



**Forestry Department**

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

**GLOBAL FOREST RESOURCES  
ASSESSMENT 2010**

**COUNTRY REPORT**

**MALAYSIA**

FRA2010/123  
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## **The Forest Resources Assessment Programme**

Sustainable 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 flora 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) ).

The Global Forest Resources Assessment process is coordinated by the Forestry Department at FAO headquarters in Rome. The contact person for matters related to FRA 2010 is:

Mette Løyche Wilkie  
Senior Forestry Officer  
FAO Forestry Department  
Viale delle Terme di Caracalla  
Rome 00153, Italy

E-mail: [Mette.LoycheWilkie@fao.org](mailto:Mette.LoycheWilkie@fao.org)

Readers can also use the following e-mail address: [fra@fao.org](mailto:fra@fao.org)

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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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## Report preparation and contact persons

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

<b>Name (FAMILY NAME, First name)</b>	<b>Institution / address</b>	<b>E-mail</b>	<b>Fax</b>	<b>Tables</b>
Noraini, Azhar	Ministry of Natural Resources And Environment	azhar@nre.gov.my	603-88892672	All
Md.Yasin, Maimon	Ministry of Natural Resources And Environment	<u>maimon@nre.gov.my</u>	603-88892672	All
Yasin, Mohd Hizamri	Forestry Department Of Peninsular Malaysia	<u>hizamri@forestry.gov.my</u>	603-26925657	All
Rosli,Rosaizan Haryani	Forestry Department Of Peninsular Malaysia	<u>rosaizan@forestry.gov.my</u>	603-26925657	All
Bujang, Abdul Wahab	Forest Department Sarawak	<u>wahabb@sarawaknet.gov.my</u>	6082 - 441210	All
Mohamad Bohari, Ahmad Ashrin	Forest Department Sarawak	ahmadam@sarawaknet.gov.my	6082 - 441210	All
Lohuji, Paul Leo	Sabah Forestry Department	<u>Paulleo.Lohuji@sabah.gov.my</u>	6089-669170	All
Parlan, Ismail	Forest Research Institute Malaysia (FRIM)	<u>IsmailP@frim.gov.my</u>	603 62731314	7,8,16
Mohd Nor, Khamuruddin	Universiti Putra Malaysia	<u>kamardin@forn.upm.edu.my</u>	03-89432514	16
Mohammed, Ahmad Azhar	Department Of Wildlife And National Parks	azhar@wildlife.gov.my	603-9075 2873	All
Ibrahim, Almizi	Malaysia Timber Industry Board	almizi@mtib.gov.my	603- 92851477/1744	11,12, 13,17
Mohd Nor, Burhanuddin	Department Of Wildlife And National Parks	<u>burhan@wildlife.gov.my</u>	603-9075 2873	All

# 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
Forestry Department Of Peninsular Malaysia. <i>Annual Report</i>	H	Forest cover, timber and wood-based industries output.	2006/ 2007	Statistical information covering forest cover, timber and wood-based industries output in Peninsular Malaysia
Forestry Department Of Peninsular Malaysia. <i>Statistics Report</i>	H	Forest cover, timber and wood-based industries output	2006/ 2007	Statistical information covering forest cover, timber and wood-based industries output in Peninsular Malaysia
Forest Department Sarawak	H	Forest cover, timber and wood-based industries output.	2006/ 2007	Statistical information covering forest cover, timber and wood-based industries output in Sabah
Sabah Forestry Department	H	Forest cover, timber and	2006/ 2007	Statistical information covering forest cover, timber and wood-based industries output in

		wood-based industries output.		Sarawak
Department Of Wildlife and National Parks	H	Forest cover, timber and wood-based industries output.	2006/2007	Statistical information covering wildlife and national parks sector in Peninsular Malaysia
Ministry Of Plantation Industries and Commodities Malaysia. <i>Statistics on Commodities 2007.</i>	H	Wooded and non-wooded Tree Crop,	2007/2006	Statistical information covering primary and commodities based sector in Malaysia
FRA2005	H	Forest, other wooded land, other land, Inland water.	2005	

### 1.2.2 Classification and definitions

National class	Definition
Permanent Reserved Forest	Forested areas that are gazetted as Permanent Reserved Forest are being managed sustainably for environment and socio-economic purposes.
State land Forest	Natural and Planted forested areas outside Permanent Reserved Forest .
National Parks and Wildlife & Bird Sanctuary	Protected natural forested areas designated for the protection of the environment and the conservation of biological diversity
Rubber Plantation	Areas planted with rubber tree crops
Other agriculture crops	Areas planted with agricultural crops such as oil palms, coconut, paddy, tobacco, sugar cane, cocoa, tea and coffee
Other lands	Urban, mining and others built-up areas

### 1.2.3 Original data

The information for table 1 from the various years at Forestry Department Of Peninsular Malaysia Annual Reports, Forest Statistics Peninsular Malaysia, Department Forestry Sarawak, Department Forestry Sabah and Statistics on Commodities, Ministry of Plantation Industries and Commodities Malaysia were source of published information on forest cover and others relevant information. The following table provides the original information.

National 2010 Categories	Area ( 1000 Hectares)				
	1990	2000	2005	2006	2007
(a) Permanent Reserved Forest (PRF)					
- Peninsular Malaysia	4750	4800	4800	4726	4696
- Sabah	3350	3600	3600	3600	3605
- Sarawak	4500	6000	6000	6000	6000
<b>Total PRF</b>	<b>12600</b>	<b>14400</b>	<b>14400</b>	<b>14326</b>	<b>14301</b>
(b) State land Forest	6820	4640	4141	3529	3416
(c) National Parks and Wildlife & Bird Sanctuary	1120	1120	1120	1946	1946
<b>Total Forested Area (a+b+c)</b>	<b>20540</b>	<b>20160</b>	<b>19661</b>	<b>19801</b>	<b>19663</b>
(d) Rubber plantation	1836	1431	1229	1232	1207
<b>Total Rubber Plantation (d)</b>	<b>1836</b>	<b>1431</b>	<b>1229</b>	<b>1232</b>	<b>1207</b>
(e) Other land:					
- Oil palm	2029	3377	3802	4165	4238
- Agriculture Crops	1461	1007	959	851	844
- Urban and Other uses	6844	6735	7259	6661	6758
<b>Total Other Land (e)</b>	<b>10334</b>	<b>11119</b>	<b>11820</b>	<b>11677</b>	<b>11840</b>
Inland water bodies	120	120	120	120	120
<b>Total area for country</b>	<b>32830</b>	<b>32830</b>	<b>32830</b>	<b>32830</b>	<b>32830</b>

### 1.3 Analysis and processing of national data

#### 1.3.1 Calibration

Changes made to Urban and Other Uses to calibrate to FAOSTAT country area figures

National 2010 Categories	Area ( 1000 Hectares)				
	1990	2000	2005	2006	2007
(a) Permanent Reserved Forest (PRF)					
- Peninsular Malaysia	4750	4800	4800	4726	4696
- Sabah	3350	3600	3600	3600	3605
- Sarawak	4500	6000	6000	6000	6000
<b>Total PRF</b>	<b>12600</b>	<b>14400</b>	<b>14400</b>	<b>14326</b>	<b>14301</b>
(b) Stateland Forest	6820	4640	4141	3529	3416
(c) National Parks and Wildlife & Bird Sanctuary	1120	1120	1120	1946	1946
<b>Total Forested Area (a+b+c)</b>	<b>20540</b>	<b>20160</b>	<b>19661</b>	<b>19801</b>	<b>19663</b>
(d) Rubber plantation	1836	1431	1229	1232	1207
<b>Total Rubber Plantation (d)</b>	<b>1836</b>	<b>1431</b>	<b>1229</b>	<b>1232</b>	<b>1207</b>
(e) Other land:					
- Oil palm	2029	3377	3802	4165	4238
- Agriculture Crops	1461	1007	959	851	844
- Urban dan Other uses	6989	6880	7204	6806	6903
<b>Total Other Land (e)</b>	<b>10479</b>	<b>11264</b>	<b>11266</b>	<b>11822</b>	<b>11985</b>
Inland water bodies	119	119	119	119	119
<b>Total area for country</b>	<b>32974</b>	<b>32974</b>	<b>32974</b>	<b>32974</b>	<b>32974</b>

### 1.3.2 Estimation and forecasting

- The Figures for Permanent Reserved Forest and National Parks 1990, 2000 and 2005 are available, while figure for 2007 have been assumed as 2010.
- The Figures for 2010 for State land Forest has been forecasted as 3077 ('000ha) using linear trend (State land Forest,  $y = -113x + 230207$ )
- The figures for 2010 for Rubber Plantation has been forecasted as 1132 ('000ha) using linear trend (Rubber Plantation,  $y = -25x + 51382$ ).

### 1.3.3 Reclassification into FRA 2010 categories

National Classes	Percentage Allocation to a FRA Class			
	Forests	OWL	Other Land	Inland Water
Permanent Reserved Forest	100			
Stateland Forest	100			
National Parks and Wildlife & Bird Sanctuary	100			
Rubber Plantation	100			
Oil Palm Plantation			100	
Other Land:			100	
Inland water bodies				100

This leads to the following,

FRA Categories	Area (1000 hectares)			
	1990	2000	2005	2010
<b>Forests</b>				
Permanent Reserved Forest (PRF):	12600	14400	14400	14301
Stateland Forest	6820	4640	4141	3077
National Parks and Wildlife & Bird Sanctuary	1120	1120	1120	1946
Rubber Plantation	1836	1431	1229	1132
<b>(Sub Total)</b>	<b>(22376)</b>	<b>(21591)</b>	<b>(20890)</b>	<b>(20456)</b>
<b>Other Land:</b>	10479	11264	11965	12399
<b>Inland water bodies</b>	119	119	119	119
<b>Total area for country</b>	<b>32974</b>	<b>32974</b>	<b>32974</b>	<b>32974</b>



## 1.4 Data for Table T1

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	22 376	21 591	20 890	20456
Other wooded land	0	0	0	0
Other land	10479	11264	11965	12399
...of which with tree cover				
Inland water bodies	119	119	119	119
<b>TOTAL</b>	<b>32974</b>	<b>32974</b>	<b>32974</b>	<b>32974</b>

## 1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest	Area of Rubber Plantations has been added to forests only for reporting to FRA. The country wishes to maintain it separate from forests.	In general area at rubber plantation area has been decreasing over the years while areas for oil palm plantation area have been increasing. Most of oil palm areas are converted from these rubber plantations, due to economic reasons especially by large corporations beside other sources such as Stateland forest and some idle lands.
Other wooded land	There may exist an unknown extent of other wooded land but as it could not be estimated from available data it is included under Other land.	
Other land		Other lands were increased because of increasing area on oil palm land, urbanisation and others land use development.
Other land with tree cover		
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.	

### Other general comments to the table

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Expected year for completion of ongoing/planned national forest inventory and/or RS survey / mapping	
Field inventory	2002-2004/ 2010-2012
Remote sensing survey / mapping	Both

## 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 (sub-category of Private ownership)	Forest owned by individuals and families.
Private business entities and institutions (sub-category of Private ownership)	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 (sub-category of Private ownership)	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 (sub-category of Private ownership)	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
Forestry Department Of Peninsular Malaysia. <i>Annual Report</i>	H	Forest cover, timber and wood-based industries output.	1990/2000/2005	Statistical information covering Forestry Sector in Peninsular Malaysia
Forestry Department Of Peninsular Malaysia. <i>Statistics Report</i>	H	Forest cover, timber and wood-based industries output	1990/2000/2005	Statistical information covering Forestry Sector in Peninsular Malaysia
Sabah Forestry Department	H	Forest cover, timber and wood-based industries output	1990/2000/2005	Statistical information covering forestry sector in Sabah
Forest Department Sarawak	H	Forest cover, timber and wood-based industries output	1990/2000/2005	Statistical information covering forestry sector in Sarawak
Department of Wildlife and National Parks Peninsular Malaysia	H		1990/2000/2005	Statistical information covering wildlife and national parks sector in Peninsular Malaysia
FRA 2005	H	Forest, other wooded land, other land, Inland water.	2005	-

### 2.2.2 Classification and definitions

National class	Definition
Private ownership - Alienated land, Industrial land, Plantation land (Rubber, Oil Palm, Orchards)	Land administered under the National Land Code 1965 Stateland Rules
Public ownership - Permanent Forest Reserve - National Park - Wildlife and Bird Sanctuary - Stateland	Land administered under the National Forestry Act 1984; Land administered under the National Parks Act 1980; Land administered under the Protection of Wildlife Act 1972; State Forest Enactments National Parks (Johor) Corporation Enactment, 1989 Forest Enactment, 1968; Parks Enactment, 1984; Wildlife Conservation Enactment, 1997; Land Ordinance, 1930 (Sabah); Forest Ordinance 1954, Sarawak; Forest Rules 1962, Sarawak; Wildlife Protection Ordinance 1998, Sarawak; State Forest Policy 1954, Sarawak; National Parks and Nature Reserves Ordinance 1998, Sarawak.

### 2.2.3 Original data

Through an expert estimates some of the rubber plantations have been assumed as private plantations, while the remaining forests belong to the state.

## 2.3 Data for Table T2

**Table 2a - Forest ownership**

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public ownership	21877	21347	20559
Private ownership	499	244	331
...of which owned by individuals	n.a.	n.a.	n.a.
...of which owned by private business entities and institutions	n.a.	n.a.	n.a.
...of which owned by local communities	n.a.	n.a.	n.a.
...of which owned by indigenous / tribal communities	n.a.	n.a.	n.a.
Other types of ownership	0	0	0
<b>TOTAL</b>	<b>22 376</b>	<b>21 591</b>	<b>20 890</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?	<input checked="" type="checkbox"/>	Yes
	<input type="checkbox"/>	No
If No above, please describe below how the two differ:		
-		

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

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public Administration	20781	19328	18479
Individuals	0	0	0
Private corporations and institutions	1096	2019	2080
Communities	0	0	0
Other	0	0	0
<b>TOTAL</b>	<b>21877</b>	<b>21347</b>	<b>20559</b>

## 2.4 Comments to Table T2

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Public ownership		PRFs are gazetted by the government as a security of tenure of the forested areas. State land forests will be gazetted to be PRF and the remaining are earmarked for future land developments.
Private ownership		
Other types of ownership		
Management rights	Data on individuals, communities and others holder of management rights is not available.	

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
Forestry Department Of Peninsular Malaysia. <i>Annual Report</i>	H	Forest categories of primary designated, special designation and management categories.	1990/ 2000/ 2005/ 2006/ 2007	Statistical information covering forest categories, special designation and management categories in Peninsular Malaysia
Forestry Department Of Peninsular Malaysia. <i>Statistics Report</i>	H	Forest cover, timber and wood-based industries output	1990/ 2000/ 2005/ 2006/ 2007	Statistical information covering forest categories, special designation and management categories in Peninsular Malaysia

Sabah Forestry Department	H	Forest categories of primary designated, special designation and management categories.	1990/ 2000/ 2005	Statistical information covering forest categories, special designation and management categories in Sabah.
Forest Department Sarawak	H	Forest categories of primary designated, special designation and management categories.	1990/ 2000/ 2005	Statistical information covering forest categories, special designation and management categories in Sarawak.
Department of Wildlife and National Parks Peninsular Malaysia	H	Forest categories of primary designated, special designation and management categories.	1990/ 2000/ 2005	Statistical information covering forest categories, special designation and management categories in wildlife and National Parks in Peninsular Malaysia
FRA 2005	H	Forest categories of primary designated, special designation and management categories.		

### 3.2.2 Classification and definitions

National class	Definition
Primary Function - Permanent Reserve Forest - National Park - Wildlife and Bird Sanctuary  - Stateland Forest - Alienated Land - Plantation Land - Urban areas	Land administered under the National Forestry Act 1984, National Parks Act 1980, Protection of Wildlife Act 1972; National Parks (Johor) Corporation Enactment, 1989; Land administered under the National Land Code 1965; State Forest Enactments; State Forest Policy 1954, Sarawak; Forest Enactment, 1968; Parks Enactment, 1984 Wildlife Conservation Enactment, 1997; Land Ordinance, 1930 (Sabah); Statement of Forest Policy, 1954; Forest Ordinance 1954, Sarawak; Forest Rules, 1962, Sarawak; Wildlife Protection Ordinance 1998, Sarawak; Land Code 1958, Sarawak; National Land Code & Stateland Rules

### 3.2.3 Original data

Forest	1990	2000	2005	2007
<b>Production Forest in '000ha</b>				
- PRF	9900	11490	10590	11607
- Rubber plantation	1836	1431	1229	1207
<b>Protection in '000ha</b>				
- PRF	2700	2910	3810	2694
- National Park&wildlife&bird sanctuary	1120	1120	1120	1946
<b>Multiple purpose in'000ha</b>				
- Stateland Forest	6820	4640	4141	3416
<b>Total Forest in '000ha</b>	<b>22376</b>	<b>21591</b>	<b>20890</b>	<b>20870</b>

## 3.3 Analysis and processing of national data

### 3.3.1 Estimation and forecasting

- The Figures for Permanent Reserved Forest and National Parks 1990, 2000 and 2005 are available, while figure for 2007 have been assumed as 2010.
- The Figures for 2010 for State land Forest has been forecasted as 3077 ('000ha) using linear trend (State land Forest,  $y = -113x + 230207$ )
- The figures for 2010 for Rubber Plantation has been forecasted as 1132 ('000ha) using linear trend (Rubber Plantation,  $y = -25x + 51382$ ).

Forest	1990	2000	2005	2010
<b>Production Forest in '000ha</b>				
- PRF	9900	11490	10590	11607
- Rubber plantation	1836	1431	1229	1132
<b>Protection in '000ha</b>				
- PRF	2700	2910	3810	2694
- National Park&wildlife&bird sanctuary	1120	1120	1120	1946
<b>Multiple purpose in'000ha</b>				
- Stateland Forest	6820	4640	4141	3077
<b>Total Forest in '000ha</b>	<b>22376</b>	<b>21591</b>	<b>20890</b>	<b>20456</b>

## 3.4 Data for Table T3

Table 3a – Primary designated function

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production	11 736	12 921	11 819	12739
Protection of soil and water	2 700	2 910	3 810	2694
Conservation of biodiversity	1 120	1 120	1 120	1946
Social services	0	0	0	0
Multiple use	6 820	4 640	4 141	3077
Other (please specify in comments below the table)	0	0	0	0
No / unknown	0	0	0	0
<b>TOTAL</b>	<b>22 376</b>	<b>21 591</b>	<b>20 890</b>	<b>20456</b>



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

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Area of permanent forest estate	12600	14400	14400	14301
Forest area within protected areas	3820	4030	4930	4640
Forest area under sustainable forest management	12600	14400	14400	14301
Forest area with management plan	16420	18430	19330	18941

### 3.5 Comments to Table T3

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Production		Area for production forests were increased since 2005 due to new gazetment of PRF and establishment of planted forest.
Protection of soil and water		Area for protection of soil and water were decreased by year 2010. The extent of protection of soil and water areas decreased due to the forestry department's exercise to reclassify and recalculate of forests for protection of soil and water within the PRF's.
Conservation of biodiversity	Did not include forests gazetted for conservation of biodiversities within the PRF's.	Conservation of biodiversity areas are National parks and wildlife and birds sanctuary areas under the pure view of national park and wildlife department, whilst, PRF's, falls under the juristic diction of forestry's department.
Social services	Forest area designated primarily for social services.	
Multiple use		For year 2010, the area for multiple use will decrease as some of the areas will be gazetted as PRF (as production or protection forests) or excised for land development.
Other		
No / unknown designation		
Area of permanent forest estate	Permanents Forest Reserve (PRF) are managed in perpetuity or sustainable forest management in accordance to the definitions of Food Agriculture and Organizations (FAO), Intergovernmental Panel of Forest (IPF), Intergovernmental Forum on Forest (IFF), United Nation Forums on	PRF's areas are under the jurisdiction of forestry's department. National parks and wildlife and birds sanctuary areas are under the pure view of national park and wildlife department.

	Forest (UNFF), and International Tropical Timber Organizations (ITTO).	
Forest area within protected areas	Includes PRF designated for soil and water protection and natural parks and wildlife bird sanctuary	
Forest area under sustainable forest management	The Permanent Forest Reserve (PRF) is under sustainable forest management.	
Forest area with management plan		

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

## 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
Forestry Department Of Peninsular Malaysia. <i>Annual Report Year</i>	H	Naturally regenerated forest, characteristics categories, and special categories forest.	2006-2007	Statistical information covering naturally regenerated forest characteristics categories, special categories forest such as rubber plantation, mangroves and bamboo in Peninsular Malaysia.
Forestry Department Of Peninsular Malaysia. <i>Statistics Report</i>	H	Naturally regenerated forest, characteristics categories, and special categories forest.	2006-2007	Statistical information covering naturally regenerated forest characteristics categories, special categories forest such as rubber plantation, mangroves and bamboo in Peninsular Malaysia.
Sabah Forestry Department	H	Naturally regenerated forest, characteristics categories, special	2006-2007	Statistical information covering naturally regenerated forest characteristics categories, special categories forest such as rubber

		categories forest		Plantation, mangroves and bamboo in Sabah.
Forest Department Sarawak	H	Naturally regenerated forest, characteristics categories, special categories forest	2006-2007	Statistical information covering naturally regenerated forest characteristics categories, special categories forest such as rubber plantation, mangroves and bamboo in Sarawak.
Department of Wildlife and National Parks Peninsular Malaysia	H	Naturally regenerated forest, characteristics categories, special categories forest	2006-2007	Statistical information covering naturally regenerated forest characteristics categories in Wildlife and National Parks in Peninsular Malaysia.
FRA 2005	H			FRA 2005 Country Report

#### 4.2.2 Classification and definitions

National class	Definition
Primary	Virgin Jungle Reserves, National Parks and Wildlife Birds Sanctuary
Semi-natural	Consist of three broad forest types, namely Dipterocarp Forest, Peat Swamp Forest and Mangrove Forest.
Productive plantation	Forest plantation planted with fast-growing hardwood species, such as <i>Acacia mangium</i> , <i>Gmelina arborea</i> , and <i>Paraserianthes falcataria</i> , <i>P. merkusii</i> and <i>Araucaria</i> species. Includes Rubber Plantations.

#### 4.2.3 Original data

National Categories	Area (1000 hectares)				
	Forest				
	1990	2000	2005	2006	2007
- Forest plantation	120	228	258	399	468
- Rubber plantation	1,836	1,431	1,229	1232	1207
Sub-Total	1,956	1,659	1,573	1631	1675
Protective plantation	n.a	n.a	n.a	n.a	n.a

Note: Actual data for Total Area Forest Plantation in Malaysia

	Area ('1000 ha)	
	2006	2007
Rubber Plantation		
Malaysia	1232	1207
Forest Plantation		
Peninsular Malaysia	83	105
Sabah	133	181
Sarawak	182	182
Sub total	399	468
Total	1631	1675

### 4.3 Analysis and processing of national data

#### 4.3.1 Estimation and forecasting

**Forest in protected areas is considered as primary forest.**

Other naturally regenerated forests are calculated by difference between the total forest area, primary forest and planted forest.

#### 4.4 Data for Table T4

**Table 4a**

FRA Categories	Area (1000 hectares)			
	Forest			
	1990	2000	2005	2010
Primary	3820	3820	3820	3820
Other naturally regenerated forest	16600	16112	15497	14829
... of which of introduced species	0	0	0	0
Planted forest	1956	1659	1573	1807
... of which of introduced species				
<b>TOTAL</b>	<b>22,376</b>	<b>21,591</b>	<b>20,890</b>	<b>20,456</b>

**Table 4b**

FRA Categories	Area (1000 hectares)			
	1990	2000	2005	2010
Rubber Plantation (Forest)	1836	1431	1229	1132
Mangroves (Forest and OWL)	548	529	545	578
Bamboo (Forest and OWL)	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>	<b>n.a</b>

#### 4.5 Comments to Table T4

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Primary forest		There are no differences between years.
Other naturally regenerating forest		Areas for other naturally regenerating forest have decreased as they are productive forests.
Planted forest		Area for planted forest has increased since 2005.
Rubber plantations		Areas for rubber plantations will decrease.
Mangroves		Areas for mangroves forest will increase due to intensive reforestation projects.
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 National data

#### 5.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Forestry Department Of Peninsular Malaysia. <i>Annual Report</i>	H	Reforestation	1988-2007	Statistical information on reforestation area in Peninsular Malaysia
Forestry Department Of Peninsular Malaysia. <i>Statistics Report</i>	H	Reforestation	1988-2007	Statistical information on reforestation area in Peninsular Malaysia
Sabah Forestry Department	H	Reforestation	1988-2007	Statistical information on reforestation area in Sabah.
Forest Department Sarawak	H	Reforestation	1988-2007	Statistical information on reforestation area in Sarawak.

#### 5.2.2 Classification and definitions

National class	Definition
Afforestation	N/A
Reforestation	Re-establishment of forest through planting and/or deliberate seeding on land classified as forest.
Natural expansion of forest	N/A

*Note: (N/A = Not Available; n.a= Not Applicable)*

#### 5.2.3 Original data

The entire forest plantations have been assumed as reforestation areas.

### 5.3 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	989	6839	33009	940	6482	31154
...of which on areas previously planted						
Natural expansion of forest	N/A	N/A	N/A	N/A	N/A	N/A

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

### 5.4 Comments to Table T5

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Afforestation		
Reforestation	Note: Do not include mangrove forest areas that felled and planted within production areas as it part of management regime of mangrove forest in Malaysia.	Increasing trend especially in the stateland areas.
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
GOM. 1997. Forestry Department Of Peninsular Malaysia 1997. Third National Forest Inventory.	H	Growing Stock	1993	
GOM. 2004. Forestry Department Of Peninsular Malaysia 2004. Fourth National Forest Inventory.	H	Growing Stock	2003	

#### 6.2.2 Classification and definitions

National class	Definition
Virgin forest, good (stratum code 11)	Virgin (not yet logged) forests growing in dry-lands whose main species are: Red Merantis, Keruing, Seraya, Kelat, Balau
Virgin forest, poor (stratum code 12)	Virgin (not yet logged) forests growing in dry-lands whose main species are: Red Merantis, Medang, Keruing, Kelat, Kedondong
Logged 1991-2003 20 (stratum code 20)	Logged over forest.
Logged 1981-1990 (stratum code 21)	Logged over forest.
Logged 1971-1980 (stratum code 21)	Logged over forest.
Logged before 1971 (stratum code 23)	Logged over forest.
Peat Swamp Forest (stratum code 31)	Virgin
Logged Peat Swamp Forest (stratum code 32)	Logged over forest.
Logged Dipterocarp Forest (stratum code 40)	In the Stateland Forest
Logged Peat Swamp Forest (stratum code 41)	In the Stateland Forest
Protection Forest (stratum code 50)	In Permanent Reserve Forest

### 6.2.3 Original data

#### A. Peninsular Malaysia

##### A. For 1992: (Third National Forest Inventory for Peninsular Malaysia, 1991-1993)

National class	Stratum Code	Area ( ha)	>10 cm (m <sup>3</sup> /ha)	Gross Volume (m <sup>3</sup> )
Virgin forest, superior	11	430986	332.5	143302845
Virgin forest, good	12	578397	289.1	167214572
Virgin forest, moderate	13	735688	271.8	199959998
Virgin forest, poor	14	184275	192.6	35491365
Logged 1971-1980	23	864959	228.6	19729627
Logged 1961-1970	24	374717	223.7	83824192
Logged before 1960	25	373943	227.3	84997243
Stateland forest		2573049	182.0	468294918
<b>Total</b>		<b>6116014</b>	<b>225.7</b>	<b>1380814763</b>

Growing stock/ha=225m<sup>3</sup>/ha

##### B. For 2002: (Fourth National Forest Inventory for Peninsular Malaysia, 2001-2003)

National class	Stratum Code	Area ( ha)	>10 cm (m <sup>3</sup> /ha)	Gross Volume (m <sup>3</sup> )
Virgin forest, good	11	236292	309	73113692
Virgin forest, poor	12	505825	226	114119615
Logged 1991-2003	20	520193	166	86366596
Logged 1981-1990	21	733791	191	139810381
Logged 1971-1980	22	534549	226	120822989
Logged before 1971	23	223054	238	53065860
Peat Swamp Forest	31	84510	216	18218350
Logged Peat Swamp Forest	32	123114	172	21149025
Stateland Logged Dip Forest	40	390929	132	51751767
Stateland Logged P.S.Forest	41	56056	119	6665464
Protection Forest	50	2321701	237	54947976
<b>Total</b>		<b>5730014</b>	<b>215</b>	<b>1234561344</b>

Growing stock/ha=215 m<sup>3</sup>/ha

#### B. Sarawak

Information on growing stock is available only from FAO/UNDP assisted project (Forest Industries Development) inventory in 1974, which indicated a growing stock density of 135 m<sup>3</sup> /ha of net industrial stem wood under bark volume of trees 45 cm (dbh) and above.

#### C. Sabah

Information on growing stock of Sabah is quite old and limited to log over commercial Class II forests. This information indicates variation of growth stock per ha from 25 m<sup>3</sup> / ha in class 5 forest to 150 m<sup>3</sup> /ha in class 1 forests.

## 6.3 Analysis and processing of national data

### 6.3.1 Estimation and forecasting

The growing stock has been estimated and forecasted by calculating the growing stock per hectare for the reference years (1990, 2000 and 2005) and multiplying it with related extent of forest in respective years.

#### A. Growing Stock per hectare

##### Peninsular Malaysia Region

The growing stock has been estimated and forecasted by calculating the growing stock per hectare for the reference years (1990, 2000 and 2005). For this purpose, the weighted average per hectare growing stock from national inventories with reference years of 1992 and 2002 has been interpolated or extrapolated.

Variable	Volume in m <sup>3</sup> /ha					
	1992	2002	1990	2000	2005	2010
Weighted average Growing Stock per hectare	226	215	228	218	212	207

##### Sabah Region

In absence of sufficient information, the above weighted average figures calculated for the peninsular Malaysia region have been adopted for the forests in Sabah region.

##### Sarawak Region

In absence of sufficient information, the above weighted average figures calculated for the peninsular Malaysia region have been adopted for the forests in Sarawak region.

#### B. Growing Stock

Since the growing stock per hectare figure for all the three regions have been assumed to be same hence these figures have been multiplied with the total extent of forests reported (including rubber plantations) in Table 1 to estimate the total growing stock in forests in Malaysia.

Variables	Growing Stock in million m <sup>3</sup>			
	1990	2000	2005	2010
Extent of Forest in Table 1 in 000 ha	22 376	21 591	20 890	20 456
Growing stock per ha	228	218	212	207
<b>Total Growing Stock in million m<sup>3</sup></b>	<b>5 097</b>	<b>4 696</b>	<b>4 436</b>	<b>4 239</b>

The species-wise data is available from The Third and Fourth NFI for the peninsular region only. The average growing stock from this inventory has been applied to Sabah and Sarawak region as well as rubber plantations areas to calculate the total growing stock. The following species-wise distribution of the growing stock in 1990 and 2000 has been developed by using proportionate distribution (excluding rubber plantations) of species in the growing stock in peninsular region only for 1992. It may therefore not reflect the ground reality. For 2010 net growing stock per ha has been estimated by using NFI4 data.

For FRA 2005, information has been compiled and projected from preliminary results from NFI4 inventory data analysis. NFI4 was carried out between 2002 and 2004. Where else, data for FRA 2010 has been derived from actual NFI4 report. Malaysia intends to use actual NFI data.

Scientific name	Common name	2005	%
<i>Eugenia spp.</i>	Kelat	657	15
<i>Cinnamomum spp.</i>	Medang	479	11
<i>Canarium spp.</i>	Kedondong	406	9
<i>Shorea curtisii</i>	Meranti seraya	400	9
<i>Shorea leprosula</i>	Meranti tembaga	271	6
<i>Shorea platyclados</i>	Meranti bukit	267	6
<i>Koompassia</i>	Kempas, Tualang	225	5
<i>Palaquium</i>	Nyatoh	206	5
<i>Shorea ovalis</i>	Meranti kepong	194	4
<i>Shorea pauciflora</i>	Meranti nemesu	190	4
Remaining species		1141	
Total		<b>4436</b>	

### 6.3.2 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	<b>5097</b>	<b>4696</b>	<b>4436</b>	<b>4239</b>	n.a.	n.a.	n.a.	n.a.
... of which coniferous	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
... of which broadleaved	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Growing stock of commercial species	n.a.	n.a.	n.a.	n.a.	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>Syzygium spp.</i>	Kelat	755	695	657
2 <sup>nd</sup>	<i>Cinnamomum spp.</i>	Medang	551	507	479
3 <sup>rd</sup>	<i>Canarium spp.</i>	Kedondong	466	430	406
4 <sup>th</sup>	<i>Shorea curtisii.</i>	Meranti seraya	459	423	400
5 <sup>th</sup>	<i>Shorea leprosula</i>	Meranti tembaga	311	287	271
6 <sup>th</sup>	<i>Shorea platyclados</i>	Meranti bukit	307	283	267
7 <sup>th</sup>	<i>Koompassia spp.</i>	Kempas, Tualang	259	238	225
8 <sup>th</sup>	<i>Palaquium spp.</i>	Nyatoh	237	219	206
9 <sup>th</sup>	<i>Shorea ovalis</i>	Meranti kepong	222	205	194
10 <sup>th</sup>	<i>Shorea pauciflora</i>	Meranti nemesu	218	201	190
Remaining			1312	1208	1141
<b>TOTAL</b>			<b>5097</b>	<b>4696</b>	<b>4436</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 value**

Item	Value	Complementary information
Minimum diameter (cm) at breast height <sup>1</sup> of trees included in growing stock (X)	10 cm	
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	First branch	
Minimum diameter (cm) of branches included in growing stock (W)		
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	The growing stock figures have changed since FRA 2005 where they were based on preliminary NFI4 data.	
Growing stock of broadleaved / coniferous		
Growing stock of commercial species		
Growing stock composition	Remainder of species includes rubber	

### Other general comments to the table

The species-wise distribution of the growing stock has been developed by using proportionate distribution (excluding rubber plantations) of species in 1992 in the growing stock in peninsular region only and it may therefore not reflect the ground reality.

<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.

### 7.1 National data

#### 7.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)
FRA 2010 Guidelines		Above ground biomass, below ground biomass	

#### 7.2.2 Classification and definitions

No National definitions and classes are available for this table.

#### 7.2.3 Original data

The growing stock figures for 2010 have been used for this table.

Following the FRA 2010 guidelines the BCEF of 0,95 for humid tropical forests and a root shoot ratio of 0,20 have been applied.

### 7.2 Analysis and processing of national data

Variables	1990	2000	2005	2010
Growing Stock in forests in million m <sup>3</sup>	5,097	4,696	4,436	4,239
BCEF	0.95	1.3	1.3	1.3
Above Ground Biomass million t	4,842	6,105	5,767	5,511
Root ratio	0.24	0.24	0.24	0.24
Below ground biomass million t	1,162	1,465	1,384	1,323

### 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	4,842	6,105	5,767	5,511	n.a	n.a	n.a	n.a
Below-ground biomass	1,162	1,465	1,384	1,323	n.a	n.a	n.a	n.a
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

### 7.5 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
Other wooded land is not applicable (n.a) in Malaysia.

## 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

#### 8.2.3 Original data

This table uses biomass data from table 7.

### 8.3 Analysis and processing of national data

The default conversion factor (biomass to carbon) factor of 0.47 has been adopted from to estimate carbon stock in forests.

Variables	1990	2000	2005	2010
Above-ground biomass	4,842	6,105	5,767	5,511
Default factor	0.47	0.47	0.47	0.47
Carbon in Above ground biomass	2,276	2,869	2,711	2,590
Below-ground biomass	1,162	1,465	1,384	1,323
Default factor	0.47	0.47	0.47	0.47
Carbon in Below ground biomass	546	689	651	622



#### 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	2276	2869	2711	2590	n.a	n.a	n.a	n.a
Carbon in below-ground biomass	546	689	651	622	n.a	n.a	n.a	n.a
<b>Sub-total: Living biomass</b>	2822	3558	3361	3212	n.a	n.a	n.a	n.a
Carbon in dead wood	n.a	n.a	n.a	n.a	n.a.	n.a	n.a	n.a
Carbon in litter	47	45	44	43	n.a	n.a	n.a	n.a
<b>Sub-total: Dead wood and litter</b>	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Soil carbon	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

#### 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

Other wooded land is not applicable (n.a) in Malaysia

## 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
Forestry Department Of Peninsular Malaysia,	H	Number of fires and area for wildfire.	2003-2007	
Forestry Department Of Peninsular Malaysia, (Forest Plantation Unit, 2007)	H	Number of fires and area for wildfire.	2003-2007	Statistical information covering a number of fires and area in Peninsular Malaysia forest.
Sabah Forestry Department	H	Number of fires and area for wildfire	2003-2007	Statistical information covering a number of fires and area in Sabah forest.
Forest Department Sarawak	H	Number of fires and area for wildfire	2003-2007	Statistical information covering a number of fires and area in Sarawak forest.

#### 9.2.2 Classification and definitions

National class	Definition
Forest Fire	Occurrences in the forested land

#### 9.2.3 Original data

Only following documented information is available.

Year wise Fire Damage in ha												
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
690	116	418	56	156	25	18	26	1646	27	6	297	1350

Year wise Fire Damage in ha				
2003	2004	2005	2006	2007
1320	1301	2231	1325	1350

### 9.3 Analysis and processing of national data

#### 9.3.1 Estimation and forecasting

The average figure of 408 ha for 1990 has been calculated using only three years data (1990 to 1992). The average figure of 665 ha for 2000 is based on five year data (1998 to 2002). The average figure of 1505 ha for 2005 is based five year data (2003 to 2007).

### 9.4 Data for Table T9

Table 9a

FRA 2010 category	Annual average for 5-year period					
	1990		2000		2005	
	1000 hectares	number of fires	1000 hectares	number of fires	1000 hectares	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	0.408	11	0.665	14.8	1.505	14
... of which on other wooded land	n.a	n.a	n.a	n.a	n.a	n.a
... of which on other land	n.a	n.a	n.a	n.a	n.a	n.a

Note: (N/A = Not Available; n.a= Not Applicable)

Table 9b

FRA 2010 category	Proportion of forest area affected by fire (%)		
	1990	2000	2005
Wildfire	100	100	100
Planned fire	0	0	0

Note: The figures for the reporting years refer to the averages of annually affected areas for the 5-year periods 1990-1992, 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 average figure for 2005 is based on five years (2003-2007). land areas affected by fire were increased from year 2000.
Number of fires		
Wildfire / planned fire		Proportions of forest area affected by fire are 100% wildfire.

Other general comments to the table

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

No data is available for this reporting table.

## 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
Forestry Department Of Peninsular Malaysia. <i>Annual Report.</i>	H	Industrial roundwood removals, woodfuel removals	1998-2007	Statistical information for industry wood removal and woodfuel removals in Peninsular Malaysia
Forestry Department Of Peninsular Malaysia. <i>Statistics Report</i>	H	Industrial roundwood removals, woodfuel removals	1998-2007	Statistical information for industry wood removal and woodfuel removals in Peninsular Malaysia
Forest Department Sarawak.	H	Industrial roundwood removals, woodfuel removals	1998-2007	Statistical information for industry wood removal and woodfuel removals in Sarawak.
Sabah Forestry Department	H	Industrial roundwood removals, woodfuel removals	1998-2007	Statistical information for industry wood removal and woodfuel removals in Sabah.
Malaysian Timber Industry Board	H	Industrial roundwood removals, woodfuel removals	1998-2007	Statistical information for industry wood removal and woodfuel removals in Malaysia

#### 11.2.2 Classification and definitions

National class	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.

### 11.2.3 Original data

## 11.3 Analysis and processing of national data

### 11.3.1 Estimation and forecasting

The figures for the reporting years refer to the averages of annually affected areas for the periods 1988-1992, 1998-2002 and 2003-2006 respectively

#### Industrial Roundwood

The average figure (1988 - 1992) are 42,111 (1000 m<sup>3</sup>) and used for 1990.

The average figure (1998 - 2002) are 19,084 (1000 m<sup>3</sup>) and used for 2000.

The average figure (2003 - 2006) are 23,223 (1000 m<sup>3</sup>) and used for 2005.

#### Woodfuel

The average figure (1988 - 1992) are 4,011 (1000 m<sup>3</sup>) and used for 1990.

The average figure (1998 - 2002) are 3,331 (1000 m<sup>3</sup>) and used for 2000.

The average figure (2003 - 2006) are 3,093 (1000 m<sup>3</sup>) and used for 2005.

The reported figures on wood removals above are volume of roundwood under bark while FRA 2010 requests information on volume of roundwood over bark. A global default conversion factor of 1.15 is used for converting volume under bark to volume over bark.

#### Industrial Roundwood

For 1990:  $42111 * 1.15 = 48,428$

For 2000:  $19084 * 1.15 = 21,946$

For 2005:  $23223 * 1.15 = 26,706$

#### Woodfuel

For 1990:  $4,011 * 1.15 = 4,613$

For 2000:  $3,331 * 1.15 = 3,831$

For 2005:  $3,093 * 1.15 = 3,557$

## 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.)	48428	21946	26706	4,613	3,831	3,557
... of which from forest	n.a	n.a	n.a	n.a	n.a	n.a
Unit value (local currency / m <sup>3</sup> o.b.)	198.5	404.2	383.8	n.a	n.a	n.a
<b>Total value (1000 local currency)</b>	<b>9612958</b>	<b>8870573</b>	<b>10249763</b>	n.a	n.a	n.a

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. (N/A = Not Available; n.a= Not Applicable)

	1990	2000	2005
Name of local currency	Ringgit Malaysia (RM)	Ringgit Malaysia (RM)	Ringgit Malaysia (RM)

### 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		Volume of industrial roundwood removals were decreased from 2005.
Total volume of woodfuel removals		Volume of woodfuel removals was decrease by years increase
Unit value		
Total value		

Other general comments to the table



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

### 12.1 FRA 2010 Categories and definitions

Term	Definition
Non-wood forest product (NWFP)	Goods derived from forests that are tangible and physical objects of biological origin other than wood.
Value of NWFP removals	For the purpose of this table, value is defined as the market value at the site of collection or forest border.

#### NWFP categories

Category
<p><b><u>Plant products / raw material</u></b></p> <ol style="list-style-type: none"> <li>1. Food</li> <li>2. Fodder</li> <li>3. Raw material for medicine and aromatic products</li> <li>4. Raw material for colorants and dyes</li> <li>5. Raw material for utensils, handicrafts &amp; construction</li> <li>6. Ornamental plants</li> <li>7. Exudates</li> <li>8. Other plant products</li> </ol> <p><b><u>Animal products / raw material</u></b></p> <ol style="list-style-type: none"> <li>9. Living animals</li> <li>10. Hides, skins and trophies</li> <li>11. Wild honey and bee-wax</li> <li>12. Wild meat</li> <li>13. Raw material for medicine</li> <li>14. Raw material for colorants</li> <li>15. Other edible animal products</li> <li>16. Other non-edible animal products</li> </ol>

### 12.2 National data

#### 12.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Forestry Department Of Peninsular Malaysia	H	Non-wood Product (plant)	2005	Statistical information for non-wood product (plant) in Peninsular Malaysia.
Sabah Forestry Department	H	Non-wood Product (plant and animals)	2005	Statistical information for non-wood product (plant and animals) in Sabah.
Forest Department Sarawak	H	Non-wood Product (plant and animals)	2005	Statistical in formations for non-wood product (plant and animals) in Sarawak.

Department Of Wildlife and National Parks	H	Non-wood Product (animals)	2005	Statistical information for non-wood product (Animal) in Peninsular Malaysia.
Malaysian Timber Industry Board	H	Industrial roundwood removals, woodfuel removals	1998-2002	Statistical information for non-wood product (plant)

## 12.2.2 Classification and definitions

National class	Definition
Non-wood forest product (NWFP)	Goods derived from forests that are tangible and physical objects of biological origin other than wood.

## 12.2.3 Original data

See final reporting table.

## 12.3 Data for Table T12

Rank	Name of product	Key species	Unit	NWFP removal (2005)		NWFP Categories
				Quantity	Value (1000 RM)	
1st	Agarwood				91850	3
2nd	Birds Nests				21734	16
3rd	Illipeanuts				15244	8
4th	Rattan				8905	10
5th	Skin (Phyton and Monitor lizards)				1178	10
6th	Wild Boar				480	12
7th	Python				147	9
8th	Attap (nypa)				139	5
9th	Monitor lizards				128	9
10th	Camphor oil ( <i>Dryobalanop aromatica</i> )				109	8
	All other plant/animals products				23610	
<b>Total</b>					<b>163,524</b>	

	2005
Name of local currency	Ringgit Malaysia (RM)

## 12.4 Comments to Table T12

Variable / category	Comments related to data, definitions, etc.
10 most important products	Agarwood was the higher value from others product. This is including woodchip product, sawdust and oil extract for agarwood.
Other plant products	Except 10 most important plant products.
Other animal products	Except 10 most important animals' products.
Value by product	Values of NWFP (animals) are valued based of license while m <sup>3</sup> were applicable value for NWFP (plant).
Total value	

Other general comments to the 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
Forestry Department Of Peninsular Malaysia. <i>Annual Report.</i>	H	Full time equivalents(FTE), employment(paid and self employment)	1990 - 2005	Statistical information for employment in forestry sectors in Peninsular Malaysia.
Forestry Department Of Peninsular Malaysia. <i>Statistics Report</i>	H	Full time equivalents(FTE), employment(paid and self employment)	1990 - 2005	Statistical information for employment in forestry sectors in Peninsular Malaysia.
Sabah Forestry Department	H	Full time equivalents(FTE), employment(paid and self employment)	1990 - 2005	Statistical information for employment in forestry sectors in Sabah.
Forest Department Sarawak.	H	Full time equivalents(FTE), employment(paid and self employment)	1990 - 2005	Statistical information for employment in forestry sectors in Sarawak.
Department Of Wildlife and National Parks	H	Full time equivalents(FTE), employment(paid and self employment)	1990 - 2005	Statistical information for employment in forestry sectors in Peninsular Malaysia.

Malaysian Timber Industry Board	H	Industrial roundwood removals, woodfuel removals	1998-2002	Statistical informations.

### 13.2.2 Classification and definitions

National class	Definition
Primary production of goods.	Employment in the logging sector.

### 13.2.3 Original data

FRA Categories	Employment (1000 person-years)		
	1990	2000	2005
Logging	67.3	58.9	119
Staff of Forest Department	10.5	8.3	8.0
Unspecified forestry activities	n.a	n.a	n.a
<b>TOTAL</b>	<b>78</b>	<b>67</b>	<b>127</b>

## 13.3 Analysis and processing of national data

### 13.3.1 Estimation and forecasting

The forest department staffs looks after both the provision of services and the production of goods from forests. Therefore the total strength has been apportioned to these two categories based on the ratio of the area under “protection” (17% in 1990, 19% in 2000 and 18% in 2005 of the total forest area) and “rest of the forests” (83%, 81% and 82%).

Employment in primary production of goods.

$$1990: 67.3 + 10.5 * 0.83 = 76$$

$$2000: 58.9 + 8.3 * 0.81 = 66$$

$$2005: 119 + 8.0 * 0.82 = 125$$

### 13.4 Data for Table T13

FRA 2010 Category	Employment (1000 years FTE)		
	1990	2000	2005
Employment in primary production of goods	76	66	125
...of which paid employment	76	66	125
...of which self-employment	n.a.	n.a.	n.a.
Employment in management of protected areas	2	2	2

### 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	Employment in the logging sector.	
Paid employment / self-employment		
Employment in management of protected areas		

Other general comments to the table

## 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) on 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	1992
	Reference to document	National Forestry Act, 1984; Sarawak Forest Ordinance, 1954; State Forest Policy, 1954 [Sabah]. National Parks Act, 1980 CITES, 2008
<b>National forest programme (nfp)</b>		<input checked="" type="checkbox"/> Yes
		<input type="checkbox"/> No
If Yes above, provide:	Name of nfp in country	A National Forest Programme for Malaysia; ' <i>Process, Planning and Implementation</i> '
	Starting year	2006
	Current status	<input type="checkbox"/> In formulation
		<input checked="" type="checkbox"/> In implementation
		<input type="checkbox"/> Under revision
Reference to document or web site	<input type="checkbox"/> Process temporarily suspended	
<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	1984
	Year of latest amendment	1992
	Reference to document	National Forestry Act 1984; National Parks Act 1980; Protection of Wildlife Act 1972; State Forest Enactments; National Parks (Johor) Corporation Enactment, 1989; State Forest Policy 1954, Sarawak; Forest Enactment, 1968; Parks Enactment, 1984; Wildlife Conservation Enactment, 1997; Land Ordinance, 1930 (Sabah); Statement of Forest Policy, 1954; Forest Ordinance, 1954, Sarawak; Forest Rules 1962, Sarawak; Wildlife Protection Ordinance 1998, Sarawak; Land Code 1958, Sarawak.



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.		
<b>Sub-national forest policy statements</b>	<input checked="" type="checkbox"/>	Yes
	<input type="checkbox"/>	No
If Yes above, indicate the number of regions/states/provinces with forest policy statements	3	
<b>Sub-national Laws (Acts or Codes) on forest</b>	<input checked="" type="checkbox"/>	Yes
	<input type="checkbox"/>	No
If Yes above, indicate the number of regions/states/provinces with Laws on forests	3	

### 14.3 Comments to Table T14

Variable / category	Comments related to data, definitions, etc.
Forest policy statement with national scope	
National forest programme (nfp)	
Law (Act or Code) on forest with national scope	
Sub-national forest policy statements	
Sub-national Laws (Acts or Codes) on forest	

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 Natural , Resources and Environment	
Level of subordination of Head of Forestry within the Ministry	X	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	<ul style="list-style-type: none"> <li>- Ministry of Plantation Industries and Commodities Malaysia.</li> <li>- Forestry Department Of Peninsular Malaysia</li> <li>- Forest Department Sarawak</li> <li>- Sabah Forestry Department</li> <li>- Department of Wildlife and National Parks Peninsular Malaysia</li> <li>- Forest Research Institute Malaysia</li> <li>- Malaysian Timber Industry Board.</li> <li>- Wildlife Department Sabah</li> <li>- Sabah Parks</li> </ul>	
Institution(s) responsible for forest law enforcement	<ul style="list-style-type: none"> <li>- Forestry Department Of Peninsular Malaysia</li> <li>- Forest Department Sarawak</li> <li>- Sabah Forestry Department</li> <li>- Department of Wildlife and National Parks Peninsular Malaysia</li> <li>- Malaysian Timber Industry Board.</li> <li>- Sarawak Forest Council</li> </ul>	

**Table 15b – Human resources**

FRA 2010 Category	Human resources within public forest institutions ('000)		
	2000	2005	2008
	Number	Number	Number
Total staff	11 000	8 400	8 600
...of which with university degree or equivalent	n.a.	n.a.	n.a.

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	Minister holding the main responsibility for forest issues and the formulation of the forest policy.	
Level of subordination of Head of Forestry within the Ministry	Head of forestry within the ministry is the Secretary General of Natural Resources and Environment.	
Other public forest agencies at national level	Basically public forest agencies are under the preview of Natural Resources Environment and Ministry Of Plantation Industries and Commodities Malaysia	
Institution(s) responsible for forest law enforcement		
Human resources within public forest institutions	Permanent civil servant within public forest institutions only.	

#### Other general comments to the table

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## 16 Table T16 – Education and research

### 16.1 FRA 2010 Categories and definitions

Term	Definition
Forest-related education	Post-secondary education programme with focus on forests and related subjects.
Doctor's degree (PhD)	University (or equivalent) education with a total duration of about 8 years.
Master's degree (MSc) or equivalent	University (or equivalent) education with a total duration of about five years.
Bachelor's degree (BSc) or equivalent	University (or equivalent) education with a duration of about three years.
Technician certificate or diploma	Qualification issued from a technical education institution consisting of 1 to 3 years post secondary education.
Publicly funded forest research centers	Research centers primarily implementing research programmes on forest matters. Funding is mainly public or channelled through public institutions.

### 16.2 National data

#### 16.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Sabah Forestry Department	H	Forest related education and research in forestry sector	2000,2005 and 2008	Information covering forest professional working in research based on forestry sector in Sabah.
Forest Department Sarawak	H	Forest related education and research in forestry sector	2000,2005 and 2008	Information covering forest professional working in research based on forestry sector in Sarawak.
University Putra Malaysia	H	Forest related education and research in forestry sector	2000,2005 and 2008	Information covering forest education and student from forestry and related programme.
Forest Research Institute Malaysia	H	Forest related education and research in forestry sector	2000,2005 and 2008	Information covering forest professional working in research based on forestry sector in Peninsular Malaysia.

### 16.3 Data for Table T16

FRA 2010 Category	Graduation <sup>1)</sup> of students in forest-related education					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Master's degree (MSc) or equivalent	81	64.2	76	47.37	50	52
Bachelor's degree (BSc) or equivalent	202	46.04	520	62.12	640	70.16
Forest technician certificate / diploma	265	43.4	520	58.46	245	48.98

FRA 2010 Category	Professionals working in publicly funded forest research centres <sup>2)</sup>					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Doctor's degree (PhD)	74	5	83	18	85	17
Master's degree (MSc) or equivalent	95	14	126	21	126	34
Bachelor's degree (BSc) or equivalent	121	32	170	41	169	64

Notes:

1. Graduation refers to the number of students that have successfully completed a Bachelor's or higher degree or achieved a certificate or diploma as forest technician.
2. Covers degrees in all sciences, not only forestry.

#### 16.4 Comments to Table T16

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Graduation of students in forest-related education	Post-secondary education programme with focus on forests and related subjects.	
Professionals working in public forest research centres	Full time professional's processed Bsc, Ms, and Phd at public.	

Other general comments to the 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 (sub-category to Public expenditure)	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 (sub-category to Public expenditure)	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 National data

#### 17.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Forestry Department Of Peninsular Malaysia	H	Forest revenue, expenditure for public expenditure and operational	2000, 2005	Statistical information covering forest revenue, public expenditure and operational expenditure in Peninsular Malaysia
Sabah Forestry Department	H	Forest revenue, expenditure for public expenditure and operational	2000, 2005	Statistical information covering forest revenue, public expenditure and operational expenditure in Sabah.
Forest Department Sarawak	H	Forest revenue, expenditure for public expenditure and operational	2000, 2005	Statistical information covering forest revenue, public expenditure and operational expenditure in Sarawak.
Department of Wildlife and National Parks	H	Forest revenue, expenditure for public expenditure and operational	2000, 2005	Statistical information covering forest revenue, public expenditure and operational expenditure in wildlife and national parks Peninsular Malaysia.
Forest Research Institute Malaysia		Forest revenue, expenditure for public	2000,	Statistical information covering forest revenue, public expenditure and

	H	expenditure and operational	2005	operational expenditure in Peninsular Malaysia
Malaysian Timber Industry Board	H	Industrial roundwood removals, woodfuel removals	1998-2002	Statistical information

### 17.2.2 Classification and definitions

National class	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.
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.

### 17.3 Data for Table T17

Table 17a - Forest revenues

FRA 2010 Categories	Revenues (1000 local currency)	
	2000	2005
Forest revenue	1531084	1606191

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	285525	373205	n.a	n.a	285525	373205
Transfer payments	n.a	n.a	n.a	n.a	n.a	n.a
<b>Total public expenditure</b>	285525	373205	n.a	n.a	285525	373205
If transfer payments are made for forest management and conservation, indicate for what specific objective(s) - Please tick all that apply.	<input type="checkbox"/>	Reforestation				
	<input type="checkbox"/>	Afforestation				
	<input type="checkbox"/>	Forest inventory and/or planning				
	<input type="checkbox"/>	Conservation of forest biodiversity				
	<input type="checkbox"/>	Protection of soil and water				
	<input type="checkbox"/>	Forest stand improvement				
	<input type="checkbox"/>	Establishment or maintenance of protected areas				
<input type="checkbox"/>	Other, specify below					

#### 17.4 Comments to Table T17

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest revenue		Forest revenue for 2005 was increased since 2000.
Operational expenditure		Operational expenditure was increased since 2000.
Transfer payments		-

Other general comments to the table