

GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

Brunei Darussalam

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?	27
5. How much forest area is managed for protection of soil and water and ecosystem services?	34
6. How much forest area is protected and designated for the conservation of biodiversity and how has it changed over time?	39
7. What is the area of forest affected by woody invasive species?	42
8. How much forest area is damaged each year?	45
9. What is the forest area with reduced canopy cover?	49
10. What forest policy and regulatory framework exists to support implementation of sustainable forest management SFM?	50
11. Is there a national platform that promotes stakeholder participation in forest policy development?	52
12. What is the forest area intended to be in permanent forest land use and how has it changed over time?	53
13. How does your country measure and report progress towards SFM at the national level?	56
14. What is the area of forest under a forest management plan and how is this monitored?	58
15. How are stakeholders involved in the management decision making for publicly owned forests?	60
16. What is the area of forest under an independently verified forest certification scheme?	61
17. How much money do governments collect from and spend on forests?	63
18. Who owns and manages the forests and how has this changed?	65
19. How many people are directly employed in forestry?	69
20. What is the contribution of forestry to Gross Domestic Product (GDP)?	72
21. What is forest area likely to be in the future	73

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

Introductory Text

Place an introductory text on the content of this report

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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
1	Anderson & Marsden, 1984. Forest Resources & Strategic Planning Study	Vegetation type Forest cover	1979	Both aerial and ground surveys were conducted.

2	JICA, 1994. The Development Survey on the Forest Resources in Brunei Darussalam	Stock volume; Soils and forest conditions	1992 - 1994	Study was conducted within designated national park and intended for saw timber plantation areas
3	DOF, 1996. An Introduction to Forestry in Brunei Darussalam. Department of Forestry, Ministry of Industry and Primary Resources, Brunei Darussalam.	Overview of forestry Sector	1996	Provides good descriptions of National classes based on Anderson & Marsden, 1984.
4	Annual log production data	Log production	1997 - 2008	Provides good estimates of forest areas subjected to harvesting and land-use conversion

1.2.2 Classification and definitions

National class	Definition
Mangrove Forest	Occurs exclusively on saline soils subject to tidal influence and can usually be clearly differentiated from peat swamp forest which it usually borders.
Freshwater Swamp Forest	Levee alluvium (empran). Located on the fresh water riverside and generally with higher canopy trees.
Peat Swamp Forest	Generally dominated by Alan (<i>Shorea albida</i>), Terentang (<i>Camposperma coriacea</i>), Keruntum (<i>Combretocarpus rotundatus</i>), and Kapur paya (<i>Dryobalanop rappa</i>) growing on very thick peat soils.
Kerangas	Heath forest or dryland site with soil conditions very poor and sandy. Trees usually have medium crown.
Mixed Dipterocarps	Multi-storied high forest with uneven canopy. Forest mainly made up of a mixture of dipterocarps species such as highly commercial important <i>Shorea</i> and dipterocarpus species.
Montane Forest	Found only on higher altitude in Temburong District with contour 762m and higher.
Mixtures	Forests compose of a mixture of forest types which their boundaries cannot be determined
Plantations	Systematically planted trees for a specific end product such as for sawn timber.
Secondary	Very young forest not more than 50 yrs of age, regenerated naturally or assisted after partial or complete deforestation.
Primary Forests	Undisturbed forests or forests with slightly undisturbed by unnoticeable disturbances that do not cause change in forest ecosystem.
Disturbed Forests	Exploited forests area or logged-over forests with noticeable changes in terms of composition, structure, ecosystem etc..

1.2.3 Original data

National Categories	Extent in 000 ha					
	1979			1996		
	Primary	Disturbed	Total	Primary	Disturbed	Total
Mangrove	18.418		18.418	10.798	7.620	18.418
Freshwater Swamp forest	12.668		12.668	12.668		12.668
Peat Swamp forest	90.884	12.821	103.705	87.267	16.438	103.705
Kerangas	3.455	4.153	7.608	1.517	5.041	6.558
Mixed Dipeterocarpus	192.575	31.179	223.754	164.775	58.979	223.754
Montane	7.196		7.196	7.196		7.196
Mixtures	15.988	36.683	52.671	13.988	38.683	52.671
Plantations		0.076	0.076		2.360	2.360
Secondary/ others		42.950	42.950		20.788	20.788
Total Forests	341.184	127.862	469.046	298.209	149.909	448.118

Abstract

National Categories	Extent of Forests in 000 ha	
	1979	1996

Primary Forests	341.184	298.209
Disturbed forest	127.862	149.909
Other land	57.486	78.414
Inland water	50.000	50.000
Total Area of Country	576.532	576.532

1.3 Analysis and processing of national data

1.3.1 Adjustment

Forest area	
Source	Total Area (1000 hectares)
National	577
FAOSTAT	577

The figures from the two sources are the same hence the calibration step is not needed.

1.3.2 Estimation and forecasting

Forest area				
The figures for 1990, 2000, 2005 and 2010 for primary and disturbed forests have been estimated and forecasted using linear intra-polation and extrapolation trend method of 1979-1996 figures. The Other land is estimated as the difference between total land area and primary and disturbed forests.				
	1990	2000	2005	2010
Primary Forests	313.38	288.10	275.46	262.82
Disturbed forest	142.13	155.10	161.58	168.07





1.3.3 Reclassification

FRA Categories	National Classes		
	Primary	Disturbed	Other land
Forest	100%	70%	
Other wooded land		30%	
Other land			100%
...of which with tree cover ¹⁾			
TOTAL	100%	100%	100%

	1990	2000	2005	2010
Forest	413	397	389	380
Other wooded land	43	47	48	50

1.4 Data

Table 1a

Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
	Forest	413	397	389	380	380
	Other wooded land	43	47	48	50	50
	Other land	71	83	90	97	97
	... of which with tree cover	N/A	N/A	N/A	N/A	N/A

CFRQ	Inland water bodies	50	50	50	50	50
	TOTAL	577.00	577.00	577.00	577.00	577.00

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
CFRQ	Forest expansion	N/A	0	0	0	N/A	N/A	N/A	N/A
CFRQ	... of which afforestation	N/A	0	0	0	N/A	N/A	N/A	N/A
CFRQ	... of which natural expansion of forest	N/A	0	0	0	N/A	N/A	N/A	N/A
CFRQ	Deforestation	N/A	16	8	9	N/A	N/A	N/A	N/A
CFRQ	... of which human induced	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CFRQ	Reforestation	0.4	0.4	0.4	0.4	N/A	N/A	N/A	N/A
CFRQ	... of which artificial	0.4	0.4	0.4	0.4	N/A	N/A	N/A	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	Tier 1	Tier 1
Deforestation	Tier 1	Tier 1
Reforestation	Tier 1	Tier 1

Tier criteria

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

1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends

Forest	Forest areas subjected to timber harvesting operations remains under the forest category as provided for by the definition of forest. The implementation of the Brunei Selective Felling System in these areas ensures the integrity of the residual stand and sufficient forest canopy cover.	The decreasing trend of the forest areas presented can be attributed to land-use conversion within the Stateland to support the current initiatives of the Government in infrastructure developments to increase agricultural production, industrial, and resettlement areas.
Other wooded land	Other wooded lands represent degraded areas with naturally poor conditions such as sandy and swampy areas.	N/A
Other land	N/A	N/A
Other land with tree cover	Developed areas in the country such as commercial, residential, and industrial sites, have significant tree cover. However, remains to be undefined in view of lack of data.	N/A
Inland water bodies	Inland water bodies in the country are estimated to be around 50,000 hectares referring to major rivers, lake, and water reservoirs. Some parts of these areas are believed to be overlapping with the other land category.	Maintained the same figure (estimates) pending appropriate ground verification.
Forest expansion	N/A	N/A
Deforestation	N/A	N/A
Reforestation	Reforestation activities refer to replanting of trees to rehabilitate small portions or patches of land inside forested areas. The provided figure represents an aggregate estimate of the rehabilitation activities within the country. Tree planting activities by the communities are conducted inside other land.	N/A

Other general comments to the table

The Forestry Department of Brunei Darussalam had conducted 2 studies on the national forest resources. Maps produced as a result of the studies were: Forest Type map1 and map2 (1:50,000 and 1:200,000); soil map and vegetation map (1:20,000). Since then, no further follow-up study is conducted and therefore, the data provided in FRA is mainly based on these studies and relevant annual forestry statistics.

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 outside its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).
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
1	Anderson & Marsden. 1984. Brunei Forest Resources and Strategic Planning Study.	Area by Functions	1984	N/A
2	DOFB. 1989. National Forest Policy. Forestry Department. Ministry of Industry and Primary Resources.	Functional Forest types	1990	N/A

3	DOFB. 1996. An Introduction to Forestry in Brunei Darussalam. Editor: Virgilio J. A. Ramos. Department of Forestry. Ministry of Industry and Primary Resources. Brunei Darussalam.	Area by functions	1996	N/A
4	Forest Plantation Statistics	Forest Plantation Establishment	N/A	N/A

2.2.2 Classification and definitions

National class	Definition
N/A	Not available
N/A	N/A
N/A	N/A
N/A	N/A

2.2.3 Original data

Please refer to 1.2.3

2.3 Analysis and processing of national data

2.3.1 Adjustment

2.3.2 Estimation and forecasting

1.1.1
(In '000 hectares)

Year	National Categories				Total Forests
	Primary Forests	Disturbed Forests			
		Secondary	Plantation	Total	
1979*	341.184	127.862	-	127.862	469.046
1996*	298.209	149.909	0.668	149.909	448.118
1997	295.109	150.940	0.668	151.608	446.716
1998	292.371	151.708	1.011	152.712	445.090
1999	289.993	152.354	1.305	153.659	443.651
2000	287.935	153.695	1.305	155.000	442.936
2001	285.635	154.883	1.390	156.273	441.907
2002	283.544	155.953	1.525	157.478	441.022
2003	281.418	157.024	1.615	158.640	440.058
2004	278.778	158.119	1.742	159.860	438.639
2005	276.252	159.160	1.955	161.114	437.366
2006	274.179	159.874	2.251	162.125	436.304
2007	271.864	160.510	2.443	162.953	434.816
2008	269.350	161.065	2.680	163.745	433.095

*Original data

Data for 1996 was used to estimate planted forests for 1990.

2.3.3 Reclassification

National Category	Percentage reclassification in FRA Categories		
	Primary forests	Other naturally regenerated forests	Planted forests

Primary Forests	100		
Disturbed Forests			
Secondary		100	
Plantation			100
Total	100%	100%	100%

2.4 Data

Table 2a







Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Primary forest	313	288	275	263	263
	Other naturally regenerated forest	99	108	112	114	114
	... 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	0.668	1.305	1.955	2.68	2.68
	... of which of introduced species	N/A	0.494	0.494	0.494	0.494
TOTAL		412.67	397.30	388.96	379.68	379.68

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)	18.418	18.418	18.418	18.418	18.418
... 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 1	Tier 1
Other naturally regenerated forest	Tier 1	Tier 1
Planted forest	Tier 1	Tier 1
Mangroves	Tier 1	Tier 1

Tier Criteria

Category	Tier for status	Tier for reported trend
Primary forest/Other naturally regenerated forest/Planted forest	<p>Tier 3 : 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>Tier 2 : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years) Tier 1 : Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other</p>

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	N/A	N/A
Other naturally regenerating forest	Secondary forest areas within the forest reserves are treated with enrichment planting using indigenous tree species.	N/A
Planted forest	Refers to the conversion of natural forests into dipterocarp plantation using strip planting method. Forest plantations establishment assure 50% natural forest cover at all times. The use of introduced fast growing species is no longer practiced.	It is assumed that the forest plantation establishment to be in an increasing trend in order to secure the local supply of timber in the future.
Mangroves	Some of the mangrove forests are subjected to selective harvesting. However, such harvesting practices does not change the category of the forest based on FRA definitions.	N/A

Other general comments to the table

N/A

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
1	Anderson & Marsden. 1984. Brunei Forest Resources and Strategic Planning Study.	Area by Functions	1984	N/A
2	FRA 2010 Guidelines	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

3.2.2 Classification and definitions

National class	Definition
Productive plantation	Plantation designated for the production of sawn timber or any other related end uses or value-added products.
Protective plantation	Plantation designated for the rehabilitation of degraded area, as to prevent further deterioration of ecological conditions of the area that complement the functional protection forest.
Net Industrial Stemwood Volume (NIS)	Section of the stem which is regarded as commercially utilizable in solid form. The sections of the stem, considered unsuitable for peeler or sawlog, are excluded. The NIS volume refers to sound, form-defect free timber above specified dimension limits, which has an average sound shell exceeding 13 cms.
Grade 1 trees	Trees yielding predominantly peeler logs
Grade 2 trees	Trees yielding predominantly low grade or better saw logs

3.2.3 Original data

Growing stock

There has been no complete National Forest Inventory although forest inventory was done as early as in 1934. The latest inventory is by Anderson (Anderson, 1984), which uses 1981/82 information for area their filed enumeration results for volume estimations. They survey most of the primary forest in “Mixed Dipterocarp Forest” and “Peat Swamp Forest”, which are the main constituent Brunei forest resources. They estimated only net industrial stem wood (NIS) volume of grade 1 and grade 2 trees. Following is the summary information.

Total area surveyed (in 000 ha)	202
Total NIS volume in million cubic meters	17.7

This leads to an average NIS volume is about 87.62 cubic meters per hectare.

It may be mentioned that a study was conducted in 1994 by JICA Inventory on group of species only within intended forest plantation site (state land). The study does not mention volume by individual species. Based on this study, the undisturbed Alan Forest (stratum 3.3, 3.5) is the highest volume, ranging from 528 to 585 cu. m per hectare and followed by undisturbed Peat Swamp (stratum 3.1, 3.2) and Mixed Dipterocarp Forest (stratum 5) from 331 to 448 cu. m per hectare.

3.3 Analysis and processing of national data

3.3.1 Adjustment

Growing stock

Not needed since are figures from Question1 are being used for this question.

3.3.2 Estimation and forecasting

Growing stock

The average NIS volume of 87.62 cubic meters per hectare will be used as the basic figure to estimate the total growing stock. It is further assumed that the average NIS volume represents only 60% of the total volume after considering the natural defect and internal decay of the logs. Further, the total NIS “gross” volume refers to commercial tree species that is estimated to be 65% of the total tree species as revealed by the Andersons report.

The estimated gross NIS volume per hectare is 146.03 cu. m while the non-commercial volume is estimated to be around 78.63 cu. m per hectare. In total, the estimated growing stock of the country’s primary forest is 224.66 cu. m per hectare.

Disturbed forests under the “forest” category are estimated to have a growing stock of 78.63 cu. m per hectare.

On the other hand, the volume of growing stock under the “other wooded land” category is estimated to be 25.75 cu m per hectare.

Year	FORESTS						TOTAL GS (000cu.m)
	Primary			Disturbed			
	Area (‘000 ha)	GS/ha (cu.m)	Total GS (000 cu.m)	Area (‘000 ha)	GS/ha (cu.m)	Total GS (000 cu.m)	
1990	313.38	224.66	70,403	142.13	-	11,176	81,579
2000	288.1	224.66	64,724	155.1	78.63	12,195	76,919
2005	275.4	224.66	61,884	161.5	78.63	12,705	74,589
2010	262.82	224.66	59,045	168.07	78.63	13,215	72,260

Year	OTHER WOODED LANDS		
	Area ('000 ha)	GS/ha (cu.m)	Total GS (in Million cu.m)
1990	43	25.75	1.11
2000	46.5	25.75	1.20
2005	48.3	25.75	1.24
2010	50	25.75	1.29

Biomass stock

There is no available standard estimate for basic densities and biomass expansion factor in the country. Conversion factors used are derived from the 2006 IPCC Guidelines.

For Humid tropical ecological

Above Ground Biomass

	Unit	Forests				Other Wooded Lands			
		1990	2000	2005	2010	1990	2000	2005	2010
Growing Stock	Million Cu.m.	81.58	76.92	74.59	72.26	1.11	1.20	1.24	1.29
Basic Density	Ton/ cu.m.	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Biomass Expansion Factor		3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40
Above Ground Biomass	Million Tons	138.68	130.76	126.80	122.84	1.89	2.04	2.11	2.20

Below Ground Biomass

	Unit	Forests				Other Wooded Lands			
		1990	2000	2005	2010	1990	2000	2005	2010

Above Ground Biomass	Million Tons	138.68	130.76	126.80	122.84	1.89	2.04	2.11	2.20
Root Shoot Ratio		0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Below Ground Biomass	Million Tons	33.28	31.38	30.43	29.48	0.45	0.49	0.51	0.53

Carbon stock

The carbon estimation factors used to estimate the carbon content of Brunei forest are based on the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

For above ground biomass, below ground biomass, and dead wood biomass, the carbon fraction of 0.47 was used. Carbon estimates used for forest litter is 2.1 tons per hectare and soil carbon at 52 tons per hectare.

3.3.3 Reclassification

3.4 Data

Table 3a




Category		Growing stock volume (million m ³ over bark)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Total growing stock	81.58	76.92	74.59	72.26	73	1.11	1.2	1.24	1.29	1.3
	... of which coniferous	0	0	0	0	N/A	0	0	0	0	N/A
	... of which broadleaved	81.58	76.92	74.59	72.26	73	1.11	1.2	1.24	1.26	1.3

Table 3b

Category/Species name	Growing stock in forest (million cubic meters)
-----------------------	--

Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	Shorea parviflora	Meranti sarang punai	N/A	N/A	N/A	N/A
2 nd	Dryobalanops beccarii	Kapur bukit	N/A	N/A	N/A	N/A
3 rd	Shorea leavis	Kumus	N/A	N/A	N/A	N/A
4 th	Dryobalanops lanceolata	Kapur paji	N/A	N/A	N/A	N/A
5 th	Dipterocarpus acutangulus	Keruing beludu	N/A	N/A	N/A	N/A
6 th	Shorea argentifolia	Meranti binatang	N/A	N/A	N/A	N/A
7 th	Koompassia malaccensis	Kempas	N/A	N/A	N/A	N/A
8 th	Dipterocarpus globosus	Keruing buah bulat	N/A	N/A	N/A	N/A
9 th	Shorea macroptera	Meranti melantai	N/A	N/A	N/A	N/A
10 th	Shorea mecistopteryx	Meranti kawang burung	N/A	N/A	N/A	N/A
Remaining			N/A	N/A	N/A	N/A
TOTAL			.00	.00	.00	.00

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)	n.a.	N/A
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	20-30 cm	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 ³ per hectare and year)
	Forest



		1990	2000	2005	2010	2015
CFRQ	Net annual increment	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which coniferous	N/A	N/A	N/A	N/A	N/A
CFRQ	... 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
CFRQ	Above ground biomass	138.68	130.76	126.8	122.84	123	1.89	2.04	2.11	2.2	2.2
CFRQ	Below ground biomass	33.28	31.38	30.43	29.48	30	0.45	0.49	0.51	0.53	0.53
CFRQ	Dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		171.96	162.14	157.23	152.32	153.00	2.34	2.53	2.62	2.73	2.73

Table 3e

Category		Carbon (Million metric tonnes)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
CFRQ	Carbon in above ground biomass	65	61	60	58	58	0.89	0.96	0.99	1.03	1.1
CFRQ	Carbon in below ground biomass	15	15	14	14	14	0.21	0.23	0.24	0.25	0.26
CFRQ	<i>Subtotal Living biomass</i>	81	76	74	72	72	1.1	1.19	1.23	1.28	1.3
CFRQ	Carbon in dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CFRQ	Carbon in litter	1	0.8	0.8	0.8	0.8	0.1	0.1	0.1	0.1	0.1

	<i>Subtotal Dead wood and litter</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Soil carbon	24	21	20	20	20	2.2	2.4	2.5	2.5	2.5
TOTAL		105.00	97.80	94.80	92.80	92.80	3.40	3.69	3.83	3.88	3.96

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	N/A	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	Tier 1	Tier 1

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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Carbon in above ground biomass • Carbon in below ground biomass • Carbon in dead wood and litter • Soil carbon 	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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : 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	N/A	N/A
Below-ground biomass	N/A	N/A
Dead wood	N/A	N/A
Carbon in above-ground biomass	N/A	N/A
Carbon in below-ground biomass	N/A	N/A
Carbon in dead wood	N/A	N/A
Carbon in litter	N/A	N/A
Soil carbon	N/A	N/A

Other general comments to the table

N/A

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	Anderson & Marsden. 1984. Brunei Forest Resources and Strategic Planning Study.	Area by Functions	1984	N/A
2	DOFB. 1989. National Forest Policy. Forestry Department. Ministry of Industry and Primary Resources.	Functional Forest types	1990	N/A
3	DOFB. 1996. An Introduction to Forestry in Brunei Darussalam. Editor: Virgilio J. A. Ramos. Department of Forestry. Ministry of Industry and Primary Resources. Brunei Darussalam.	Area by functions	1996	N/A
4	N/A	N/A	N/A	N/A

4.2.2 Classification and definitions

National class	Definition
Production forest	Natural and man-made forests, including related non-timber plantations, for the principal purpose of supplying on sustained and economically competitive basis, the forest produce requirements of the country.
N/A	N/A
N/A	N/A
N/A	N/A

4.2.3 Original data

The allocation of national's functional forest type is based on the National Forest Policy and the report by Anderson and Marsden in 1984.

National Category	Area in "000" ha			
	Primary Undisturbed	Disturbed	Non-Forest	Total
Conservation Forests	31.684			31.684
Protection Forests	18.070	0.477	0.015	18.562
National Parks	48.854			48.854
Parks and Recreation Forests	4.445			4.445
Production Forests	218.650			218.650
Total	321.703	0.477	0.015	322.195

(Source: Anderson and Marsden, 1984)

The following is basically an update of the above information (DOFB, 1996).

National Category	Area in 000 ha		
	Gazetted Before 1996	Proposed	Total
Conservation Forests	28.511	3.173	31.684
Protection Forests	18.562		18.562
National Parks	46.210	2.644	48.854
Parks and Recreation Forests	4.211	0.234	4.445
Production Forests	138.026	80.624	218.650
Total	235.520	86.675	322.195

4.3 Analysis and processing of national data

4.3.1 Adjustment

4.3.2 Estimation and forecasting

The National Forest Policy allocated 55% of the country's total land area as the national forest estate under the direct management of the Forestry Department. The figures provided for the year 1990 are actual area gazetted for the purpose and in order to comply with the mandate of the National Forest Policy, additional forest areas are proposed for gazettement in order to meet the 55% target.

For year 2000, 2005, and 2010, the proposed areas for gazettement are already incorporated under the national categories since these areas are already under the direct jurisdiction of the Forestry Department. Further, the current vegetative composition and forest cover of the subject areas are within the definition of "Forests". It is also worth to note that there are significant forest areas outside the national forest estate.

National Categories	Area in '000 hectares			
	1990	2000	2005	2010


Conservation forests	28.511	31.684	31.684	31.684
Protection forests	18.562	18.562	18.562	18.562
National parks	46.210	48.854	48.854	48.854
Parks and recreation forests	4.211	4.445	4.445	4.445
Production forests	138.026	218.650	218.650	218.650
Total	235.520	322.195	322.195	322.195

4.3.3 Reclassification

National Category	Percentage reclassification in FRA Categories			
	Production	Protection	Conservation	Social Service
Conservation Forests			100	
Protection Forests		100		
National Parks			100	
Parks and Recreation Forests				100
Production Forests	100			
Total	100%	100%	100%	100%

4.4 Data

Table 4a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	138	219	219	219	219

	Multiple use forest	0	0	0	0	0
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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	N/A

Category
Plant products / raw material
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
Animal products / raw material
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 ³ 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	Tier 1	Tier 1
Multiple use forest	N/A	Tier 1

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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	N/A	The implementation of the Brunei Selective Felling System ensures the integrity of the residual forest composition during harvesting operations therefore maintain its category as forest.
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

N/A

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

5.2.3 Original data

See 4.2.3.

5.3 Analysis and processing of national data

5.3.1 Adjustment

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5.3.2 Estimation and forecasting


See 4.3.2







5.3.3 Reclassification

See 4.3.3.

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

Other

N/A

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
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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Cultural or spiritual values • Public recreation • Spiritual or cultural services • Other 	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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : 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
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Other general comments to the table
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N/A

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	Anderson & Marsden. 1984. Brunei Forest Resources and Strategic Planning Study.	Area by Functions	1984	N/A
2	DOFB. 1989. National Forest Policy. Forestry Department. Ministry of Industry and Primary Resources.	Functional Forest types	1990	N/A
3	DOFB. 1996. An Introduction to Forestry in Brunei Darussalam. Editor: Virgilio J. A. Ramos. Department of Forestry. Ministry of Industry and Primary Resources. Brunei Darussalam.	Area by functions	1996	N/A
4	N/A	N/A	N/A	N/A

6.2.2 Classification and definitions

National class	Definition
Conservation forest	Undisturbed forests for the purposes of preserving in perpetuity the wilderness, flora and fauna, and other elements of the ecosystem for scientific, educational, and other special related purposes.
N/A	N/A
N/A	N/A

N/A	N/A
-----	-----

6.2.3 Original data

See 4.2.3.

6.3 Analysis and processing of national data

6.3.1 Adjustment

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6.3.2 Estimation and forecasting



See 4.3.2.

6.3.3 Reclassification

See 4.3.3.

6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Conservation of biodiversity	75	81	81	81	81
	Forest area within protected areas	19	19	19	19	19

Tiers

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

Tier criteria

Category	Tier for status	Tier for reported trend
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<ul style="list-style-type: none"> • Conservation of biodiversity • Forests within protected areas 	<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>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other</p>
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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	N/A	N/A

Other general comments to the table
N/A

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

7.2.3 Original data

--

7.3 Analysis and processing of national data

7.3.1 Adjustment

--

7.3.2 Estimation and forecasting

--

7.3.3 Reclassification

--

7.4 Data

Table 7

Scientific name of woody invasive species	Forest area affected (000 ha)	
	2005	2010
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
Total	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Invasive species	N/A	N/A

Tier Criteria

Category	Tier for status	Tier for reported trend
----------	-----------------	-------------------------

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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : 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
N/A	N/A
N/A	N/A
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

8.3.2 Estimation and forecasting

8.3.3 Reclassification

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"> • Insects • Diseases • Severe weather events 	N/A	N/A

Tier criteria

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

Other general comments to the table

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	Tier 3 : Remote sensing with ground truthing and/or Landsat imagery Tier 2 : Remote sensing using Modis (using pre-filled data provided by FAO) Tier 1 : Expert opinion

Comments

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

Other general comments

--

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
N/A	N/A
N/A	N/A
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				
... of which, in <u>publicly</u> owned forests				
... of which, in <u>privately</u> owned forests				
Legislation and regulations supporting sustainable forest management				
... of which, in <u>publicly</u> owned forests				
... of which, in <u>privately</u> owned forests				

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?

11.3 Comments

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

Other general comments

--

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	Anderson & Marsden. 1984. Brunei Forest Resources and Strategic Planning Study.	Area by Functions	1984	N/A
2	DOFB. 1989. National Forest Policy. Forestry Department. Ministry of Industry and Primary Resources.	Functional Forest types	1990	N/A
3	DOFB. 1996. An Introduction to Forestry in Brunei Darussalam. Editor: Virgilio J. A. Ramos. Department of Forestry. Ministry of Industry and Primary Resources. Brunei Darussalam.	Area by functions	1996	N/A
4	N/A	N/A	N/A	N/A

12.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A
N/A	N/A

N/A	N/A
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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	
	... of which permanent forest estate	322

Tiers

Category	Tier for status
Forest area intended to be in permanent forest land use	Tier 1
Permanent forest estate	Tier 1

Tier Criteria

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

Other general comments

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

Table 13b

Type of forest reporting used at national scale	Check boxes that apply
1 Criteria and Indicators reporting	
2 Periodic national state of the forest report	
3 Other (please document)	
4 None	

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

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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	

2 High conservation value forest delineation	
3 Social considerations community involvement	

Table 14c

Percent of area under forest management plan that is monitored annually	N/A
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Tiers

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

Tier criteria

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

14.4 Comments

Category	Comments
Forest area with management plan	N/A
N/A	N/A
N/A	N/A

Other general comments

--

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	
2. Operations phase	
3. Review of operations	

Tiers

Category	Tier for status
Type of stakeholder inputs	N/A

Tier criteria

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

15.2 Comments

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

Other general comments

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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
International 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
Domestic 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
International forest management certification	N/A
Domestic 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"> • <u>Goods</u> : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products. • <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.
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	678.26	833.37	N/A
Public expenditure on forestry	9559.04	10948.35	N/A
	2000	2005	2010
Name of Local Currency	N/A	N/A	N/A

17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	Revenues collected are from R26001 and R26008.
Public expenditure on forestry	Expenditure data are derived from the Annual Budget, National Development Project and Suspense Account . 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	National Forestry Policy	Forest ownership, administration and management responsibilities	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
N/A	N/A
N/A	N/A
N/A	N/A

18.2.3 Original data

All forests as provided for under Question 1 are government owned. Although there are trees planted by private individual, the same remains under the jurisdiction of the Forestry Department. However, most of these trees can be found under the “Other land” category.

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
	Public ownership	413	397	389	N/A
	... of which owned by the state at national scale	N/A	N/A	N/A	N/A
	... of which owned by the state at the sub-national government scale	N/A	N/A	N/A	N/A
	Private ownership	0	0	0	N/A
	... of which owned by individuals	0	0	0	N/A
	... of which owned by private business entities and institutions	0	0	0	N/A
	... of which owned by local, tribal and indigenous communities	0	0	0	N/A
	Unknown ownership	0	0	0	N/A
TOTAL		413.00	397.00	389.00	.00

Tiers

Category	Tier for status	Tier for reported trend
Public ownership	Tier 1	Tier 1
Private ownership	Tier 1	Tier 1
Unknown ownership	N/A	Tier 1

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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Public Administration	413	397	389	N/A
Individuals	0	0	0	N/A
Private companies	0	0	0	N/A
Communities	0	0	0	N/A
Other	0	0	0	N/A
TOTAL	413.00	397.00	389.00	.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	Forest and forest resources within forest reserves, statelands, and private lands are under the direct jurisdiction of the Forestry Department.	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	Contractors – Local Companies	2004	The data quoted is from the Strategic booklet published by the Forestry Department.	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	Not available
N/A	N/A
N/A	N/A
N/A	N/A

19.2.3 Original data

The data has been collected from the number of contractors registered in the Forestry Department involved in forestry activities. The Employment for the category under primary production of goods includes forestry staffs directly involved in the primary production and private sectors involve in the supply of seedling for the primary production activities and also the total number of employment under the category for provision of services is estimated based on the information obtained from the companies' feedback providing services in

forestry-related activities such as plantation development, silvicultural treatment, construction of park facilities, tour operators and furniture makers. Most of the contractors are involved in forestry related activities such as construction as well as forestry development program (plantation and silvicultural treatment). Their nature of business is multitasking, that is, the same company provides many goods and services. This data does not include the number of contractors for downstream activities as reported in FRA 2005.



Categories	Employment (1000 person-years)		
	2000	2005	2010
Primary production of goods and Provision of services	0.54	0.54	0.6
Unspecified forestry activities	ID	ID	ID
TOTAL	0.54	0.54	0.6

Estimation and forecasting

The data was taken in 2001, 2002 and 2003 was derived from the number of Contractors registered in the Department where each Company is estimated to have an average number of 8 workers per Company

19.3 Data

Table 19

Category		Employment (000 years FTE)			
		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	The figure for the year 2000 and 2005 is an average of the data from 2001 to 2003.

Other general comments to the table

The projection of data is based on the 20 year Strategic Planning [2004-2023] booklet published by the Forestry Department.

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)	3	Brunei Dollar	2011

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

Forests earmarked for conversion	N/A
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Other general comments

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