



**Forestry Department**

**Food and Agriculture Organization of the United Nations**

**GLOBAL FOREST RESOURCES  
ASSESSMENT 2010**

**COUNTRY REPORT**

**BRUNEI DARUSSALAM**

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## The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. This country report forms part of the Global Forest Resources Assessment 2010 (FRA 2010).

The reporting framework for FRA 2010 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes variables related to the extent, condition, uses and values of forest resources, as well as the policy, legal and institutional framework related to forests. More information on the FRA 2010 process and the results - including all the country reports - is available on the FRA Web site ([www.fao.org/forestry/fra](http://www.fao.org/forestry/fra)).

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

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## 1 Table T1 – Extent of Forest and Other wooded land

### 1.1 FRA 2010 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds <i>in situ</i> . 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 <i>in situ</i> ; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as “Forest” or “Other wooded land”.
Other land with tree cover (Subordinated to “Other land”)	Land classified as “Other land”, spanning 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.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.

### 1.2 National data

#### 1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Anderson & Marsden, 1984. Forest Resources & Strategic Planning Study	Medium	Vegetation type Forest cover	1979	Both aerial and ground surveys were conducted.
JICA, 1994. The Development Survey on the Forest Resources in Brunei Darussalam	Medium	Stock volume; Soils and forest conditions	1992 - 1994	Study was conducted within designated national park and intended for saw timber plantation areas
DOF, 1996. An Introduction to Forestry in Brunei Darussalam. Department of Forestry, Ministry of Industry and Primary Resources, Brunei Darussalam.	Medium	Overview of forestry Sector	1996	Provides good descriptions of National classes based on Anderson & Marsden, 1984.
Annual log production data	High	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
<b>Total Forests</b>	<b>341.184</b>	<b>127.862</b>	<b>469.046</b>	<b>298.209</b>	<b>149.909</b>	<b>448.118</b>

### 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
<b>Total Area of Country</b>	<b>576.532</b>	<b>576.532</b>

### 1.3 Analysis and processing of national data

#### 1.3.1 Calibration

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

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 into FRA 2010 categories

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

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

#### 1.4 Data for Table T1

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	413	397	389	380
Other wooded land	43	47	48	50
Other land	71	83	90	97
...of which with tree cover	n.a.	n.a.	n.a.	n.a.
Inland water bodies	50	50	50	50
<b>TOTAL</b>	<b>577</b>	<b>577</b>	<b>577</b>	<b>577</b>

## 1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
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.	
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.	
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.

### 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.

### Expected year for completion of ongoing/planned national forest inventory and/or RS survey / mapping

Field inventory	
Remote sensing survey / mapping	



## 2 Table T2 – Forest ownership and management rights

### 2.1 FRA 2010 Categories and definitions

Category	Definition
Public ownership	Forest owned by the State; or administrative units of the public administration; or by institutions or corporations owned by the public administration.
Private ownership	Forest owned by individuals, families, communities, private co-operatives, corporations and other business entities, private religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.
Individuals ( <i>sub-category of Private ownership</i> )	Forest owned by individuals and families.
Private business entities and institutions ( <i>sub-category of Private ownership</i> )	Forest owned by private corporations, co-operatives, companies and other business entities, as well as private non-profit organizations such as NGOs, nature conservation associations, and private religious and educational institutions, etc.
Local communities ( <i>sub-category of Private ownership</i> )	Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area. The community members are co-owners that share exclusive rights and duties, and benefits contribute to the community development.
Indigenous / tribal communities ( <i>sub-category of Private ownership</i> )	Forest owned by communities of indigenous or tribal people.
Other types of ownership	Other kind of ownership arrangements not covered by the categories above. Also includes areas where ownership is unclear or disputed.
<b>Categories related to the holder of management rights of public forest resources</b>	
Public Administration	The Public Administration (or institutions or corporations owned by the Public Administration) retains management rights and responsibilities within the limits specified by the legislation.
Individuals/households	Forest management rights and responsibilities are transferred from the Public Administration to individuals or households through long-term leases or management agreements.
Private institutions	Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities, private co-operatives, private non-profit institutions and associations, etc., through long-term leases or management agreements.
Communities	Forest management rights and responsibilities are transferred from the Public Administration to local communities (including indigenous and tribal communities) through long-term leases or management agreements.
Other form of management rights	Forests for which the transfer of management rights does not belong to any of the categories mentioned above.

## 2.2 National data

### 2.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
National Forestry Policy	High	Forest ownership, administration and management responsibilities		

### 2.2.2 Original data

All forests as provided for under Table 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.

## 2.3 Data for Table T2

**Table 2a - Forest ownership**

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public ownership	413	397	389
Private ownership	0	0	0
...of which owned by individuals	0	0	0
...of which owned by private business entities and institutions	0	0	0
...of which owned by local communities	0	0	0
...of which owned by indigenous / tribal communities	0	0	0
Other types of ownership	0	0	0
<b>TOTAL</b>	<b>413</b>	<b>397</b>	<b>389</b>

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

Does ownership of trees coincide with ownership of the land on which they are situated?		Yes
	x	No
If <b>No</b> above, please describe below how the two differ:		
Forest and forest resources remain to be owned by the State even it is found and growing within private lands.		

**Table 2b - Holder of management rights of public forests**

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public Administration	413	397	389
Individuals	0	0	0
Private corporations and institutions	0	0	0
Communities	0	0	0
Other	0	0	0
<b>TOTAL</b>	<b>413</b>	<b>397</b>	<b>389</b>

## 2.4 Comments to Table T2

Variable / 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.	
Private ownership		
Other types of ownership		
Management rights		

Other general comments to the table

### 3 Table T3 – Forest designation and management

#### 3.1 FRA 2010 Categories and definitions

Term	Definition
Primary designated function	The primary function or management objective assigned to a management unit either by legal prescription, documented decision of the landowner/manager, or evidence provided by documented studies of forest management practices and customary use.
Protected areas	Areas especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.
<b>Categories of primary designated functions</b>	
Production	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Protection of soil and water	Forest area designated primarily for protection of soil and water.
Conservation of biodiversity	Forest area designated primarily for conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas.
Social services	Forest area designated primarily for social services.
Multiple use	Forest area designated primarily for more than one purpose and where none of these alone is considered as the predominant designated function.
Other	Forest areas designated primarily for a function other than production, protection, conservation, social services, or multiple use.
No / unknown	No or unknown designation.
<b>Special designation and management categories</b>	
Area of permanent forest estate (PFE)	Forest area that is designated to be retained as forest and may not be converted to other land use.
Forest area within protected areas	Forest area within formally established protected areas independently of the purpose for which the protected areas were established.
Forest area under sustainable forest management	To be defined and documented by the country.
Forest area with management plan	Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, which is periodically revised.

#### 3.2 National data

##### 3.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Anderson & Marsden. 1984. Brunei Forest Resources and Strategic Planning Study.	H	Area by Functions	1984	
DOFB. 1989. National Forest Policy. Forestry Department. Ministry of Industry and Primary Resources.	H	Functional Forest types	1990	
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.	H	Area by functions	1996	

### 3.2.2 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.
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.
Protection forest	Unexploitable Preserved forests intended primarily to keep intact the forest conditions protecting critical soils and water resources; keep the country green and beautiful and the climate invigorating; prevent or minimize the occurrence of floods, droughts, erosion, desertification and atmospheric pollution; and contributing to the general ecological stability of the country in particular and the world as a whole.
Recreational forest	Forested areas reserved and developed for outdoor recreation in order to contribute significantly to social, psychological, physical, and economic well-being of the people.
National Park	Areas that may include geologic and topographic formation of special interest and which are reserved to maintain biologically diverse plant and animal communities for the benefit of the present and future generations.

### 3.2.3 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			<b>31.684</b>
Protection Forests	18.070	0.477	0.015	<b>18.562</b>
National Parks	48.854			<b>48.854</b>
Parks and Recreation Forests	4.445			<b>4.445</b>
Production Forests	218.650			<b>218.650</b>
<b>Total</b>	<b>321.703</b>	<b>0.477</b>	<b>0.015</b>	<b>322.195</b>

(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	<b>31.684</b>
Protection Forests	18.562		<b>18.562</b>
National Parks	46.210	2.644	<b>48.854</b>
Parks and Recreation Forests	4.211	0.234	<b>4.445</b>
Production Forests	138.026	80.624	<b>218.650</b>
<b>Total</b>	<b>235.520</b>	<b>86.675</b>	<b>322.195</b>

(Source: DOFB, 1996)

### 3.3 Analysis and processing of national data

#### 3.3.1 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
<b>Total</b>	<b>235.520</b>	<b>322.195</b>	<b>322.195</b>	<b>322.195</b>

#### 3.3.2 Reclassification into FRA 2010 categories

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			
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

### 3.4 Data for Table T3

Table 3a – Primary designated function

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production	138	219	219	219
Protection of soil and water	19	19	19	19
Conservation of biodiversity	75	81	81	81
Social services	4	4	4	4
Multiple use	0	0	0	0
Other (please specify in comments below the table)	0	0	0	0
No / unknown	177	74	66	57
<b>TOTAL</b>	<b>413</b>	<b>397</b>	<b>389</b>	<b>380</b>

**Table 3b – Special designation and management categories**

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Area of permanent forest estate	236	322	322	322
Forest area within protected areas	19	19	19	19
Forest area under sustainable forest management	236	322	322	322
Forest area with management plan	n.a.	n.a.	n.a.	n.a.

### 3.5 Comments to Table T3

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Production		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.
Protection of soil and water		
Conservation of biodiversity		
Social services		
Multiple use		
Other		
No / unknown designation	These forest areas are outside the national forest estate and these lands are under the management jurisdiction of other government agencies.	The trend is gradually decreasing in view of forest land-use conversion for infrastructure development for housing, industrial, and agriculture.
Area of permanent forest estate	Forest area gazetted as forest reserves.	Although some forest areas are still waiting for gazettelement, it is already considered within the national forest estate since the subject areas are already under the direct jurisdiction of the Forestry Department.
Forest area within protected areas		
Forest area under sustainable forest management		
Forest area with management plan		

#### Other general comments to the table

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## 4 Table T4 – Forest characteristics

### 4.1 FRA 2010 Categories and definitions

Term / category	Definition
Naturally regenerated forest	Forest predominantly composed of trees established through natural regeneration.
Introduced species	A species, subspecies or lower taxon, occurring <u>outside</u> its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).
<b>Characteristics categories</b>	
Primary forest	Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Other naturally regenerated forest	Naturally regenerated forest where there are clearly visible indications of human activities.
Other naturally regenerated forest of introduced species (sub-category)	Other naturally regenerated forest where the trees are predominantly of introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
Planted forest of introduced species (sub-category)	Planted forest, where the planted/seeded trees are predominantly of introduced species.
<b>Special categories</b>	
Rubber plantations	Forest area with rubber tree plantations.
Mangroves	Area of forest and other wooded land with mangrove vegetation.
Bamboo	Area of forest and other wooded land with predominant bamboo vegetation.

### 4.2 National data

#### 4.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Anderson & Marsden. 1984. Brunei Forest Resources and Strategic Planning Study.	H	Area by Functions	1984	
DOFB. 1989. National Forest Policy. Forestry Department. Ministry of Industry and Primary Resources.	H	Functional Forest types	1990	
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.	H	Area by functions	1996	
Forest Plantation Statistics	H	Forest Plantation Establishment		



## 4.2.2 Classification and definitions

National class	Definition
	Not available

## 4.2.3 Original data

Please refer to Table 1.2.3

## 4.3 Analysis and processing of national data

### 4.3.1 Estimation and forecasting

(In '000 hectares)

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

\*Original data

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

### 4.3.2 Reclassification into FRA 2010 categories

National Category	Percentage reclassification in FRA Categories		
	Primary forests	Other naturally regenerated forests	Planted forests
Primary Forests	100		
Disturbed Forests			
Secondary		100	
Plantation			100
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

#### 4.4 Data for Table T4

**Table 4a**

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest	313	288	275	263
Other naturally regenerated forest	99	108	112	114
...of which of introduced species	n.a.	n.a.	n.a.	n.a.
Planted forest	0.668	1.305	1.955	2.680
...of which of introduced species	n.a.	0.494	0.494	0.494
<b>TOTAL</b>	<b>413</b>	<b>397</b>	<b>389</b>	<b>380</b>

**Table 4b**

FRA 2010 Categories	Area (1000 hectares)			
	1990	2000	2005	2010
Rubber plantations (Forest)	n.a.	n.a.	n.a.	n.a.
Mangroves (Forest and OWL)	18.418	18.418	18.418	18.418
Bamboo (Forest and OWL)	n.a.	n.a.	n.a.	n.a.

#### 4.5 Comments to Table T4

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Primary forest		
Other naturally regenerating forest	Secondary forest areas within the forest reserves 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.	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.
Rubber plantations		
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.	
Bamboo		

Other general comments to the table

## 5 Table T5 – Forest establishment and reforestation

### 5.1 FRA 2010 Categories and definitions

Term	Definition
Afforestation	Establishment of forest through planting and/or deliberate seeding on land that, until then, was not classified as forest.
Reforestation	Re-establishment of forest through planting and/or deliberate seeding on land classified as forest.
Natural expansion of forest	Expansion of forests through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture).

### 5.2 Data for Table T5

FRA 2010 Categories	Annual forest establishment (hectares/year)			...of which of introduced species <sup>1)</sup> (hectares/year)		
	1990	2000	2005	1990	2000	2005
Afforestation	n.a	n.a	n.a	n.a	n.a	n.a
Reforestation	400	400	400	n.a	n.a	n.a
...of which on areas previously planted	400	400	400	n.a	n.a	n.a
Natural expansion of forest	n.a	n.a	n.a	n.a	n.a	n.a

Note: The figures for the reporting years refer to the averages for the 5-year periods 1988-1992, 1998-2002 and 2003-2007 respectively.

### 5.3 Comments to Table T5

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

Other general comments to the table

## 6 Table T6 – Growing stock

### 6.1 FRA 2010 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.
Growing stock of commercial species	Growing stock (see def. above) of commercial species.

### 6.2 National data

#### 6.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Anderson & Marsden. 1984. Brunei Forest Resources and Strategic Planning Study.	H	Area by Functions	1984	

#### 6.2.2 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

#### 6.2.3 Original data

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.

### 6.3 Analysis and processing of national data

#### 6.3.1 Calibration

Not needed since are figures from Table 1 are being used for this table.

#### 6.3.2 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. 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

### 6.3.3 Reclassification into FRA 2010 categories

## 6.4 Data for Table T6

Table 6a – Growing stock

FRA 2010 category	Volume (million cubic meters over bark)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Total growing stock	81.58	76.92	74.59	72.26	1.11	1.20	1.24	1.29
... of which coniferous	0	0	0	0	0	0	0	0
... of which broadleaved	81.58	76.92	74.59	72.26	1.11	1.20	1.24	1.26
Growing stock of commercial species	81.58	64.69	62.06	60.51	n.a.	n.a.	n.a.	n.a.

Table 6b – Growing stock of the 10 most common species

FRA 2010 category / Species name			Growing stock in forest (million cubic meters)		
Rank	Scientific name	Common name	1990	2000	2005
1 <sup>st</sup>	<i>Shorea parviflora</i>	Meranti sarang punai	n.a.	n.a.	n.a.
2 <sup>nd</sup>	<i>Dryobalanops beccarii</i>	Kapur bukit	n.a.	n.a.	n.a.
3 <sup>rd</sup>	<i>Shorea leavis</i>	Kumus	n.a.	n.a.	n.a.
4 <sup>th</sup>	<i>Dryobalanops lanceolata</i>	Kapur paji	n.a.	n.a.	n.a.
5 <sup>th</sup>	<i>Dipterocarpus acutangulus</i>	Keruing beludu	n.a.	n.a.	n.a.
6 <sup>th</sup>	<i>Shorea argentifolia</i>	Meranti binatang	n.a.	n.a.	n.a.
7 <sup>th</sup>	<i>Koompassia malaccensis</i>	Kempas	n.a.	n.a.	n.a.
8 <sup>th</sup>	<i>Dipterocarpus globosus</i>	Keruing buah bulat	n.a.	n.a.	n.a.
9 <sup>th</sup>	<i>Shorea macroptera</i>	Meranti melantai	n.a.	n.a.	n.a.
10 <sup>th</sup>	<i>Shorea mecistopteryx</i>	Meranti kawang burung	n.a.	n.a.	n.a.
Remaining					
<b>TOTAL</b>					

Note: Rank refers to the order of importance in terms of growing stock, i.e. 1<sup>st</sup> is the species with the highest growing stock. Year 2000 is the reference year for defining the species list and the order of the species.

**Table 6c – Specification of threshold values**

Item	Value	Complementary information
Minimum diameter (cm) at breast height <sup>1</sup> of trees included in growing stock (X)	n.a.	
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	20-30 cm	
Minimum diameter (cm) of branches included in growing stock (W)	n.a.	
Volume refers to “above ground” (AG) or “above stump” (AS)	AS	

**6.5 Comments to Table T6**

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total growing stock		
Growing stock of broadleaved / coniferous		
Growing stock of commercial species	The figure provided for under this category is based on the NIS volume estimates by Andersons with some adjustments. Future inventory and re-classification of commercial tree species would provide more appropriate estimates.	
Growing stock composition		

Other general comments to the table

<sup>1</sup> Diameter at breast height (DBH) refers to diameter over bark measured at a height of 1.30 m above ground level or 30 cm above buttresses if these are higher than 1 m.

## 7 Table T7 – Biomass stock

### 7.1 FRA 2010 Categories and definitions

Category	Definition
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 2mm 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.

### 7.2 Analysis and processing of national data

#### 7.2.1 Estimation and forecasting

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



### 7.3 Data for Table T7

FRA 2010 category	Biomass (million metric tonnes oven-dry weight)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Above-ground biomass	138.68	130.76	126.80	122.84	1.89	2.04	2.11	2.20
Below-ground biomass	33.28	31.38	30.43	29.48	0.45	0.49	0.51	0.53
Dead wood	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
<b>TOTAL</b>	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

### 7.4 Comments to Table T7

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Above-ground biomass		
Below-ground biomass		
Dead wood		

Other general comments to the table

## 8 Table T8 – Carbon stock

### 8.1 FRA 2010 Categories and definitions

Category	Definition
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 specified depth chosen by the country and applied consistently through the time series.

### 8.2 National data

#### 8.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FRA 2010 Guidelines				

### 8.3 Analysis and processing of national data

#### 8.3.1 Estimation and forecasting

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.

### 8.4 Data for Table T8

FRA 2010 Category	Carbon (Million metric tonnes)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Carbon in above-ground biomass	65.18	61.46	59.60	57.73	0.89	0.96	0.99	1.03
Carbon in below-ground biomass	15.64	14.75	14.30	13.86	0.21	0.23	0.24	0.25
<b>Sub-total: Living biomass</b>	<b>80.82</b>	<b>76.21</b>	<b>73.90</b>	<b>71.59</b>	<b>1.10</b>	<b>1.19</b>	<b>1.23</b>	<b>1.28</b>
Carbon in dead wood	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Carbon in litter	0.96	0.83	0.82	0.81	0.10	0.10	0.10	0.10
<b>Sub-total: Dead wood and litter</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>
Soil carbon	23.66	20.61	20.23	19.97	2.24	2.42	2.51	2.55
<b>TOTAL</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>

Soil depth (cm) used for soil carbon estimates	30cms
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### 8.5 Comments to Table T8

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Carbon in above-ground biomass		
Carbon in below-ground biomass		
Carbon in dead wood		
Carbon in litter		
Soil carbon		

Other general comments to the table

## 9 Table T9 – Forest fires

### 9.1 FRA 2010 Categories and definitions

Category	Definition
Number of fires	Average number of vegetation fires per year in the country.
Area affected by fire	Average area affected by vegetation fires per year in the country.
Vegetation fire (supplementary term)	Any vegetation fire regardless of ignition source, damage or benefit.
Wildfire	Any unplanned and/or uncontrolled vegetation fire.
Planned fire	A vegetation fire regardless of ignition source that burns according to management objectives and requires limited or no suppression action.

### 9.2 National data

#### 9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Fire Brigade Report	L	Area burnt	2000	Estimation of area burnt during the operation. The area is visual estimation only.

#### 9.2.2 Classification and definitions

National class	Definition
	Not available

#### 9.2.3 Original data

The data is drawn from the report from the Fire Brigade.

### 9.3 Analysis and processing of national data

#### 9.3.1 Estimation and forecasting

Since the data is extracted directly from the report, estimation and forecasting is not needed.

### 9.4 Data for Table T9

**Table 9a**

FRA 2010 category	Annual Average for 5-year period					
	1990		2000		2005	
	1000 (ha)	number of fires	1000 (ha)	number of fires	1000 (ha)	number of fires
Total land area affected by fire	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
... of which on forest	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
... of which on other wooded land	n.a.	n.a.	0.66	355	0.35	252
... of which on other land	n.a.	n.a.	0.60	453	0.27	0.33

**Table 9b**

FRA 2010 category	Proportion of forest area affected by fire (%)		
	1990	2000	2005
Wildfire			
Planned fire			

Note: The figures for the reporting years refer to the averages of annually affected areas for the 5-year periods 1988-1992, 1998-2002 and 2003-2007 respectively

### 9.5 Comments to Table T9

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Area affected by fire	The data is drawn from the latest report from the Fire Brigade. No forest fire reported in the Forest Reserve after the year 2000. Cases of forest fire in the F.R did occur in 1998- 1999 but no data available from the latest report.	For the figure 2000 the data taken is from the year 2001 and 2002 only. The data for 2005 is for five year data.
Number of fires	Number of fires indicate the number of calls or cases reported.	
Wildfire / planned fire	Not available	

#### Other general comments to the table

Fire on other land refers to bush fire.

## **10 Table T10 – Other disturbances affecting forest health and vitality**

So far there is no collection of data related to the disturbances affecting forest health and vitality.

## 11 Table T11 – Wood removals and value of removals

### 11.1 FRA 2010 Categories and definitions

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

### 11.2 National data

#### 11.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Annual Log Production Statistics	H	Log production	1990 to 2008	Provide actual figure of log production in cubic meters
Malaysian FOB log prices published by the ITTO Market Information Service		Log value	1990, 2000, 2005	

#### 11.2.2 Classification and definitions

National class	Definition
	Not available

#### 11.2.3 Original data

Annual log production statistics are based on volume under bark.

### 11.3 Analysis and processing of national data

#### 11.3.1 Estimation and forecasting

The existing data on log production was based in measurement of felled trees excluding bark (net industrial stemwood). Since there is no standard factor available for converting volume under bark to volume outside bark in the country, the recommended global default conversion factor of 1.15 was used to estimate the industrial roundwood removals.

	Industrial Roundwood Removals ('000 cubic meters)			
	1990	2000	2005	2008
Net Industrial Stemwood (volume inside bark)	84.728	103.687	111.492	96.269
Estimated volume outside bark	97.438	119.240	128.216	110.709

Prices of logs are not available in the country since logs are not being traded domestically. Exports of logs are also not allowed. To estimate the value of log production, the Malaysian FOB log prices were used as published by the ITTO Market Information Service. Accordingly, the 1990 Malaysian log price for *Shorea* spp is USD100 per cubic meter, USD 150 per cubic meter in 2000, USD220 per cubic meter in 2005, and USD300 per cubic meter in 2007.

Conversion of US dollar to Brunei dollar used are as follows: USD1 = BD1.77 for 1990; USD1 = BD1.73 for 2000; USD1 = BD 1.68 for 2005; and USD1 = BD1.46 for 2008.

#### 11.4 Data for Table T11

FRA 2010 Category	Industrial roundwood removals			Woodfuel removals		
	1990	2000	2005	1990	2000	2005
Total volume (1000 m <sup>3</sup> o.b.)	97.438	119.240	128.216	n.a.	0.242	0.367
... of which from forest	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Unit value (Brunei Dollars / m <sup>3</sup> o.b.)	177.0	259.5	369.6	n.a.	12.5	12.5
Total value (1000 Brunei Dollars)	17,246	30,942	47,388	n.a.	3.020	4.084

Note: The figures for the reporting years refer to the averages of annually affected areas for the 5-year periods 1988-1992, 1998-2002 and 2003-2007 respectively.

	1990	2000	2005
Name of local currency	Brunei Dollars	Brunei Dollars	Brunei Dollars

#### 11.5 Comments to Table T11

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total volume of industrial roundwood removals		
Total volume of woodfuel removals		
Unit value		
Total value		

Other general comments to the table



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

No data are available for this reporting table.

## 13 Table T13 – Employment

### 13.1 FRA 2010 Categories and definitions

Category	Definition
Full-time equivalents (FTE)	A measurement equal to one person working full-time during a specified reference period.
Employment	Includes all persons in paid employment or self-employment.
Paid employment	Persons who during a specified reference period performed some work for <u>wage or salary</u> in cash or in kind.
Self-employment	Persons who during a specified reference period performed some work for <u>profit or family gain</u> in cash or in kind (e.g. employers, own-account workers, members of producers' cooperatives, contributing family workers).

### 13.2 National data

#### 13.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Contractors – Local Companies	L	Number of persons	2004	The data quoted is from the Strategic booklet published by the Forestry Department.

#### 13.2.2 Classification and definitions

National class	Definition
	Not available

#### 13.2.3 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

### 13.3 Analysis and processing of national data

#### 13.3.1 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.

#### 13.4 Data for Table T13

FRA 2010 Category	Employment (1000 years FTE)		
	1990	2000	2005
Employment in primary production of goods	n.a.	n.a.	n.a.
...of which paid employment	n.a.	0.54	0.54
...of which self-employment	n.a.	n.a.	n.a.
Employment in management of protected areas	n.a.	n.a.	n.a.

#### 13.5 Comments to Table T13

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Employment in primary production of goods		The figure for the year 2000 and 2005 is an average of the data from 2001 to 2003.
Paid employment / self-employment		
Employment in management of protected areas		

#### 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.

## 14 Table T14 – Policy and legal framework

### 14.1 FRA 2010 Categories and definitions

Term	Definition
Forest policy	A set of orientations and principles of actions adopted by public authorities in harmony with national socio-economic and environmental policies in a given country to guide future decisions in relation to the management, use and conservation of forest and tree resources for the benefit of society.
Forest policy statement	A document that describes the objectives, priorities and means for implementation of the forest policy.
National forest programme (nfp)	A generic expression that refers to a wide range of approaches towards forest policy formulation, planning and implementation at national and sub-national levels. The national forest programme provides a framework and guidance for country-driven forest sector development with participation of all stakeholders and in consistence with policies of other sectors and international policies.
Law (Act or Code) n forest	A set of rules enacted by the legislative authority of a country regulating the access, management, conservation and use of forest resources.

### 14.2 Data for Table T14

Indicate the existence of the following (2008)			
<b>Forest policy statement with national scope</b>	<input checked="" type="checkbox"/>	Yes	
	<input type="checkbox"/>	No	
If Yes above, provide:	Year of endorsement	1989	
	Reference to document	National Forest Policy	
<b>National forest programme (nfp)</b>	<input checked="" type="checkbox"/>	Yes	
	<input type="checkbox"/>	No	
If Yes above, provide:	Name of nfp in country	5-Year Series National Development Program [Forestry]	
	Starting year	2007-2012	
	Current status	<input type="checkbox"/>	In formulation
		<input checked="" type="checkbox"/>	In implementation
		<input type="checkbox"/>	Under revision
<input type="checkbox"/>		Process temporarily suspended	
Reference to document or web site	5-Year Series National Development Program [Forestry] (2007-2012).		
<b>Law (Act or Code) on forest with national scope</b>	<input checked="" type="checkbox"/>	Yes, specific forest law exists	
	<input type="checkbox"/>	Yes, but rules on forests are incorporated in other (broader) legislation	
	<input type="checkbox"/>	No, forest issues are not regulated by national legislation	
If Yes above, provide:	Year of enactment	1934	
	Year of latest amendment	2007	
	Reference to document	[1] Forest Act, Chapter 46, Laws of Brunei [2] Forest Act (amendment) Order, 2007 & Forest (amendment) Rules, 2007.	

In case the responsibility for forest policy- and/or forest law-making is decentralized, please indicate the existence of the following and explain in the comments below the table how the responsibility for forest policy- and law-making is organized in your country.		
Sub-national forest policy statements		Yes
	✓	No
If Yes above, indicate the number of regions/states/provinces with forest policy statements		
Sub-national Laws (Acts or Codes) on forest		Yes
	✓	No
If Yes above, indicate the number of regions/states/provinces with Laws on forests		

### 14.3 Comments to Table T14

Variable / category	Comments related to data, definitions, etc.
Forest policy statement with national scope	The forest policy statement still valid until today. This is the guiding policy that governs the day-to-day management of the forest resources of Brunei.
National forest programme (nfp)	The 5-Year series National Development Program (NDP) of the forestry sector started during the 5 <sup>th</sup> NDP period (1985-1990). Since then, rapid development in the forestry sector was observed. [Note: 6 <sup>th</sup> NDP (1991-1995); 7 <sup>th</sup> NDP (1996-2000); 8 <sup>th</sup> NDP (2001-2005 carried over to 2006) and latest is the 2007-2012 NDP].
Law (Act or Code) on forest with national scope	The Forest Act and Rules were amended to ensure that they are suitable with the current development in the forestry sector today. In addition, to ensure the effectiveness of the law enforcement, heavier fines and penalties were introduced for any violation of the Forestry Law.
Sub-national forest policy statements	Not applicable
Sub-national Laws (Acts or Codes) on forest	Not applicable

Other general comments to the table

## 15 Table T15 – Institutional framework

### 15.1 FRA 2010 Categories and definitions

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

### 15.2 Data for Table T15

**Table 15a – Institutions**

FRA 2010 Category	2008
Minister responsible for forest policy formulation : please provide full title	Minister of the Ministry of Industry & Primary Resources, Brunei Darussalam.
Level of subordination of Head of Forestry within the Ministry	1 <sup>st</sup> level subordination to Minister
	2 <sup>nd</sup> level subordination to Minister
	3 <sup>rd</sup> level subordination to Minister
	✓ 4 <sup>th</sup> or lower level subordination to Minister
Other public forest agencies at national level	Not applicable
Institution(s) responsible for forest law enforcement	[1] Forestry Department, Ministry of Industry & Primary Resources, Brunei Darussalam. [2] Royal Brunei Police Force, Brunei Darussalam.

**Table 15b – Human resources**

FRA 2010 Category	Human resources within public forest institutions					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Total staff	320	20%	326	23%	322	23%
...of which with university degree or equivalent	17	29%	14	36%	15	40%

Notes:

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

### 15.3 Comments to Table T15

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Minister responsible for forest policy formulation		
Level of subordination of Head of Forestry within the Ministry	Level of subordination to the Minister:- 1 <sup>st</sup> level = Deputy Ministry 2 <sup>nd</sup> level = Permanent Secretary 3 <sup>rd</sup> level = Dep Permanent Secretary 4 <sup>th</sup> level = Head of Forestry	
Other public forest agencies at national level		
Institution(s) responsible for forest law enforcement		
Human resources within public forest institutions		

Other general comments to the table

## **16 Table T16 – Education and research**

No data available for this reporting table.



## 17 Table T17 – Public revenue collection and expenditure

### 17.1 FRA 2010 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, forest products include: roundwood; sawnwood; wood-based panels; pulp and paper; and non-wood forest products. As far as possible, this should include revenue collected by all levels of government (i.e. central, regional/provincial and municipal level), but it should exclude the income of publicly owned business entities.
Public expenditure	All government expenditure on forest related activities (further defined below).
Operational expenditure ( <i>sub-category to Public expenditure</i> )	All government expenditure on public institutions solely engaged in the forest sector. Where the forest administration is part of a larger public agency (e.g. department or ministry), this should only include the forest sector component of the agency's total expenditure. As far as possible, this should also include other institutions (e.g. in research, training and marketing) solely engaged in the forest sector, but it should exclude the expenditure of publicly owned business entities.
Transfer payments ( <i>sub-category to Public expenditure</i> )	All government expenditure on direct financial incentives paid to non-government and private-sector institutions, enterprises communities or individuals operating in the forest sector to implement forest related activities.
Domestic funding	Public expenditure funded from domestic public financial resources, including: retained forest revenue; forest-related funds; and allocations from the national budget (i.e. from non-forest sector public revenue sources).
External funding	Public expenditure funded from grants and loans from donors, non-governmental organisations, international lending agencies and international organisations, where such funds are channelled through national public institutions.

### 17.2 Data for Table T17

Table 17a - Forest revenues

FRA 2010 Categories	Revenues (1000 local currency)	
	2000	2005
Forest revenue	678.26	833.37

**Table 17b - Public expenditure in forest sector by funding source**

FRA 2010 Categories	Domestic funding (1000 local currency)		External funding (1000 local currency)		Total (1000 local currency)	
	2000	2005	2000	2005	2000	2005
Operational expenditure	9259.33	10892.59	299.71	55.76	9559.04	10948.35
Transfer payments	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total public expenditure</b>	9259.33	10892.59	299.71	55.76	9559.04	10948.35
If transfer payments are made for forest management and conservation, indicate for what specific objective(s) - Please tick all that apply.			Reforestation			
			Afforestation			
			Forest inventory and/or planning			
			Conservation of forest biodiversity			
			Protection of soil and water			
			Forest stand improvement			
			Establishment or maintenance of protected areas			
			Other, specify below			

**17.3 Comments to Table T17**

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest revenue	Revenues collected are from R26001 and R26008.	
Operational expenditure	Expenditure data are derived from the Annual Budget, National Development Project and Suspense Account .	
Transfer payments	N/A	N/A

Other general comments to the table