	Definition
N/A	N/A

#### 12.2.3 Original data

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### 12.3 Analysis and processing of national data

## 12.3.1 Adjustment

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## 12.3.2 Estimation and forecasting

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## 12.3.3 Reclassification

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## 12.4 Data

Table 12

Categories		Forest area 2010 (000 ha)
	Forest area intended to be in permanent forest land use	N/A
	... of which permanent forest estate	N/A

## Tiers

Category	Tier for status
Forest area intended to be in permanent forest land use	N/A
Permanent forest estate	N/A

## Tier Criteria

Category	Tier for status
Forest area intended to be in permanent forest land use	<b>Tier 3</b> : National or sub-national land use plans strategy documents or other reports within the past 10 years <b>Tier 2</b> : National or sub-national land use plans strategy documents or other reports within the past 20 years <b>Tier 1</b> : Other
Permanent forest estate	<b>Tier 3</b> : National or sub-national land use plans strategy documents or other reports within the past 10 years <b>Tier 2</b> : National or sub-national land use plans strategy documents or other reports within the past 20 years <b>Tier 1</b> : Other

## 12.5 Comments

Category	Comments related to data definitions etc
Forest area intended to be in permanent forest land use	N/A
Permanent forest estate	N/A

Other general comments

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### 13. How does your country measure and report progress towards SFM at the national level?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

#### 13.1 Categories and definitions

Category	Definition
Forest area monitored under a national forest monitoring framework	Forest area monitored by a national monitoring framework or systems that provide measurement based periodic monitoring of forest extent and quality.
Forest reporting at national scale	National reporting of forest extent and characteristics that includes some measure of progress toward sustainable forest management.

#### 13.2 National data

##### 13.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

##### 13.2.2 Classification and definitions

National class	Definition
N/A	N/A

#### 13.3 Data

Table 13a

Category	% of total forest area	Most recent year	Check all boxes that apply					
			Continuous	Periodic	Permanent ground plots	Temporary ground plots	Aerial/remote sensing sample based	Aerial/remote sensing full coverage
Forest inventory	N/A	N/A						
Other field assessments	N/A	N/A						
Updates to other sources	N/A	N/A						
Expert estimate	0	2013						

Table 13b

Type of forest reporting used at national scale	Check boxes that apply
1 Criteria and Indicators reporting	no
2 Periodic national state of the forest report	no
3 Other (please document)	no
4 None	no

Other type of forest reporting
N/A

## 13.4 Comments

Category	Comments
N/A	N/A
N/A	N/A
N/A	N/A

Other general comments

--

## 14. What is the area of forest under a forest management plan and how is this monitored?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 14.1 Categories and definitions

Category	Definition
Forest area with management plan	Forest area that has a long-term documented management plan, aiming at defined management goals which is periodically revised
...of which for production ( <i>sub-category</i> )	Forest management plan mainly focused on production
...of which for conservation ( <i>sub-category</i> )	Forest management plan mainly focused on conservation
Monitoring of forest management plans	Government monitoring of forest management plan implementation conducted through field visits or audits of forest management plan performance

### 14.2 National data

#### 14.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

### 14.3 Data

Table 14a

Forest plan type	Forest area 2010 (000 ha)
Forest area with management plan	N/A
... of which for production	N/A
... of which for conservation	N/A

Table 14b

Indicate which (if any) of the following are required in forest management plans in your country	
1 Soil and water management	no

2 High conservation value forest delineation	no
3 Social considerations community involvement	no

Table 14c

<b>Percent of area under forest management plan that is monitored annually</b>	<b>N/A</b>
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## Tiers

<b>Category</b>	<b>Tier for status</b>
Forest area with management plan	N/A
Percent of area under forest management plan that is monitored annually	N/A

## Tier criteria

<b>Category</b>	<b>Tier for status</b>
Forest area with management plan	<b>Tier 3</b> : Reports that describe national records 5 years old or less that contain long-term forest monitoring plans <b>Tier 2</b> : Industry or other records indicating the presence of a long-term forest management plan <b>Tier 1</b> : Other
Percent of area under forest management plan that is monitored annually	<b>Tier 3</b> : Government documentation of monitoring extent <b>Tier 2</b> : Reports from forest managers or other documental sources <b>Tier 1</b> : Other

## 14.4 Comments

<b>Category</b>	<b>Comments</b>
Forest area with management plan	N/A
N/A	N/A
N/A	N/A

## Other general comments

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## 15. How are stakeholders involved in the management decision making for publicly owned forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 15.1 Categories and definitions

Category	Definition
Stakeholder involvement	Stakeholder involvement is defined as significant inputs into at least one aspect of forest management at the operational scale

Table 15

Please indicate the type of stakeholder involvement in forest management decision making required in your country	
1. Planning phase	no
2. Operations phase	no
3. Review of operations	no

Tiers

Category	Tier for status
Type of stakeholder inputs	Tier 1

Tier criteria

Category	Tier for status
Type of stakeholder inputs	<b>Tier 3</b> : Government (national or sub-national) documentation of stakeholder inputs <b>Tier 2</b> : Government (national or subnational) requirement but stakeholder inputs not documented <b>Tier 1</b> : Other

### 15.2 Comments

Category	Comments
N/A	N/A
N/A	N/A
N/A	N/A

Other general comments

--

## 16. What is the area of forest under an independently verified forest certification scheme?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 16.1 Categories and definitions

Category	Definition
FSC certification	Forest area certified under the Forest Stewardship Council certification scheme
PEFC certification	Forest area certified under the Programme for the Endorsement of Forest Certification scheme
Other international forest management certification	Forest area certified under an international forest management certification scheme with published standards and is independently verified by a third-party, excluding FSC and PEFC certification.
Certified forest area using a domestic forest management certification scheme	Area certified under a forest management certification scheme with published standards that are nationally recognized and independently verified by a thirdparty

### 16.2 Data

Table 16a

International forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	FSC	0	0	0	0	0	0	0
	PEFC	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	0	0	0	0	0	0	
	PEFC	0	0	0	0	0	0	
	Other	0	0	0	0	0	0	

Table 16b

Domestic forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	N/A	0	0	0	0	0	0	0
	N/A	0	0	0	0	0	0	0
	N/A	0	0	0	0	0	0	0

		2007	2008	2009	2010	2011	2012	
		0	0	0	0	0	0	
		0	0	0	0	0	0	
		0	0	0	0	0	0	

## Tier criteria

Category	Tier for status
<b>International</b> forest management certification	Tier 3: International forest management scheme records maintained by the certifying organization for the reporting year Tier 2: International forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other
<b>Domestic</b> forest management certification	Tier 3: National registry reports for domestic forest management certification maintained by the certifying organization for the reporting year Tier 2: Domestic forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other

## Tiers

Category	Tier for status
<b>International</b> forest management certification	N/A
<b>Domestic</b> forest management certification	N/A

## 16.3 Comments

Category	Comments related to data definitions etc
Certified forest area using an international forest management certification scheme	N/A
Domestic forest management certification	N/A

## Other general comments

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## 17. How much money do governments collect from and spend on forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 17.1 Categories and definitions

Category	Definition
Forest revenue	All government revenue collected from the domestic production and trade of forest products and services. For this purpose revenue include: <ul style="list-style-type: none"> <li>• <u>Goods</u> : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products.</li> <li>• <u>Services</u> : including concession fees and royalties, stumpage payments, public timber sales revenue taxes and charges based on forest area or yield, taxes on domestic trade and export of forest products, special levies on forestry activities and payments into forest related funds, other miscellaneous inspection, licence and administrative fees levied by forest administrations, permit and licence fees for recreation and other forest related activities.</li> </ul>
Public expenditure on forestry	All government expenditure on forest related activities.

### 17.2 National data

#### 17.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

### 17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	N/A	N/A	N/A
Public expenditure on forestry	N/A	N/A	N/A
	2000	2005	2010
Name of Local Currency	United States dollar	N/A	N/A

**17.4 Comments**

Category	Comments related to data definitions etc
Forest revenue	N/A
Public expenditure on forestry	N/A
Other general comments	N/A

Other general comments

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## 18. Who owns and manages the forests and how has this changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 18.1 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.
...of which owned by the state at national scale ( <i>sub-category</i> )	Forest owned by the State at the national scale or administrative units of the public administration or by institutions or corporations owned by the public administration.
...of which owned by the state at the sub-national government scale ( <i>sub-category</i> )	Forest owned by the State at the sub-national government scale 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 cooperatives corporations and other business entities, private, religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.
...of which individuals ( <i>sub-category</i> )	Forest owned by individuals and families.
...of which private business entities and institutions ( <i>sub-category</i> )	Forest owned by private corporations cooperatives companies and other business entities as well as private nonprofit organizations such as NGOs nature conservation associations, and private religious and educational institutions etc.
...of which local tribal and indigenous communities ( <i>sub-category</i> )	Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area or forest owned by communities of indigenous or tribal people The community members are coowners that share exclusive rights and duties and benefits contribute to the community development.
Unknown ownership	Forest area where ownership is unknown includes areas where ownership is unclear or disputed.
Categories related to management rights of public forests	Definition
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 companies	Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities private cooperatives, private nonprofit 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.

### 18.2 National data

## 18.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

## 18.2.2 Classification and definitions

National class	Definition
N/A	N/A

## 18.2.3 Original data

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## 18.3 Analysis and processing of national data

## 18.3.1 Adjustment

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## 18.3.2 Estimation and forecasting

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## 18.3.3 Reclassification

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## 18.4 Data

Table 18a

Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010

CFRQ	Public ownership	N/A	N/A	N/A	N/A
CFRQ	... of which owned by the state at national scale	N/A	N/A	N/A	N/A
CFRQ	... of which owned by the state at the sub-national government scale	N/A	N/A	N/A	N/A
CFRQ	Private ownership	N/A	N/A	N/A	N/A
CFRQ	... of which owned by individuals	N/A	N/A	N/A	N/A
CFRQ	... of which owned by private business entities and institutions	N/A	N/A	N/A	N/A
CFRQ	... of which owned by local, tribal and indigenous communities	0	0	0	N/A
CFRQ	Unknown ownership	N/A	N/A	N/A	N/A
TOTAL		.00	.00	.00	.00

## Tiers

Category	Tier for status	Tier for reported trend
Public ownership	N/A	N/A
Private ownership	N/A	N/A
Unknown ownership	N/A	N/A

## Tier criteria

Category	Tier for status	Tier for reported trend
Ownership	Tier 3: National forestry statistics registers of land titles or maps on land ownership or all forest area under one ownership category that is five years old or less. Tier 2: National forestry statistics registers of land titles or maps on land ownership or questionnaires that are more than five years old. Tier 1: Other	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010

Public Administration	N/A	N/A	N/A	N/A
Individuals	N/A	N/A	N/A	N/A
Private companies	N/A	N/A	N/A	N/A
Communities	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A
TOTAL	.00	.00	.00	.00

Category	Tier for reported trend	Tier for status
Public Administration	N/A	N/A
Individuals	N/A	N/A
Private companies	N/A	N/A
Communities	N/A	N/A
Other	N/A	N/A

### 18.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Public ownership	N/A	N/A
Private ownership	N/A	N/A
Unknown ownership	N/A	N/A
Management rights	N/A	N/A

Other general comments to the table
N/A

## 19. How many people are directly employed in forestry?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 19.1 Categories and definitions

Category	Definition
Full-time equivalents (FTE)	A measurement equal to one person working full-time during a specified reference period.
Employment in forestry	Employment in activities related to production of goods derived from forests. This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

### 19.2 National data

#### 19.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

#### 19.2.2 Classification and definitions

National class	Definition
N/A	N/A

#### 19.2.3 Original data

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### 19.3 Data

Table 19

Category	Employment (000 years FTE)
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		1990	2000	2005	2010
	Employment in forestry	N/A	N/A	N/A	N/A
	... of which female	N/A	N/A	N/A	N/A

#### 19.4 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	N/A	N/A

Other general comments to the table
N/A

## 20. What is the contribution of forestry to Gross Domestic Product (GDP)?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 20.1 Categories and definitions

Category	Definition
Gross value added from forestry (at basic prices)	This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

### 20.2 Data

Table 20 (Pre-filled data from UNdata/EUROSTAT)

Category	Million	Currency	Year for latest available information
Gross value added from forestry (at basic prices)	N/A	N/A	N/A

### 20.3 Comments

Category	Comments
N/A	N/A

Other general comments

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## 21. What is forest area likely to be in the future

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 21.1 Categories and definitions

Category	Definition
Government target/aspiration for forest area	Government target/aspiration for forest area for a specific year.
Forests earmarked for conversion	Forest area that is allocated/classified or scheduled to be converted into non-forest uses.

### 21.2 National data

#### 21.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

### 21.3 Data

Table 21a

Category	Forest area (000 ha)	
	2020	2030
Government target/aspiration for forest area	N/A	N/A

Table 21b

Category	Forest area (000 ha)
	2013
Forests earmarked for conversion	N/A

### 21.4 Comments

Category	Comments
Government target/aspiration for forest area	N/A

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Forests earmarked for conversion
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N/A
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Other general comments

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