



Food and Agriculture
Organization of the
United Nations

Global Forest Resources Assessment 2020

Report

Micronesia (Federated States of)

Rome, 2020



FAO has been monitoring the world's forests at 5 to 10 year intervals since 1946. The Global Forest Resources Assessments (FRA) are now produced every five years in an attempt to provide a consistent approach to describing the world's forests and how they are changing. The FRA is a country-driven process and the assessments are based on reports prepared by officially nominated National Correspondents. If a report is not available, the FRA Secretariat prepares a desk study using earlier reports, existing information and/or remote sensing based analysis.

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Introduction

Report preparation and contact persons

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

Name	Role	Email	Tables
Sonja Oswalt	National correspondent	soswalt@fs.fed.us	All

Introductory text

Place an introductory text on the content of this report

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National data

Data sources

1983	References	<p>MacLean, C. D., C. D. Whitesell, T. G. Cole, and K. E. McDuffie. 1988. Timber Resources of Kosrae, Pohnpei, Truk, and Yap, Federated States of Micronesia. Resource Bulletin PSW-24, USDA Forest Service, Pacific Southwest Forest and Range Experiment Station, in cooperation with Pacific Northwest Forest and Range Experiment Station, Portland, OR, Berkeley, CA. 1983;</p> <p>Falanruw, M. C., C. D. Whitesell, T. G. Cole, C. D. MacLean, and A. H. Ambacher. 1987a. Vegetation survey of Yap, Federated States of Micronesia. Resource Bulletin PSW-RB-21, USDA Forest Service, Berkely, CA. 1976;</p> <p>Falanruw, M. C., T. G. Cole, A. H. Ambacher, K. E. McDuffie, and J. E. Maka. 1987b. Vegetation Survey of Moen, Dublon, Fefan, and Eten, State of Truk, Federated States of Micronesia. Resource Bulletin PSW-20, Pacific Southwest and Pacific Northwest Forest and Range Experiment Stations, USDA Forest Service, Berkeley, CA. 1976;</p> <p>MacLean, C. D., T. G. Cole, C. D. Whitesell, M. V. Falanruw, and A. H. Ambacher. 1986. Vegetation survey of Pohnpei, Federated States of Micronesia. PSW-18, Pacific Southwest Forest and Range Experiment Station, USDA Forest Service.1983;</p> <p>Whitesell, C. D., C. D. MacLean, M. C. Falanruw, T. G. Cole, and A. H. Ambacher. 1986. Vegetation Survey of Kosrae, Federated States of Micronesia. Resource Bulletin PSWRB-17, U.S.D.A. Forest Service, Berkeley, CA. 1983</p>
	Methods used	Registers/questionnaires
	Additional comments	FAO Calibrated Area (ha)

2006	References	Liu, Z., Fischer, L. In press. The Federated States of Micronesia Vegetation Mapping Using Very High Resolution Imagery: Methodology. U.S. Department of Agriculture, Forest Service, Pacific Southwest Region, Forest Health Protection. URL: http://www.fs.fed.us/r5/spf/fhp/fhm/landcover/islands/index.shtml , 2005-6
	Methods used	Registers/questionnaires
	Additional comments	FAO Calibrated Area (ha)

Classifications and definitions

1983	National class	Definition
	Total Forest	
	Other Land	
	Inland Water	

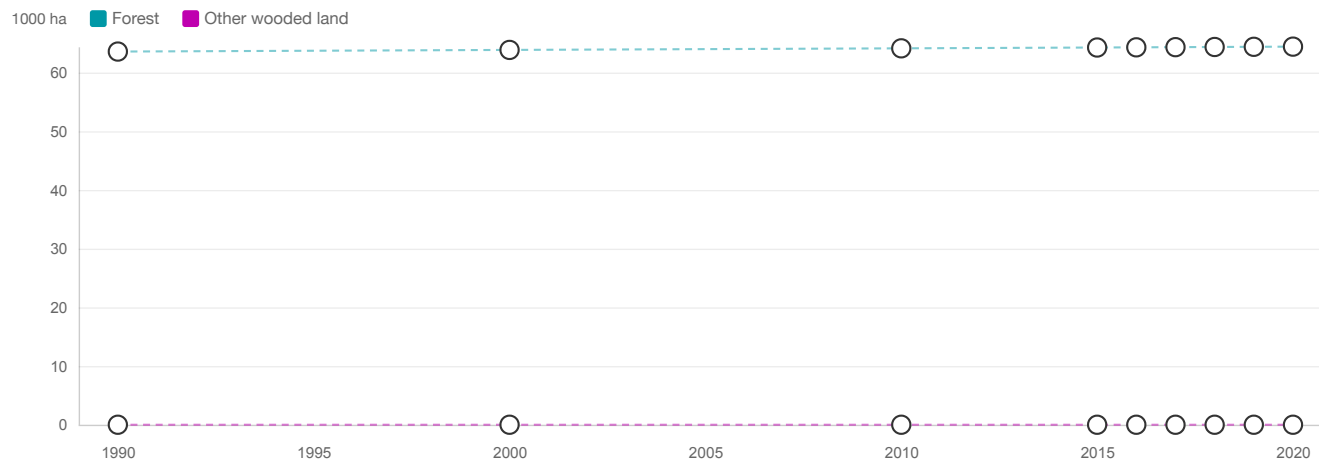
2006	National class	Definition

	Total Forest	
	Other Land	
	Inland Water	

Original data and reclassification

1983	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Total Forest	63.39	100.00 %	0.00 %	0.00 %
	Other Land	6.30	0.00 %	0.00 %	100.00 %
	Inland Water	0.31	0.00 %	0.00 %	100.00 %
	Total	70.00	63.39	0.00	6.61

2006	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Total Forest	64.02	100.00 %	0.00 %	0.00 %
	Other Land	5.85	0.00 %	0.00 %	100.00 %
	Inland Water	0.13	0.00 %	0.00 %	100.00 %
	Total	70.00	64.02	0.00	5.98



FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	63.58	63.86	64.13	64.27	64.30	64.33	64.36	64.39	64.42
Other wooded land (a)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other land (c-a-b)	6.42	6.14	5.87	5.73	5.70	5.67	5.64	5.61	5.58
Total land area (c)	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00

The FAOSTAT land area figure for the year 2015 is used for all reference years

Climatic domain	% of forest area 2015	Override value
Boreal	0.00	
Temperate	0.00	
Sub-tropical	0.00	
Tropical	100.00	

Comments

1b Forest characteristics

National Data

Data sources + type of data source eg NFI, etc

1	Liu, Z., Fischer, L. In press. Preliminary Vegetation Mapping of The Federated States of Micronesia Using Very High Resolution Imagery: Methodology. U.S. Department of Agriculture, Forest Service, Pacific Southwest Region, Forest Health Protection. URL: http://www.fs.fed.us/r5/spf/fhp/fhm/landcover/islands/index.shtml	Land cover	2005-6	Data and methods available on the web site. Satellite data spans 2005-6.
2	Falanruw, M. C., C. D. Whitesell, T. G. Cole, C. D. MacLean, and A. H. Ambacher. 1987a. Vegetation survey of Yap, Federated States of Micronesia. Resource Bulletin PSW-RB-21, USDA Forest Service, Berkely, CA.	Forest land area	1976	N/A
3	Falanruw, M. C., T. G. Cole, A. H. Ambacher, K. E. McDuffie, and J. E. Maka. 1987b. Vegetation Survey of Moen, Dublon, Fefan, and Eten, State of Truk, Federated States of Micronesia. Resource Bulletin PSW-20, Pacific Southwest and Pacific Northwest Forest and Range Experiment Stations, USDA Forest Service, Berkeley, CA.	Forest land area	1976	N/A
4	MacLean, C. D., T. G. Cole, C. D. Whitesell, M. V. Falanruw, and A. H. Ambacher. 1986. Vegetation survey of Pohnpei, Federated States of Micronesia. PSW-18, Pacific Southwest Forest and Range Experiment Station, USDA Forest Service.	Forest land area	1983	N/A
5	Whitesell, C. D., C. D. MacLean, M. C. Falanruw, T. G. Cole, and A. H. Ambacher. 1986. Vegetation Survey of Kosrae, Federated States of Micronesia. Resource Bulletin PSWRB-17, U.S.D.A. Forest Service, Berkeley, CA.	Forest land area	1983	N/A

National classification and definitions

National class	Definition
Upland forest	Highland forest of tropical, primarily native and naturalized, tree species.
Palm forest	A forest composed primarily of palm species.
Swamp forest	Forest occuring in areas where soils are inudated with fresh or slightly saline water.
Mangrove forest	Lowland, tidally inundated forest composed of mangrove tree species.
Atoll forest	Primarily native forest occuring in the interior of larger, wetter atolls.
Plantation forest	Stands of planted trees used for commercial purposes.

Dwarf forest	Highland, wet moss forest with low growing trees.
Secondary vegetation	A vegetation type characterized by small, fast-growing trees and vines, usually weedy invaders.
Agroforest	Land where trees, shrubs, and herbs are cultivated for food or medicines among a cover of other forest trees.
Agroforest w/ coconuts	Land where primarily coconut trees are cultivated for food and building materials among a cover of other forest trees.
Coconut plantations	Stands of planted coconut trees used for commercial purposes.
Strand	Coastal vegetation occurring in narrow strips on sandy, rocky coasts. May include forest species as this vegetation grades into interior forest.
Marsh, fresh	A perennially-wet substrate forest in lowland areas where drainage is hindered. Dominated by fresh water.
Marsh, salt	A perennially-wet substrate forest in lowland areas where drainage is hindered. Dominated by salt water.
Grasslands	Nonforest land with less than 10 percent tree cover that is dominated by grasses and may be associated with, shrubs, ferns, and other vegetation.
Cropland	Nonforest land used for growing food or fiber crops.
Urban	Nonforest land that is urban land use.
Urban agriculture	Nonforest land that is under cultivation in urban areas.
Barren	Nonforest land that has little or no vegetation cover.
Water	Streams, lakes, or other water bodies.

Original data

1.1.1					
1983	Chuuk	Kosrae	Pohnpei	Yap	Grand Total
	<i>hectares</i>				
Upland forest	677	5090	12548	2556	20871
Palm forest	2		1383		1385
Swamp forest		345	214	155	714
Mangrove forest	306	1562	5525	1171	8564
Atoll forest			6		6
Plantation forest	1		6		7
Dwarf forest		69	1		70
Secondary vegetation	252	1272	1843	553	3920
Agroforest	66	1659	1945	1515	5185
Agroforest w/ coconuts	2312	926	9796	864	13898
Coconut plantations			124	159	283
Strand	5				5

Marsh, fresh	234	25	149	165	573
Marsh, salt			29	6	35
Grasslands	174	17	1476	2175	3842
Cropland	3	2	79	46	130
Urban	129	51	180	307	667

Urban agriculture	67	62	61	190	
Barren	5	2	2	8	17
Water	4	99	125	38	266
Grand total	4170	11186	35493	9779	60628

Urban agriculture	67	62	61	190	
Barren	5	2	2	8	17
Water	4	99	125	38	266
Grand total	4170	11186	35493	9779	60628

Note: 1983 Yap urban is greater than reported in 1976 because of expansion of airstrip.

2006	Chuuk	Kosrae	Pohnpei	Yap	Grand Total
<i>hectares</i>					
Upland Forest	1678	7378	19546	3129	31730
Palm Forest	79	0	1832	0	1910
Swamp Forest	0	456	99	25	580
Mangrove Forest	1287	1397	5658	1067	9409
Secondary Vegetation	312	263	896	398	1869
Agroforest	4295	1492	5912	2731	14429
Marsh	222	61	134	125	543
Savanna/ Shrub/Grass	277	6	987	1657	2927
Cropland	60	2	12	6	79
Urban Builtup	313	127	393	292	1125
Urban Cultivated	213	177	178	121	690
Barren	17	16	5	74	113

Water	57	23	33	9	121
Grand Total	8810	11397	35685	9634	65526

Analysis and processing of national data

Estimation and forecasting

Calibration factor 1983 = (70000/60625) = 1.15463917525773

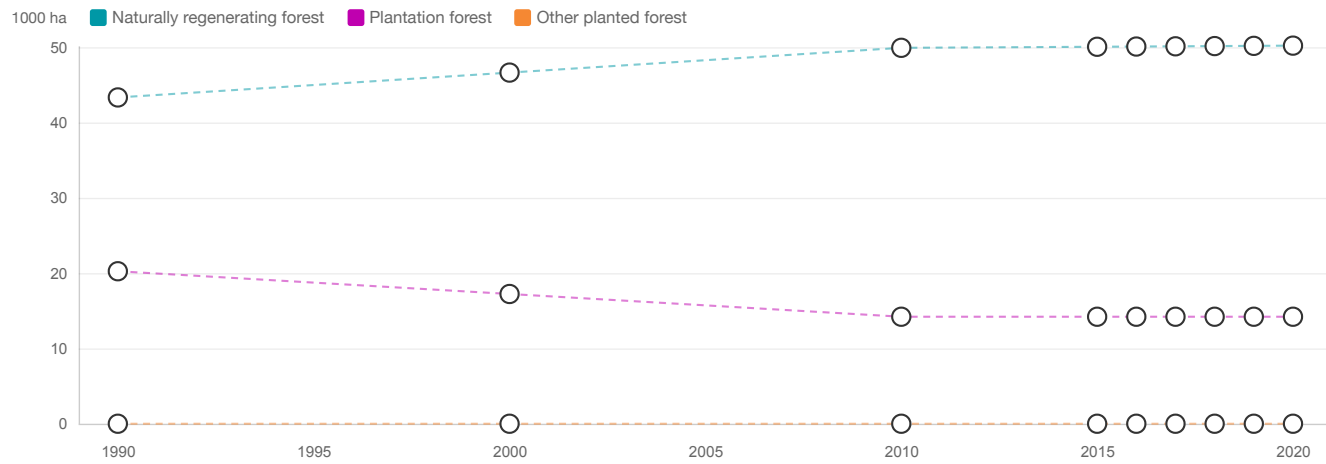
Calibration factor 2006 = (70000/65526) = 1.068278241

Land cover	1983	2006	Change	per year
	<i>hectares</i>			
Upland forest	24098	33897	9798	426.01
Palm forest	1599	2041	442	19.21
Swamp forest	824	620	-205	-8.90
Mangrove forest	9888	10051	163	7.08
Atoll forest	7	0	-7	-0.30
Plantation forest	8	0	-8	-0.35
Dwarf forest	81	0	-81	-3.51
Secondary vegetation	4526	1997	-2529	-109.97
Agroforest	5987	15415	9428	409.90
Agroforest w/ coconuts	16047	0	-16047	-697.70
Coconut plantations	327	0	-327	-14.21
Strand	6	0	-6	-0.25
Marsh, fresh	662	580	-82	-3.56
Marsh, salt	40	0	-40	-1.76
Grasslands	4436	3127	-1309	-56.92
Cropland	150	84	-66	-2.87
Urban	767	1202	435	18.92
Urban agriculture	219	737	518	22.50
Barren	20	121	101	4.40
Water	307	129	-178	-7.73
Grand total	70000	70000		

Due to lack of information, primary forest and planted forest were considered constant in the period 2010-2015.

Reclassification into FRA 2020 categories

National class	FAO FRA 2010 Category
Upland forest	Primary forest
Palm forest	Primary forest
Swamp forest	Primary forest
Mangrove forest	Mangroves
Atoll forest	Primary forest
Plantation forest	Planted forest
Dwarf forest	Primary forest
Secondary vegetation	Other naturally regenerating forest
Agroforest	Planted forest
Agroforest w/ coconuts	Planted forest
Coconut plantations	Planted forest



FRA categories	Forest area (1000 ha)									
	1990	2000	2010	2015	2016	2017	2018	2019	2020	
Naturally regenerating forest (a)	43.33	46.63	49.92	50.06	50.09	50.12	50.15	50.18	50.21	
Planted forest (b)	20.25	17.23	14.21	14.21	14.21	14.21	14.21	14.21	14.21	
Plantation forest	20.25	17.23	14.21	14.21	14.21	14.21	14.21	14.21	14.21	
...of which introduced species										
Other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total (a+b)	63.58	63.86	64.13	64.27	64.30	64.33	64.36	64.39	64.42	
Total forest area	63.58	63.86	64.13	64.27	64.30	64.33	64.36	64.39	64.42	

Comments

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest	39.58	43.97	48.37	48.37	48.37
Temporarily unstocked and/or recently regenerated					
Bamboos					
Mangroves	9.94	10.01	10.08	10.11	10.11
Rubber wood					

Comments

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)				
...of which afforestation				
...of which natural expansion				
Deforestation (b)				
Forest area net change (a-b)	0.03	0.03	0.03	0.03

Comments

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Reforestation				

Comments

1f Other land with tree cover

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)					
Tree orchards (b)					
Agroforestry (c)					
Trees in urban settings (d)					
Other (specify in comments) (e)					
Total (a+b+c+d+e)	–	–	–	–	–
Other land area	6.42	6.14	5.87	5.73	5.58

Comments

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

	References to sources of information	Variables	Years	Additional comments
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	2005-6	Data are collected on 0.067 ha plots spaced at approximately 3 km intervals across the forested landscape.
2	MacLean, C. D., C. D. Whitesell, T. G. Cole, and K. E. McDuffie. 1988. Timber Resources of Kosrae, Pohnpei, Truk, and Yap, Federated States of Micronesia. Resource Bulletin PSW-24, USDA Forest Service, Pacific Southwest Forest and Range Experiment Station, in cooperation with Pacific Northwest Forest and Range Experiment Station, Portland, OR, Berkeley, CA.	Timberland volume of commercial species	1983	Timberland area represents 44% of total forest land area.
3	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.	2003	N/A

National classification and definitions

-

Original data

FSM 1983 Volume (thousand m ³) of timber on timberland by state					
ForestType	Pohnpei	Kosrae	Chuuk	Yap	All States
<i>thousand cubic meters</i>					
Upland	2007	163		45	2215
Palm	248				248
Mangrove	403	119	5	71	598
Swamp	30	56			86
All Types	2688	338	5	116	3147

FSM 2006: Net volume (thousand m ³) of live trees # 12.5 cm d.b.h. on all forest land by state					
Forest type	Pohnpei	Kosrae	Chuuk	Yap	Total
<i>thousand cubic meters</i>					
Agroforest	294	372	845	99	1610

Lowland tropical rainforest	4183	2869	715	458	8226
Mangrove swamps	4592	199	25	56	4872
Montane rainforest	1599	0	0	0	1599
Total	10668	3441	1585	613	16307

Analysis and processing of national data

Estimation and forecasting

Calibration factor 2006 = (70000/65526) = 1.068278241

FSM 2006: Net volume (thousand m ³) of live trees # 12.5 cm d.b.h. on all forest land by state Calibrated by FAO area estimate					
Forest type	Pohnpei	Kosrae	Chuuk	Yap	Total
	<i>thousand cubic meters</i>				
Agroforest	314	398	903	106	1720
Lowland tropical rainforest	4469	3065	764	489	8787
Mangrove swamps	4905	213	26	60	5204
Montane rainforest	1708	0	0	0	1708
Total	11396	3676	1693	655	17420

The 1983 timber survey accounted for only the volume of industrial wood on land believed to be suitable for growing timber. That area represented about 44% of forest land area in FSM. The 2006 sample considered all forest land, agroforest, and mangrove, and all species.

Reclassification into FRA 2020 categories

-

FRA categories	Growing stock m ³ /ha (over bark)			
	1990	2000	2010	2015
Naturally regenerating forest				
Planted forest				
...of which plantation forest				
...of which other planted forest				
Forest	272.26	272.16	272.26	272.29
Other wooded land				

FRA categories	Total growing stock (million m ³ over bark)			
	1990	2000	2010	2015
Naturally regenerating forest				
Planted forest				
...of which plantation forest				
...of which other planted forest				
Forest	17.31	17.38	17.46	17.50
Other wooded land				

Comments

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Scientific name	Common name	Growing stock in forest (million m ³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#1 Ranked in terms of volume	<i>Sonneratia alba</i>	kwat, kotoh, folofol, abruk, sales			2.31		
#2 Ranked in terms of volume	<i>Exorrhiza ponapensis</i>	kotop			2.06		
#3 Ranked in terms of volume	<i>Camptosperma brevipetiolata</i>	thong, elak, ka, ramluw			1.39		
#4 Ranked in terms of volume	<i>Ficus prolixa</i>	aoa, konya, giliau, aow, au			1.27		
#5 Ranked in terms of volume	<i>Xylocarpus granatum</i>	brok, pwulok, ploek brok, tui, yamgur, punopun			1.05		
#6 Ranked in terms of volume	<i>Horsfieldia nunu</i>	N/A			0.85		
#7 Ranked in terms of volume	<i>Adenantha pavonina</i>	metkam, kulalis			0.79		
#8 Ranked in terms of volume	<i>Rhizophora apiculata</i>	aak, akapa, sakasrik			0.69		
#9 Ranked in terms of volume	<i>Artocarpus altilis</i>	mai, kuru, mos, sou, maouli, mai, breadfruit			0.61		
#10 Ranked in terms of volume	<i>Myristica insularis</i>	karara			0.59		
Remaining native tree species					5.92		

FRA categories	Scientific name	Common name	Growing stock in forest (million m ³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
Total volume of native tree species			-	-	17.53	-	-
Introduced tree species							
#1 Ranked in terms of volume							
#2 Ranked in terms of volume							
#3 Ranked in terms of volume							
#4 Ranked in terms of volume							
#5 Ranked in terms of volume							
Remaining introduced tree species							
Total volume of introduced tree species			-	-	-	-	-
Total growing stock			-	-	17.53	-	-

Comments

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

2005-6 stem biomass, FSM						
	Live		Dead		Total	
	Total	SE ¹	Total	SE	Total	SE
	<i>bone-dry tons</i> ²					
<i>Sonneratia alba</i>	1,248,488	488,565	7,400	6,334	1,255,887	490,776
<i>Exorrhiza ponapensis</i>	1,063,678	398,148	5,607	3,184	1,069,285	400,394
<i>Camposperma brevipetiolata</i>	723,996	280,558	3,952	2,664	727,948	280,943
<i>Ficus prolixa</i>	647,794	354,146	1,717	1,694	649,511	354,148
<i>Xylocarpus granatum</i>	541,174	237,464	11,193	6,303	552,367	243,001
<i>Horsfieldia nunu</i>	437,128	173,332	732	919	437,859	173,592
<i>Adenanthera pavonina</i>	413,357	276,509	6,268	4,314	419,625	280,030
<i>Rhizophora apiculata</i>	353,775	247,794	4,516	3,866	358,292	251,606
<i>Artocarpus altilis</i>	324,910	77,247	1,245	1,563	326,155	77,360
<i>Myristica insularis</i>	310,111	126,880	13,776	9,763	323,887	131,550
Remaining	3,654,099	399,075	105,783	31,158	3,759,882	406,186
Total	9,718,509	1,061,741	162,189	34,266	9,880,698	1,066,003
	1	2				
SE = Standard error; Original units are in bone-dry U.S. tons, NOT metric tonnes.						

Analysis and processing of national data

Estimation and forecasting

The 1983 timber survey accounted for only the volume of industrial wood on land believed to be suitable for growing timber. That area represented about 44% of forest land area in FSM. The 2006 sample considered all forest land, agroforest, and mangrove, and all species.

Biomass stock

Calibration factor 2006 = (70000/65526) = 1.068278241

1 U.S. ton = 0.90718474 metric tons

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).

2005-6 stem biomass, FSM calibrated by FAOSTAT area.

	Live	Dead	All
	Total	Total	Total
<i>Sonneratia alba</i>	1.210	0.007	1.217
<i>Exorrhiza ponapensis</i>	1.031	0.005	1.036
<i>Camposperma brevipetiolata</i>	0.702	0.004	0.705
<i>Ficus prolixa</i>	0.628	0.002	0.629
<i>Xylocarpus granatum</i>	0.524	0.011	0.535
<i>Horsfieldia nunu</i>	0.424	0.001	0.424
<i>Adenanthera pavonina</i>	0.401	0.006	0.407
<i>Rhizophora apiculata</i>	0.343	0.004	0.347
<i>Artocarpus altilis</i>	0.315	0.001	0.316

<i>Myristica insularis</i>	0.301	0.013	0.314
Remaining	3.541	0.103	3.644
Total	9.418	0.157	9.576

Reclassification into FRA 2020 categories

-

FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	500.47	500.31	500.39	500.39					
Below-ground biomass	135.11	135.14	135.04	134.90					
Dead wood	2.52	2.51	2.49	2.49					

Comments

	Total		Total		Total
	<i>million metric tons</i>				
<i>Sonneratia alba</i>	0.605		0.004		0.609
<i>Exorrhiza ponapensis</i>	0.515		0.003		0.518
<i>Camptosperma brevipetiolata</i>	0.351		0.002		0.353
<i>Ficus prolixa</i>	0.314		0.001		0.315
<i>Xylocarpus granatum</i>	0.262		0.005		0.268
<i>Horsfieldia nunu</i>	0.212		0.000		0.212
<i>Adenantha pavonina</i>	0.200		0.003		0.203
<i>Rhizophora apiculata</i>	0.171		0.002		0.174
<i>Artocarpus altilis</i>	0.157		0.001		0.158
<i>Myristica insularis</i>	0.150		0.007		0.157
Remaining	1.771		0.051		1.822
Total	4.709		0.079		4.788

Reclassification into FRA 2020 categories

-

FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	250.24	250.23	250.12	250.04					
Carbon in below-ground biomass	67.63	67.49	67.52	67.53					
Carbon in dead wood	1.26	1.25	1.25	1.24					
Carbon in litter									
Soil carbon									

Soil depth (cm) used for soil carbon estimates	
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Comments

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)	0.00	0.00	0.00	0.00	0.00
Protection of soil and water (b)	0.00	0.00	0.00	0.00	0.00
Conservation of biodiversity (c)	0.00	0.00	0.00	0.00	0.00
Social Services (d)	0.00	0.00	0.00	0.00	0.00
Multiple use (e)	63.58	63.86	64.13	64.27	64.42
Other (specify in comments) (f)	0.00	0.00	0.00	0.00	0.00
None/unknown (g)	0.00	0.00	0.00	0.00	0.00
Total forest area	63.58	63.86	64.13	64.27	64.42

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production					
Protection of soil and water					
Conservation of biodiversity					
Social Services					
Other (specify in comments)					

Comments

3b Forest area within protected areas and forest area with long-term management plans

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas									
Forest area with long-term forest management plan									
...of which in protected areas									

Comments

4 Forest ownership and management rights

4a Forest ownership

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)				
...of which owned by individuals				
...of which owned by private business entities and institutions				
...of which owned by local, tribal and indigenous communities				
Public ownership (b)				
Unknown/other (specify in comments) (c)	-	-	-	-
Total forest area	63.58	63.86	64.13	64.27

Comments

4b Holder of management rights of public forests

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)				
Individuals (b)				
Private business entities and institutions (c)				
Local, tribal and indigenous communities (d)				
Unknown/other (specify in comments) (e)	-	-	-	-
Total public ownership	-	-	-	-

Comments

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Insects (a)																		
Diseases (b)																		
Severe weather events (c)																		
Other (specify in comments) (d)																		
Total (a+b+c+d)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total forest area	63.86	-	-	-	-	-	64.02	-	-	-	64.13	-	-	-	-	64.27	64.30	64.33

Comments

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total land area affected by fire																		
...of which on forest																		

Comments

5c Degraded forest

Does your country monitor area of degraded forest		No
If "yes"	What is the national definition of "Degraded forest"?	
	Describe the monitoring process and results	

Comments

6 Forest policy and legislation

6a Policies, Legislation and national platform for stakeholder participation in forest policy

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Indicate the existence of	Boolean (Yes/No)	
	National	Sub-national
Policies supporting SFM		
Legislations and regulations supporting SFM		
Platform that promotes or allows for stakeholder participation in forest policy development		
Traceability system(s) for wood products		

Comments

6b Area of permanent forest estate

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Forest area (1000 ha)					
	Applicable?	1990	2000	2010	2015	2020
Area of permanent forest estate						

Comments

7 Employment, education and NWFP

7a Employment in forestry and logging

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Full-time equivalents (1000 FTE)											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Employment in forestry and logging												
...of which silviculture and other forestry activities												
...of which logging												
...of which gathering of non wood forest products												
...of which support services to forestry												

Comments

7b Graduation of students in forest-related education

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Number of graduated students											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Doctoral degree												
Master's degree												
Bachelor's degree												
Technician certificate / diploma												
Total												

Comments

7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1						
#2						
#3						
#4						
#5						
#6						
#7						
#8						
#9						
#10						
All other plant products						
All other animal products						
Total					-	

Name of currency	
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Comments

8 Sustainable Development Goal 15

8a Sustainable Development Goal 15

SDG Indicator 15.1.1 Forest area as proportion of total land area 2015

Indicator	Percent							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area as proportion of total land area 2015	91.23	91.61	91.81	91.86	91.90	91.94	91.99	92.03

Name of agency responsible	
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SDG Indicator 15.2.1 Progress towards sustainable forest management

Sub-Indicator 1	Percent						
	2000-2010	2010-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Forest area annual net change rate	0.04	0.04	0.05	0.05	0.05	0.05	0.05

Name of agency responsible	
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Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	500.31	500.39	500.39	-	-	-	-	-

Name of agency responsible	
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Sub-Indicator 3	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area located within legally established protected areas	-	-	-	-	-	-	-	-

Name of agency responsible

Sub-Indicator 4	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area under long-term forest management plan	-	-	-	-	-	-	-	-

Name of agency responsible

Sub-Indicator 5	Forest area (1000 ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area under independently verified forest management certification schemes	0.00	0.00	0.00	0.00	0.00	0.00	-	-