



Food and Agriculture
Organization of the
United Nations

Global Forest Resources Assessment 2020

Report

Brunei Darussalam

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

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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 + type of data source eg NFI, etc

References to sources of information	Year(s)	Additional comments
Anderson & Marsden, 1984. Forest Resources & Strategic Planning Study	1979	Both aerial and ground surveys were conducted.
DOF, 1996. An Introduction to Forestry in Brunei Darussalam. Department of Forestry, Ministry of Industry and Primary Resources, Brunei Darussalam.	1996	Provides good descriptions of National classes based on Anderson & Marsden, 1984.

National 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 (Shorea albida), Terentang (Camposperma coriacea), Keruntum (combretocarpus rotundatus), and Kapur paya (Dryobalanop rappa) 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 Shorea 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..

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

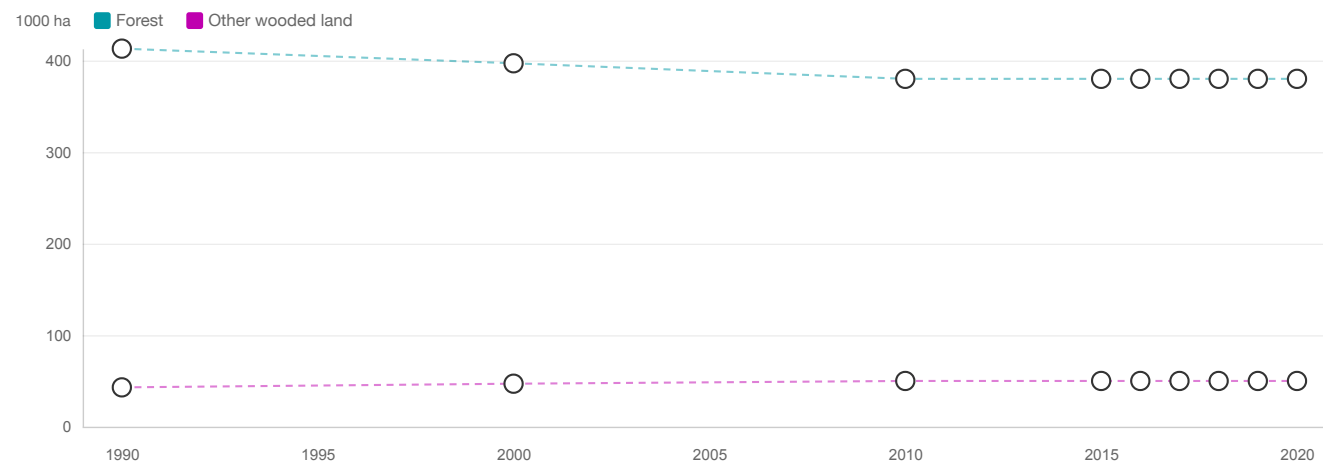
Analysis and processing of national data

Estimation and forecasting

The figures for 1990, 2000 and 2010 for primary and disturbed forests have been estimated and forecasted using linear intra-polation and extrapolation trend method of 1979-1996 figures. Due to a lack of updated information, 2010 figures are repeated for reporting years 2015 up to 2020.

Reclassification into FRA 2020 categories

FRA Categories	National Classes		
	Primary	Disturbed	Other land
Forest	100%	70%	
Other wooded land		30%	
Other land			100%



FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	413.00	397.00	380.00	380.00	380.00	380.00	380.00	380.00	380.00
Other wooded land (a)	43.00	47.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Other land (c-a-b)	71.00	83.00	97.00	97.00	97.00	97.00	97.00	97.00	97.00
Total land area (c)	527.00	527.00	527.00	527.00	527.00	527.00	527.00	527.00	527.00

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	0.00
Temperate	0.00	0.00
Sub-tropical	0.00	0.00
Tropical	100.00	100.00

Comments

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.

Other wooded lands represent degraded areas with naturally poor conditions such as sandy and swampy areas

The decreasing trend of the forest areas between 1990 and 2010 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.

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).

Due to lack of updated information forest and other wooded land areas have been assumed stable after 2010.

1b Forest characteristics

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Year(s)	Additional comments
Anderson & Marsden, 1984. Forest Resources & Strategic Planning Study	1979	Both aerial and ground surveys were conducted.
DOF, 1996. An Introduction to Forestry in Brunei Darussalam. Department of Forestry, Ministry of Industry and Primary Resources, Brunei Darussalam.	1996	Provides good descriptions of National classes based on Anderson & Marsden, 1984.

National classification and definitions

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Original data

(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

*Original data

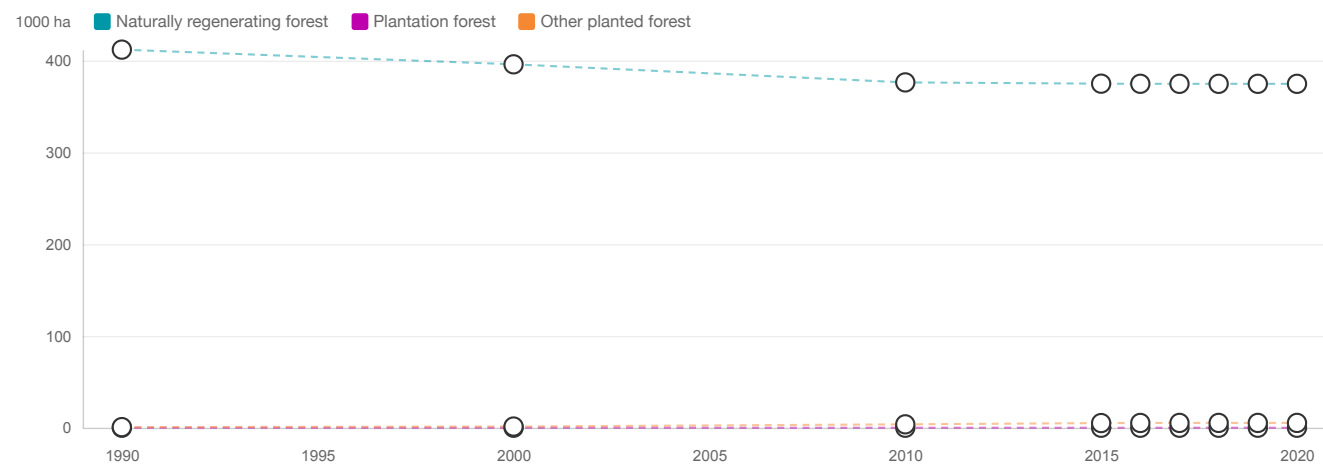
Analysis and processing of national data

Estimation and forecasting

Data for 1996 was used to estimate planted forests for 1990. For the period 1990-2016 it was assumed an increasing trend in the establishment of forest plantation in order to secure the local supply of timber in the future.

Reclassification into FRA 2020 categories

National Category	Percentage reclassification in FRA Categories	
	Naturally regenerated forests	Other Planted forests
Disturbed Forests		
Secondary	100	
Plantation		100



FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)	412.00	396.00	376.29	374.91	374.79	374.74	374.74	374.74	374.74
Planted forest (b)	0.67	1.31	3.71	5.09	5.21	5.26	5.26	5.26	5.26
Plantation forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
...of which introduced species	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other planted forest	0.67	1.31	3.71	5.09	5.21	5.26	5.26	5.26	5.26
Total (a+b)	412.67	397.31	380.00	380.00	380.00	380.00	380.00	380.00	380.00
Total forest area	413.00	397.00	380.00	380.00	380.00	380.00	380.00	380.00	380.00

Comments

Naturally regenerating forest are secondary forest areas within the forest reserves which are treated with enrichment planting using indigenous tree species.

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.

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

Mangroves: Brunei Forestry Department (<http://www.forestry.gov.bn/SitePages/Mangrove.aspx>)

Primary forest: Anderson & Marsden, 1984. Forest Resources & Strategic Planning Study. 1979 and

DOF, 1996. An Introduction to Forestry in Brunei Darussalam. Department of Forestry, Ministry of Industry and Primary Resources, Brunei Darussalam.

National classification and definitions

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Original data

Mangroves:

Brunei Darussalam mangrove forests are estimated to cover around 18,418 hectares, mostly found in the inner Brunei Bay. The mangrove forest is further classified based on the dominant plant species, as follows:

- Bakau
- Nyireh Bunga
- Linggadai
- Nipah
- Nipah Dungun
- Pedada
- Nibong

'Bakau' Forests

This mangrove forest virtually dominated by 'bakau minyak' (*Rhizophora apiculata*) and represents almost 50% of the total mangrove forest in the Temburong Distric. Another *Rhizophora* species, 'bakau kurap' (*Rhizophora mucronata*), also occurs but is limited to areas near deltaic channels and creeks.

'Nyireh Bunga' Forests

'Nyireh bunga' (*Xylocarpus granatum*) occurs in association with 'bakau minyak' , or in largely homogenous stands especially on less frequently inundated land. Large lobster mounds usually covered by 'piai' fern (*Acrostichum aureum*) abound. Almost pure stands of 'nyireh bunga' can be found in Selirong and Labu Forest Reserves.

'Linggadai' Forests

'Linggadai' (*Bruguiera gymnorhiza*) is the dominant *Bruguiera* species found in the Temburong mangrove forests. Although there are three other species (*B. caryophylloides*, *B. parviflora* , and *B. sexangula*) that can be found abundantly or in pure stands in Sarawak, these species are not significantly present in Brunei. Pure stands of 'linggadai' can be found in small patches in Labu Forest Reserve along the waterways of Sungai Sipuyut.

'Nipah' Forests

Pure concentrations of the 'nipah' palm (*Nypa fruticans*) occur extensively along river banks and riparian zones in the coastal areas. These are found along the lower reaches of the Pendaruan, Temburong, and Labu Rivers in the Temburong District, and along downstream banks of the Tutong and Belait Rivers.

'Nipah-Dungun' Forests

This mangrove forest is characterized by 'nipah' palms in natural combination with 'dungun' (*Heritiera globosa*) as understorey. This mangrove can be observed at the most upper limits of saline influence particularly along the Temburong and Labu Rivers. Towards the down-river limits of its distribution, 'buta buta' (*Excoecaria agallocha*), 'linggadai', and some 'bakau' may be present.

'Pedada' Forests

Small gregarious stands of 'pedada' (*Sonneratia caseolaris*) occur on recently deposited silt along the fringes of the Temburong and Labu Rivers. This species is most prominent in Kuala Labu and Temburong.

'Nibong' Forests

The tall spiny palm 'nibong' (*Oncosperma tigillarum*) is a marginal mangrove species, occurring locally in small to medium-sized clumps at the land-ward edge of mangroves, especially in more upriver localities.

Primary forest:

1979=341.184

1996=298.209

Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest	313.00	288.00	263.00	263.00	263.00
Temporarily unstocked and/or recently regenerated					
Bamboos					
Mangroves	18.42	18.42	18.42	18.42	18.42
Rubber wood					

Comments

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.

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

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National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

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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)	-1.60	-1.70	0.00	0.00

Comments

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

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National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

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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

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Original data

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Analysis and processing of national data

Estimation and forecasting

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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	71.00	83.00	97.00	97.00	97.00

Comments

2a Growing stock

National Data

Anderson & Marsden. 1984. Brunei Forest Resources and Strategic Planning Study.

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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
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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.

Analysis and processing of national data

Estimation and forecasting

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.

Taking into consideration this information, it has been decided to consider an average volume for the naturally regenerating forest and other planted forest equal to 190 m³/ha.

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

Reclassification into FRA 2020 categories

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FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00
Planted forest	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00
...of which plantation forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
...of which other planted forest	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00
Forest	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00
Other wooded land	25.75	25.75	25.75	25.75	25.75	25.75	25.75	25.75	25.75

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	78.28	75.24	71.50	71.23	71.21	71.20	71.20	71.20	71.20
Planted forest	0.13	0.25	0.70	0.97	0.99	1.00	1.00	1.00	1.00
...of which plantation forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
...of which other planted forest	0.13	0.25	0.70	0.97	0.99	1.00	1.00	1.00	1.00
Forest	78.47	75.43	72.20	72.20	72.20	72.20	72.20	72.20	72.20
Other wooded land	1.11	1.21	1.29	1.29	1.29	1.29	1.29	1.29	1.29

Comments

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

Expert knowledge

National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#1 Ranked in terms of volume	Shorea parviflora	Meranti Sarang Punai					
#2 Ranked in terms of volume	Dryobalanops beccarii	Kapur Bukit					
#3 Ranked in terms of volume	Shorea leavis	Kumus					
#4 Ranked in terms of volume	Dryobalanops lanceolata	Kapur Paji					
#5 Ranked in terms of volume	Dipterocarpus acutangulus	Keruing Beludu					
#6 Ranked in terms of volume	Shorea argentifolia	Meranti Binatoh					
#7 Ranked in terms of volume	Koompassia malaccensis	Kempas					
#8 Ranked in terms of volume	Dipterocarpus globosus	Keruing Buah Bulat					
#9 Ranked in terms of volume	Shorea macroptera	Meranti Melantai					
#10 Ranked in terms of volume	Shorea mecistopteryx	Meranti Kawang Burong					
Remaining native tree species							
Total volume of native tree species			—	—	—	—	—
Introduced tree species							
#1 Ranked in terms of volume							

FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#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			–	–	–	–	–

Comments

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

FRA 2020 biomass calculator

National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

Insert the percentages of Growing stock by IPCC forest type for each of the FRA forest categories									
IPCC forest types	FRA forest categories								
	Naturally regenerating forest	Plantation forest	Other planted forest						
	% of Growing stock								
Broadleaved humid	100%		100%						
Broadleaved dry	0%		0%						
Coniferous	0%		0%						
	100%	0%	100%	Must add up to 100%					
Insert Carbon fraction used by country (IPCC default = 0.47)									
Carbon Fraction	47%								
Biomass conversion and expansion factors (BCEF)									
Naturally regenerating forest	1990	2000	2010	2015	2016	2017	2018	2019	2020
Broadleaved humid	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Broadleaved dry	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Coniferous	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70

Plantation forest									
Broadleaved humid	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Broadleaved dry	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Coniferous	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Other planted forest									
Broadleaved humid	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Broadleaved dry	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Coniferous	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Weighted BCEF									
Naturally regenerating forest	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Plantation forest									
Other planted forest	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Root-shoot ratios									
Naturally regenerating forest	1990	2000	2010	2015	2016	2017	2018	2019	2020
Broadleaved humid	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Broadleaved dry	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Coniferous	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Plantation forest									
Broadleaved humid	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Broadleaved dry	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Coniferous	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Other planted forest									
Broadleaved humid	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Broadleaved dry	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Coniferous	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Weighted RS ratio									
Naturally regenerating forest	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Plantation forest									
Other planted forest	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24

Above-ground biomass (t/ha)									
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	247.00	247.00	247.00	247.00	247.00	247.00	247.00	247.00	247.00
Plantation forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other planted forest	247.00	247.00	247.00	247.00	247.00	247.00	247.00	247.00	247.00
Total	247.00	247.00	247.00	247.00	247.00	247.00	247.00	247.00	247.00
Below-ground biomass (t/ha)									
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	59.28	59.28	59.28	59.28	59.28	59.28	59.28	59.28	59.28
Plantation forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other planted forest	59.28	59.28	59.28	59.28	59.28	59.28	59.28	59.28	59.28
Total	59.28	59.28	59.28	59.28	59.28	59.28	59.28	59.28	59.28

Reclassification into FRA 2020 categories

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FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	247.00	247.00	247.00	247.00	247.00	247.00	247.00	247.00	247.00
Below-ground biomass	59.28	59.28	59.28	59.28	59.28	59.28	59.28	59.28	59.28
Dead wood									

Comments

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

FRA 2020 Biomass calculator

National classification and definitions

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Original data

-

Analysis and processing of national data

Estimation and forecasting

-

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	116.09	116.09	116.09	116.09	116.09	116.09	116.09	116.09	116.09
Carbon in below-ground biomass	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86
Carbon in dead wood									
Carbon in litter	2.42	2.01	2.11	2.11	2.11	2.11	2.11	2.11	2.11
Soil carbon	58.16	52.86	52.68	52.68	52.68	52.68	52.68	52.68	52.68

Soil depth (cm) used for soil carbon estimates	30.00
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Comments

The reviewer edited "Above ground and belowground from biomass calculator and litter and soil after 2015 repeated same value."

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

Expert knowledge

National classification and definitions

-

Original data

The forest of Brunei Darussalam are categorised according to the primary function they are intended to serve as follows:

1) Protection Forests
2) Production Forests
3) Recreational Forests
4) Conservation Forests
5) National Parks
Protection Forests
Preserved forests which are intended primarily to protect critical soil and water resources; keep the country green and beautiful and the climate invigorating; prevent or minimise the occurrence of floods, droughts, erosion, pollution, and similar environmental problems; and contribute to the general ecological stability of the country.
Production Forests
Natural and man-made forests, including non-timber plantations, for sustained supply of forest products for the country.
Recreational Forests
Forested areas with natural features that are developed for outdoor recreation in order to promote social, psychological, physical, and economic well-being of the people.
Conservation Forests
Undisturbed forests set aside to preserve and conserve biodiversity for scientific, educational, and related purposes.
National Parks
Areas with distinctive geologic, topographic and other formations and features of special interest, which are reserved to maintain biologically diverse plant and animal communities for the benefit of the present as well as the coming generations.

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)	138.03	138.03	138.03	138.03	138.03
Protection of soil and water (b)	18.56	18.56	18.56	18.56	18.56
Conservation of biodiversity (c)	28.51	28.51	28.51	28.51	28.51
Social Services (d)	50.42	50.42	50.81	50.81	50.81
Multiple use (e)	0.00	0.00	0.00	0.00	0.00
Other (specify in comments) (f)					
None/unknown (g)	177.48	161.48	144.09	144.09	144.09
Total forest area	413.00	397.00	380.00	380.00	380.00

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

Expert estimate

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	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00
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 Forestry Policy

National classification and definitions

-

Original data

All forests as provided for under Table 1a are government owned. Although there are trees planted by private individual, the same remains under the jurisdiction of the Forestry Department.

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)	0.00	0.00	0.00	0.00
...of which owned by individuals	0.00	0.00	0.00	0.00
...of which owned by private business entities and institutions	0.00	0.00	0.00	0.00
...of which owned by local, tribal and indigenous communities	0.00	0.00	0.00	0.00
Public ownership (b)	413.00	397.00	380.00	380.00
Unknown/other (specify in comments) (c)	0.00	0.00	0.00	0.00
Total forest area	413.00	397.00	380.00	380.00

Comments

Forest and forest resources within forest reserves, statelands and private lands are under the direct jurisdiction of the Forestry Department.

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)	413.00	397.00	380.00	380.00
Individuals (b)	0.00	0.00	0.00	0.00
Private business entities and institutions (c)	0.00	0.00	0.00	0.00
Local, tribal and indigenous communities (d)	0.00	0.00	0.00	0.00
Unknown/other (specify in comments) (e)	0.00	0.00	0.00	0.00
Total public ownership	413.00	397.00	380.00	380.00

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	397.00	-	-	-	-	-	-	-	-	-	380.00	-	-	-	-	380.00	380.00	380.00

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		
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	75.33	72.11	72.11	72.11	72.11	72.11	72.11	72.11

Name of agency responsible	
----------------------------	--

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	-0.44	0.00	0.00	0.00	0.00	0.00	0.00

Name of agency responsible	
----------------------------	--

Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	247.00	247.00	247.00	247.00	247.00	247.00	247.00	247.00

Name of agency responsible	
----------------------------	--

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	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

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	–	–