

GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

Malaysia

Rome, 2014

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Global Forest Resources Assessment (FRA). This country report is prepared as a contribution to the FAO publication, the Global Forest Resources Assessment 2015 (FRA 2015).

The content and the structure are in accordance with the recommendations and guidelines given by FAO in the document Guide for country reporting for FRA 2015 (<http://www.fao.org/3/a-au190e.pdf>). These reports were submitted to FAO as official government documents.

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After the deadline for reporting to FRA 2015 an updated version of the country report of Malaysia was submitted.

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Introductory Text

Place an introductory text on the content of this report

A special committee was set up by the Ministry of Natural Resources and Environment Malaysia to coordinate the preparation of FRA 2015 Malaysia Report. Members of task force comprise of representatives from relevant government agencies. Data and information for the preparation of this report were derived from annual reports, statistical reports, and relevant documents from government agencies. Mini workshops were conducted to harmonise and verify data gathered. Draft FRA 2015 country report were presented to the special committee for further comment and endorsement.

Desk Study?

Check "yes" if this survey is a Desk Study, "no" otherwise	
Desk Study?	no

1. What is the area of forest and other wooded land and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

1.1 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified as "Forest" spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of 5-10 percent or trees able to reach these thresholds ; or with a combined cover of shrubs bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as "Forest" or "Other wooded land".
...of which with tree cover (<i>sub-category</i>)	Land considered as "Other land", that is predominantly agricultural or urban lands use and has patches of tree cover that span more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity. It includes bothe forest and non-forest tree species.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.
Forest expansion	Expansion of forest on land that, until then, was not defined as forest.
...of which afforestation (<i>sub-category</i>)	Establishment of forest through planting and/or deliberate seeding on land that, until then, was not defined as forest.
...of which natural expansion of forest (<i>sub-category</i>)	Expansion of forests through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture).
Deforestation	The conversion of forest to other land use or the longterm reduction of the tree canopy cover below the minimum 10 percent threshold.
...of which human induced (<i>sub-category</i>)	Human induced conversion of forest to other land use or the permanent reduction of the tree canopy cover below the minimum 10 percent threshold.
Reforestation	Natural regeneration or re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.
...of which artificial reforestation (<i>sub-category</i>)	Re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.

1.2 National data

1.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Of Peninsular Malaysia. Annual Report	Forest cover, timber and wood-based industries output.	2006 - 2012	Statistical information covering forest cover, timber and wood-based industries output in Peninsular Malaysia

2	Forestry Department Of Peninsular Malaysia. Annual Report	Reforestation	1988-2012	Statistical information on reforestation area in Peninsular Malaysia
3	Forestry Department Of Peninsular Malaysia. Statistics Report	Forest cover, timber and wood-based industries output	2006-2012	Statistical information covering forest cover, timber and wood-based industries output in Peninsular Malaysia
4	Forestry Department Of Peninsular Malaysia. Statistics Report	Reforestation	1988-2012	Statistical information on reforestation area in Peninsular Malaysia
5	Sarawak Forest Department	Forest cover, timber and wood-based industries output	2006 -2012	Statistical information covering forest cover, timber and wood-based industries output and wildlife and national park statistics in Sarawak.
6	Sarawak Forest Department	Reforestation	1988-2012	Statistical information on reforestation area in Sarawak.
7	Sabah Forestry Department	Forest cover, timber and wood-based industries output.	2006 -2012	Statistical information covering forest cover, timber and wood-based industries output and wildlife and national park statistics in Sabah.
8	Sabah Forestry Department	Reforestation	1988-2012	Statistical information on reforestation area in Sabah.
9	Department Of Wildlife and National Parks. Compendium	Wildlife and national parks	2006-2012	Statistical information covering wildlife and national parks in Peninsular Malaysia.
10	Ministry Of Plantation Industries and Commodities Malaysia. Statistics on Commodities	Wooded and non- wooded Tree Crop.	2006 -2012	Statistical information covering primary and commodities based sector in Malaysia.
11	FRA 2010	Pre-filled data	N/A	N/A
12	FRA 2015 Guidelines	FAOSTAT for country area	2013	Country area adjusted according to Appendix 2 – List of UN Official Country Areas
13	Department Of Survey & Mapping Malaysia	Total area for country	2005	Statistical information covering land area for Peninsular Malaysia, Sabah and Sarawak

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 forests outside Permanent Reserved Forest.
National Parks and Wildlife & Bird Sanctuary	Protected natural forest areas designated for the protection of environment and 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
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

1.2.3 Original data

Forest area						
The information for Question 1 is derived from Annual Reports of Forestry Department of Peninsular Malaysia, Forest Statistics Peninsular Malaysia, Sarawak Forestry Department, Sabah Forestry Department and Statistics On Commodities, Ministry of Plantation Industries and Commodities Malaysia. The following table provides the original information.						
National 2015 Categories	Area (1000 Hectares)					
	1990	2000	2005	2010	2011	2012
(a) Permanent Reserved Forest (PRF)						
- Peninsular Malaysia	4,750	4,800	4,800	4,920	4,912	4,894
- Sabah	3,350	3,600	3,600	3,607	3,607	3,609
- Sarawak	4,500	6,000	6,000	6,000	6,000	6,000
Total PRF	12,600	14,400	14,400	14,526	14,519	14,503

(b) State land Forest	6,820	4,640	4,141	4,718	4,630	4,656
(c) National Parks and Wildlife & Bird Sanctuary	1,120	1,120	1,120	1,859	1,859	1,859
Total Forested Area (a+b+c)	20,540	20,160	19,661	21,104	21,009	21,019
(d) Rubber plantation	1,836	1,431	1,229	1,020	1,023	1,042
Total Rubber Plantation (d)	1,836	1,431	1,229	1,020	1,023	1,042
(e) Other land:						
- Oil palm	2,029	3,377	3,802	4,854	5,000	5,077
- Agriculture Crops	1,461	1,007	959	848	861	861
- Urban and Other uses	6,844	6,735	7,259	5,022	4,955	4,849
Total Other Land (e)	10,334	11,119	11,820	10,724	10,816	10,787
Inland water bodies	120	120	120	424	424	424
Total area for country	32,830	32,830	32,830	33,272	33,272	33,272

Forest expansion, reforestation

The entire forest plantations have been assumed as reforestation areas.

1.3 Analysis and processing of national data

1.3.1 Adjustment

Forest area						
Figures on Urban and Other Uses were adjusted to conform to FAOSTAT country area figures.						
National 2015 Categories	Area (1000 Hectares)					
	1990	2000	2005	2010	2011	2012
(a) Permanent Reserved Forest (PRF)						
- Peninsular Malaysia	4,750	4,800	4,800	4,920	4,912	4,894
- Sabah	3,350	3,600	3,600	3,607	3,607	3,609
- Sarawak	4,500	6,000	6,000	6,000	6,000	6,000
Total PRF	12,600	14,400	14,400	14,526	14,519	14,503
(b) State land Forest	6,820	4,640	4,141	4,718	4,630	4,656
(c) National Parks and Wildlife & Bird Sanctuary	1,120	1,120	1,120	1,859	1,859	1,859
Total Forested Area (a+b +c)	20,540	20,160	19,661	21,104	21,009	21,019
(d) Rubber plantation	1,836	1,431	1,229	1,020	1,023	1,042

Total Rubber Plantation (d)	1,836	1,431	1,229	1,020	1,023	1,042
(e) Other land:						
- Oil palm	2,029	3,377	3,802	4,854	5,000	5,077
- Agriculture Crops	1,461	1,007	959	848	861	861
- Urban and Other uses	6,989	6,880	7,204	5,029	4,963	4,857
Total Other Land (e)	10,479	11,264	11,266	10,731	10,824	10,795
Inland water bodies	119	119	119	225	225	225
Total area for country	32,974	32,974	32,974	33,080	33,080	33,080

1.3.2 Estimation and forecasting

Forest area

- The figures for Permanent Reserved Forest and National Parks for 1990, 2000, 2005, 2010, 2011 and 2012 are available, while figure for 2012 has been assumed for 2015.
- The figure for 2015 for Stateland Forest has been forecasted as 4,735 ('000ha) using linear trend (Stateland Forest, $y = 26x - 47,656$)
- The figure for 2015 for Rubber Plantation has been forecasted as 1,098 ('000ha) using linear trend (Rubber Plantation, $y = 19x - 37,186$).

1.3.3 Reclassification

Forest area

National Classes	Percentage Allocation to a FRA Class		
	Forests	OWL	Other Land
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			

This leads to the following,

FRA Categories	Area (1000 hectares)						
	1990	2000	2005	2010	2011	2012	2015
Forests							
Permanent Reserved Forest (PRF):	12,600	14,400	14,400	14,526	14,519	14,503	14,503
Stateland Forest	6,820	4,640	4,141	4,718	4,630	4,656	4,735
National Parks and Wildlife & Bird Sanctuary	1,120	1,120	1,120	1,859	1,859	1,859	1,859
Rubber Plantation	1,836	1,431	1,229	1,020	1,023	1,042	1,098
(Sub Total)	22,376	21,591	20,890	22,124	22,031	22,060	22,195

Other Land:	10,479	11,264	11,965	10,731	10,824	10,795	10,660
Inland water bodies	119	119	119	225	225	225	225
Total area for country	32,974	32,974	32,974	33,080	33,080	33,080	33,080

1.4 Data

Table 1a













Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
	Forest	22376	21591	20890	22124	22195
	Other wooded land	0	0	0	0	0
	Other land	10479	11264	11965	10731	10660
	... of which with tree cover	0	0	0	0	0
	Inland water bodies	119	119	119	225	225
	TOTAL	32974.00	32974.00	32974.00	33080.00	33080.00

Table 1b

Categories		Annual forest establishment / loss (000 hectares per year)				...of which of introduced species (000 hectares per year)			
		1990	2000	2005	2010	1990	2000	2005	2010
	Forest expansion	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which afforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which natural expansion of forest	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which human induced	N/A	N/A	N/A	4.175	N/A	N/A	N/A	N/A
	Reforestation	0.989	6.839	33.009	134.242	N/A	N/A	N/A	N/A

	... of which artificial	0.989	6.839	33.009	134.242	0.94	6.482	31.154	128.487
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Tiers

Category	Tier for status	Tier for reported trend
Forest	Tier 3	Tier 3
Other wooded land	Tier 1	Tier 1
Forest expansion	Tier 1	Tier 1
Deforestation	Tier 1	Tier 1
Reforestation	Tier 3	Tier 3

Tier criteria

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

1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends
Forest	Area for rubber plantation has been added to forest area only for FRA reporting. The country wishes to maintain it separate from forest area.	In general the rubber plantation area has increased since 2010. While the area for other uses has decreased. This is partly due to conversion of some state land forest and idle land to rubber plantations.
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.	N/A
Other land	N/A	Area for Other land has increased since 2010 mainly due to increase in area of oil palm plantation.
Other land with tree cover	N/A	N/A
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.	N/A
Forest expansion	N/A	N/A
Deforestation	N/A	N/A

Reforestation	Does not include mangrove forest areas that are clear felled and planted within production areas as they are part of management regime of mangrove forest in Malaysia.	Increasing trend especially in forest plantation establishment.
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Other general comments to the table

Response to reviewer's query to Table 1a and 1b: The increase of 71,000 ha (not 41,000 ha) from 2010 to 2015 is mainly due to the increase in area of rubber plantation. The figure for 2015 was derived through extrapolation (linear trend) using data for 2011 and 2012. The calculation of annual forest establishment / loss in Table 1b for year 2010 was based on the average figure for year 2008 – 2012. Response to reviewer's query to Table 1a: The increase in the total land area for Malaysia since 2005 was due to the updating of country land area by the relevant agency. Areas for PRF and National Parks and Wildlife & Bird Sanctuary include proposed areas for the same purposes. Response to reviewer's query to Table 1a: There is no value for other wooded land categories.

2. What is the area of natural and planted forest and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

2.1 Categories and definitions

Term	Definition
Naturally regenerated forest	Forest predominantly composed of trees established through natural regeneration.
Naturalized introduced species	Other naturally regenerated forest where the tree species are predominantly non-native and do not need human help to reproduce/maintain populations over time.
Introduced species	A species, subspecies or lower taxon occurring outside its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).
Category	Definition
Primary forest	Naturally regenerated forest of native species where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Other naturally regenerated forest	Naturally regenerated forest where there are clearly visible indications of human activities.
...of which of introduced species (<i>sub-category</i>)	Other naturally regenerated forest where the trees are predominantly of introduced species.
...of which naturalized (<i>sub-sub category</i>)	Other naturally regenerated forest where the trees are predominantly of naturalized introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
...of which of introduced species (<i>sub-category</i>)	Planted forest where the planted/seeded trees are predominantly of introduced species.
Mangroves	Area of forest and other wooded land with mangrove vegetation.
...of which planted (<i>sub-category</i>)	Mangroves predominantly composed of trees established through planting.

2.2 National data

2.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Of Peninsular Malaysia. Annual Report	Forest categories.	2006-2012	Statistical information covering naturally regenerated forest, forest plantation and mangroves in Peninsular Malaysia.

2	Forestry Department Of Peninsular Malaysia. Statistics Report	Forest categories.	2006-2012	Statistical information covering naturally regenerated forest, forest plantation and mangroves in Peninsular Malaysia.
3	Sabah Forestry Department	Forest categories.	2006-2012	Statistical information covering naturally regenerated forest, forest plantation and mangroves in Sabah.
4	Sarawak Forest Department	Forest categories.	2006-2012	Statistical information covering naturally regenerated forest, forest plantation and mangroves in Sarawak.
5	Ministry of Plantation Industries and Commodities Malaysia. Statistics on Commodities	Rubber plantation.	2006 - 2012	Statistical information covering rubber plantation in Malaysia
6	FRA 2010	Pre-filled data	N/A	N/A

2.2.2 Classification and definitions

National class	Definition
Primary	Protection Forest in PRF, 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 Acacia mangium, Gmelina arborea, and Paraserianthes falcataria, P. merkusii and Araucaria species. Includes Rubber Plantations.
N/A	N/A

2.2.3 Original data

National Categories	Area (1000 hectares)					
	Forest					
	1990	2000	2005	2010	2011	2012

- Forest plantation	120	228	258	603	701	743
- Rubber plantation	1,836	1,431	1,229	1,020	1,023	1,042
Productive plantation	n.a	n.a	n.a	n.a	n.a	n.a

Note: Actual data for Total Area of Forest Plantation in Malaysia

	Area ('1000 ha)				
	2006	2007	2010	2011	2012
Rubber Plantation					
Malaysia	1,232	1,207	1,020	1,023	1,042
Forest Plantation					
Peninsular Malaysia	83	105	109	186	198
Sabah	133	181	217	226	239
Sarawak	182	182	277	290	306
Sub Total FP			603	701	743
Total	1,631	1,675	1,623	1,724	1,784

2.3 Analysis and processing of national data

2.3.1 Adjustment

Figures for 2010 have been updated to the actual figures.

2.3.2 Estimation and forecasting

Forest in protected areas is considered as primary forest.

Other naturally regenerated forest is calculated by subtracting the primary forest and planted forest from the total forest area.

2.3.3 Reclassification

n.a

2.4 Data

Table 2a







Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Primary forest	3820	4030	4930	4867	5041
	Other naturally regenerated forest	16600	15902	14387	15634	15188
	... of which of introduced species	0	0	0	0	0
	... of which naturalized	0	0	0	0	0
	Planted forest	1956	1659	1573	1623	1966
	... of which of introduced species	0	0	0	1533	1836
TOTAL		22376.00	21591.00	20890.00	22124.00	22195.00

Table 2b

Primary forest converted to (000 ha)								
1990-2000			2000-2010			2010-2015		
Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land	Other natural regeneration	Planted	Other land
0	0	0	0	0	0	0	0	0

Table 2c

Categories	Area (000 hectares)
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	1990	2000	2005	2010	2015
Mangroves (forest and OWL)	548	529	545	529	521
... of which planted	N/A	N/A	N/A	0.429	0.674

Tiers

Category	Tier for status	Tier for reported trend
Primary forest	Tier 3	Tier 3
Other naturally regenerated forest	Tier 3	Tier 3
Planted forest	Tier 3	Tier 3
Mangroves	Tier 3	Tier 3

Tier Criteria

Category	Tier for status	Tier for reported trend
Primary forest/Other naturally regenerated forest/Planted forest	<p>Tier 3 : Data sources: Recent (less than 10 years) National Forest Inventory or remote sensing with ground truthing or data provided by official agencies or programme for repeated compatible NFIs</p> <p>Tier 2 : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years)</p> <p>Tier 1 : Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status)</p> <p>Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status)</p> <p>Tier 1 : Other</p>

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	Data for 2012 is assumed for 2015.	Area for primary forest is assumed to remain unchanged for the period 2012 - 2015.
Other naturally regenerating forest	Data for 2015 is derived from extrapolation based on year 2011 and 2012.	There is a slight decrease in area for other naturally regenerating forest due to conversion of stateland forest for development purposes.
Planted forest	Data for 2015 is derived from extrapolation based on year 2011 and 2012.	There is increased in area for planted forest due to increase in the establishment of fast growing forest plantation.
Mangroves	Data for 2015 is derived from extrapolation based on year 2011 and 2012.	Area for mangrove forest is expected to increase as a result of intensive reforestation programme.

Other general comments to the table

Response to reviewer's query to Table 2a: The figure of primary forest for 2015 was based on the figure for year 2012. The increase in the area of primary forest is due to the additional declaration of protected area. Response to reviewer's query to Table 2a: The annual change rate in % is lower than the range +3.00% and -3.00%.

3. What are the stocks and growth rates of the forests and how have they changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

3.1 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm, excluding branches.
Net Annual Increment (NAI)	Average annual volume of gross increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for "Growing stock".
Above-ground biomass	All living biomass above the soil including stem stump branches bark seeds and foliage.
Below-ground biomass	All biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood	All non-living woody biomass not contained in the litter either standing lying on the ground or in the soil. Dead wood includes wood lying on the surface dead roots and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in above-ground biomass	Carbon in all living biomass above the soil including stem stump branches bark seeds and foliage.
Carbon in below-ground biomass	Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Carbon in dead wood	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in litter	Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm) lying dead in various states of decomposition above the mineral or organic soil.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a soil depth of 30 cm.

3.2 National data

3.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Of Peninsular Malaysia. Third National Forest Inventory Report.	Growing stock	1991-1993	N/A
2	Forestry Department Of Peninsular Malaysia. Fourth National Forest Inventory Report.	Growing stock	2007	N/A
3	Forestry Department Of Peninsular Malaysia. Fifth National Forest Inventory Report.	Growing stock	2013	N/A

4	FRA 2015 Guidelines	Above ground biomass, below ground biomass	2013	Conversion factors from the guide lines were use to calculate for the above ground biomass, below ground biomass
5	FRA 2010	Pre-filled data	N/A	N/A

3.2.2 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 Reserved Forest
Biomass stock	No National definitions and classes are available for this table.

3.2.3 Original data

Growing stock				
A. Peninsular Malaysia				
A. For 1992: (Third National Forest Inventory for Peninsular Malaysia, 1991-1993)				
National class	Stratum Code	Area (ha)	>10 cm (m ³ /ha)	Gross Volume (m ³)

Virgin forest, superior	11	430,986	332.5	143,302,845
Virgin forest, good	12	578,397	289.1	167,214,572
Virgin forest, moderate	13	735,688	271.8	199,959,998
Virgin forest, poor	14	184,275	192.6	35,491,365
Logged 1971-1980	23	864,959	228.6	19,729,627
Logged 1961-1970	24	374,717	223.7	83,824,192
Logged before 1960	25	373,943	227.3	84,997,243
Stateland forest		2,573,049	182.0	468,294,918
Total		6,116,014	225.7	1,380,814,763

Growing stock/ha=225.7 m³/ha

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

National class	Stratum Code	Area (ha)	>10 cm (m ³ /ha)	Gross Volume (m ³)
Virgin forest, good	11	236,292	309	73113692
Virgin forest, poor	12	505,825	226	114,119,615
Logged 1991-2003	20	520,193	166	86,366,596
Logged 1981-1990	21	733,791	191	139,810,381
Logged 1971-1980	22	534,549	226	120,822,989
Logged before 1971	23	223,054	238	53,065,860
Peat Swamp Forest	31	84,510	216	18,218,350

Logged Peat Swamp Forest	32	123,114	172	21,149,025
Stateland Logged Dip Forest	40	390,929	132	51,751,767
Stateland Logged P.S.Forest	41	56,056	119	6,665,464
Protection Forest	50	2,321,701	237	54,947,976
Total		5,730,014	215	1,234,561,344

Growing stock/ha=215 m³/ha

A (iii). For 2012: (Preliminary Fifth National Forest Inventory for Peninsular Malaysia, 2011-2013)

National class	Stratum Code	Area	>10 cm	Gross Volume
		(ha)	(m ³ /ha)	(m ³)
Virgin Lowland & Hill Forest	1	548,234	247.67	135,781,115
Virgin Upper Hill Forest	2	87,138	614.3	53,528,873
Lowland & Hill Logged-over Forest (1-10 years)	3	225,867	171.57	38,751,981
Upper Hill Logged-over Forest (1-10 years)	4	18,596	176.8	3,287,822
Lowland & Hill Logged-over Forest (11-20 years)	5	379,856	231.42	87,906,183
Upper Hill Logged-over Forest (11-20 years)	6	45,422	163.37	7,420,628
Lowland & Hill Logged-over Forest (21-30 tahun)	7	686,106	236.82	162,483,599
Upper Hill Logged-over Forest (21-30 tahun)	8	57,214	200.49	11,470,893
Lowland & Hill Logged-over Forest (>30 tahun)	9	971,577	257.52	250,200,584
Upper Hill Logged-over Forest (>30 tahun)	10	49,676	190.82	9,479,119

Virgin Peat Swamp Forest	11	97,634	191.67	18,713,595
Peat Swamp Logged-over Forest (#40 tahun)	12	113,672	183.67	20,878,193
Peat Swamp Logged-over Forest (#40 tahun)	13	5,935	198.1	1,175,749
Non Forest Reserve Inland Forest	14	698,786	146.93	102,672,667
Non Forest Reserve Peat Swamp Forest	15	176,001	133.9	23,566,479
Lowland & Hill Protection Forest	16	1,182,305	230.49	272,509,461
Upper Hill Protection Forest	17	381,041	264.19	100,667,230
Montane Protection Forest	18	242,462	218.48	52,973,056
Total		5,967,523	225.46	
Growing stock/ha= 225.46 m ³ /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 m³/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 limited to log over commercial Class II forests. This information indicates variation of growth stock per ha from 25 m³/ha in stratum 4 forest to 150 m³/ha in stratum 1 forests of trees 60 cm dbh and above over bark.

Biomass stock

Based on the FRA 2015 guidelines and the projected growing stock for 2015, the BCEF of 0.95 for humid tropical forests and a root shoot ratio of 0.24 have been applied.

Carbon stock

This table uses biomass data and the conversion factor of 0.47 to calculate carbon in above-ground biomass and carbon in below-ground biomass.

3.3 Analysis and processing of national data

3.3.1 Adjustment

N/A

3.3.2 Estimation and forecasting

Biomass stock

Variables	1990	2000	2005	2010	2015
Growing Stock in forests in million m ³	5,097	4,696	4,436	4,585	5,034
BCEF	0.95	0.95	0.95	0.95	0.95
Above Ground Biomass million t	4,842	6,105	5,767	4,355	4,782
Root ratio	0.24	0.24	0.24	0.24	0.24
Below ground biomass million t	1,162	1,465	1,384	1,045	1,148

Carbon stock

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	2015
-----------	------	------	------	------	------

Above-ground biomass	4,842	6,105	5,767	4,355	4,782
Default factor	0.47	0.47	0.47	0.47	0.47
Carbon in Above ground biomass	2,276	2,869	2,711	2,047	2,248
Below-ground biomass	1,162	1,465	1,384	1,045	1,148
Default factor	0.47	0.47	0.47	0.47	0.47
Carbon in Below ground biomass	546	689	651	491	539

Growing stock

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 ³ /ha						
	1992	2002	1990	2000	2005	2010	2015
Weighted average Growing Stock per hectare	226	215	228	218	212	207	227

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 ³				
	1990	2000	2005	2010	2015
Extent of Forest in Table 1 in 000 ha	22,376	21,591	20,890	22,124	22,195
Growing stock per ha	227.79	217.50	212.35	207.23	226.81
Total Growing Stock in million m³	5,097	4,696	4,436	4,585	5,034

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 NFI 4 data.

For FRA 2005, information has been compiled and projected from preliminary results from NFI 4 inventory data analysis. NFI 4 was carried out between 2002 and 2004. Where else, data for FRA 2010 has been derived from actual NFI 4 report. Malaysia intends to use actual NFI data.

Species distribution based on NFI4 (2001 - 2003)

Scientific name	Common name	Percent
<i>Eugenia spp.</i>	Kelat	14.81%
<i>Cinnamomum spp.</i>	Medang	10.80%
<i>Canarium spp.</i>	Kedondong	9.15%
<i>Shorea curtisii</i>	Meranti seraya	9.02%
<i>Shorea leprosula</i>	Meranti tembaga	6.11%
<i>Shorea platyclados</i>	Meranti bukit	6.02%
<i>Koompassia</i>	Kempas, Tualang	5.07%
<i>Palaquium</i>	Nyatoh	4.64%
<i>Shorea ovalis</i>	Meranti kepong	4.37%
<i>Shorea pauciflora</i>	Meranti nemesu	4.28%
Remaining species		25.72%
Total		100.00%

Species distribution based on NFI5 (2011-2013)

Peninsular Malaysia		
Scientific name	Common name	Percent
<i>Syzygium</i> spp .	Kelat	12.41%
<i>Cinnamomum</i> spp .	Medang	11.47%
<i>Canarium</i> spp .	Kedondong	6.10%
<i>Shorea curtisii.</i>	Meranti seraya	3.89%
<i>Shorea leprosula</i>	Meranti tembaga	2.63%
<i>Shorea platyclados</i>	Meranti bukit	2.19%
<i>Koompassia</i> spp .	Kempas, Tualang	1.91%
<i>Palaquium</i> spp .	Nyatoh	1.81%
<i>Shorea ovalis</i>	Meranti kepong	1.77%
<i>Shorea pauciflora</i>	Meranti nemesu	1.67%
Remaining species		54.14%
Total		100.00%

3.3.3 Reclassification

N/A

3.4 Data

Table 3a




Category		Growing stock volume (million m ³ over bark)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Total growing stock	5097	4696	4436	4585	5034	0	0	0	0	0
	... of which coniferous	0	0	0	0	0	0	0	0	0	0
	... of which broadleaved	5097	4696	4436	4585	5034	0	0	0	0	0

Table 3b

Category/Species name			Growing stock in forest (million cubic meters)			
Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	Syzygium spp.	Kelat	755	695	657	679
2 nd	Cinnamomum spp.	Medang	551	507	479	495
3 rd	Canarium spp.	Kedondong	466	430	406	420
4 th	Shorea curtisii.	Meranti seraya	459	423	400	413
5 th	Shorea leprosula	Meranti tembaga	311	287	271	280
6 th	Shorea platyclados	Meranti bukit	307	283	267	276
7 th	Koompassia spp.	Kempas, Tualang	259	238	225	233
8 th	Palaquium spp.	Nyatoh	237	219	206	213
9 th	Shorea ovalis	Meranti kepong	222	205	194	201
10 th	Shorea pauciflora	Meranti nemesu	218	201	190	196
Remaining			1312	1208	1141	1179
TOTAL			5097.00	4696.00	4436.00	4585.00

THE PRE-FILLED VALUES FOR GROWING STOCK REFER TO THE FOLLOWING THRESHOLD VALUES (SEE TABLE BELOW)

Item	Value	Complementary information
------	-------	---------------------------

Minimum diameter (cm) at breast height of trees included in growing stock (X)	10 cm	N/A
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	First branch	N/A
Minimum diameter (cm) of branches included in growing stock (W)	N/A	N/A
Volume refers to above ground (AG) or above stump (AS)	AG	N/A

PLEASE NOTE THAT THE DEFINITION OF GROWING STOCK HAS CHANGED AND SHOULD BE REPORTED AS GROWING STOCK DBH 10 CM INCLUDING THE STEM FROM GROUND LEVEL UP TO A DIAMETER OF 0 CM, EXCLUDING BRANCHES.

Table 3c




Category		Net annual increment (m ³ per hectare and year)				
		Forest				
		1990	2000	2005	2010	2015
	Net annual increment	N/A	N/A	N/A	N/A	9.39
	... of which coniferous	N/A	N/A	N/A	N/A	0
	... of which broadleaved	N/A	N/A	N/A	N/A	9.39

Table 3d





Category		Biomass (million metric tonnes oven-dry weight)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Above ground biomass	4842	4461	4214	4355	4782	0	0	0	0	0
	Below ground biomass	1162	1071	1011	1045	1148	0	0	0	0	0
	Dead wood	0	0	0	0	0	0	0	0	0	0
TOTAL		6004.00	5532.00	5225.00	5400.00	5930.00	.00	.00	.00	.00	.00

Table 3e

Category		Carbon (Million metric tonnes)	
		Forest	Other wooded land

		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Carbon in above ground biomass	2276	2097	1981	2047	2248	0	0	0	0	0
	Carbon in below ground biomass	546	503	475	491	539	0	0	0	0	0
	<i>Subtotal Living biomass</i>	2822	2600	2456	2538	2787	0	0	0	0	0
	Carbon in dead wood	0	0	0	0	0	0	0	0	0	0
	Carbon in litter	47	45	44	46	47	0	0	0	0	0
	<i>Subtotal Dead wood and litter</i>	0	0	0	0	0	0	0	0	0	0
	Soil carbon	0	0	0	0	0	0	0	0	0	0
TOTAL		2869.00	2645.00	2500.00	2584.00	2834.00	.00	.00	.00	.00	.00

Tiers

Variable/category	Tier for status	Tier for trend
Total growing stock	Tier 3	Tier 3
Net annual increment	Tier 2	Tier 2
Above ground biomass	Tier 1	Tier 1
Below ground biomass	Tier 1	Tier 1
Dead wood	Tier 1	Tier 1
Carbon in above-ground biomass	Tier 1	Tier 1
Carbon in below ground biomass	Tier 1	Tier 1
Carbon in dead wood and litter	Tier 1	Tier 1
Soil carbon	Tier 1	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
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Total growing stock	Tier 3: Data sources Recent 10 years National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI 10 years Domestic volume functions Tier 2: Data sources/registers and statistics modelling or old NFI 10 years or partial field inventory Tier 1: Other data sources	Tier 3: Estimate based on repeated compatible tiers 3 (tier for status) Domestic growth functions Tier 2: Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 tier for status Tier 1: Other
Net annual increment	Tier 3: Scientifically tested national volume and growth functions Tier 2: Selection of volume and growth functions as relevant as possible Tier 1: Other	Tier 3: Confirmation/adjustment of functions used through scientific work Tier 2: Review work done to seek alternative functions Tier: 1 Other
Biomass	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied or other domestic or otherwise nationally relevant biomass studies Tier 2: Application of country specific national or sub-national biomass conversion factors from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Carbon in above ground biomass • Carbon in below ground biomass • Carbon in dead wood and litter • Soil carbon 	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied Tier 2: Application of country specific national or sub-national biomass conversion factors form from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
Total growing stock	The growing stock figures for FRA2010 have been updated based on actual extent of forest for 2010.	N/A
Growing stock of broadleaved coniferous	N/A	N/A
Growing stock composition	Species wise distribution of growing stock does not include rubber plantation.	N/A
Net annual increment	Mean Annual Increment (MAI) (growth plot) is used as Net Annual Increment as it has taken mortality (natural losses) into consideration.	N/A
Above-ground biomass	N/A	N/A
Below-ground biomass	N/A	N/A
Dead wood	N/A	N/A

Carbon in above-ground biomass	N/A	N/A
Carbon in below-ground biomass	N/A	N/A
Carbon in dead wood	N/A	N/A
Carbon in litter	N/A	N/A
Soil carbon	Soil depth for soil carbon estimates not available.	N/A

Other general comments to the table

The species distribution of the growing stock has been developed by using proportionate distribution (excluding rubber plantation) of species based on NFI3, NFI4 and NFI5 carried out in Peninsular Malaysia only. Other wooded land is not applicable (N/A) in Malaysia. Response to reviewer's query to Table 3d and 3e: The FRIMS system does not accepted N/A. The figures for "Total" disappear when N/A is keyed in. Response to reviewer's query to Table 3a: There is no value for other wooded land categories. Response to reviewer's query to Table 3e: There is no value for soil carbon category (soil depth for soil carbon estimates not available). Response to reviewer's query to Table 3d & 3e: Default factor for Table 3d and 3e using 0.47 as a default factor over the years.

4. What is the status of forest production and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

4.1 Categories and definitions

Term	Definition
Primary designated function	The primary function or management objective assigned to a management unit either by legal prescription documented decision of the landowner/manager or evidence provided by documented studies of forest management practices and customary use.
Non wood forest product (NWFP)	Goods derived from forests that are tangible and physical objects of biological origin other than wood.
Commercial value of NWFP	For the purpose of this table, value is defined as the commercial market value at the forest gate.
Category	Definition
Production forest	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Multiple use forest	Forest area designated for more than one purpose and where none of these alone is considered as the predominant designated function.
Total wood removals	The total of industrial round wood removals and woodfuel removals.
...of which woodfuel	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

4.2 National data

4.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Of Peninsular Malaysia. Annual Report	Forest categories.	1990-2012	Statistical information covering naturally regenerated forest, forest plantation and mangroves in Peninsular Malaysia.
2	Forestry Department Of Peninsular Malaysia. Statistics Report	Forest categories.	1990-2012	Statistical information covering naturally regenerated forest, forest plantation and mangroves in Peninsular Malaysia.
3	Sabah Forestry Department	Forest categories.	1990-2012	Statistical information covering naturally regenerated forest, forest plantation and mangroves in Sabah.

4	Sarawak Forest Department	Forest categories and totally protected areas.	1990-2012	Statistical information covering naturally regenerated forest, forest plantation and mangroves in Sarawak.
5	Department of Wildlife and National Parks Peninsular Malaysia	National Park, Wildlife & Bird Sanctuary & NWFP.	1990-2012	N/A
6	FRA 2010	Pre-filled data.	N/A	N/A

4.2.2 Classification and definitions

National class	Definition
Primary Function - Permanent Reserved Forest	Land administered under:- • National Forestry Act, 1984 (Peninsular Malaysia); • Forest Ordinance Cap. 126 (1958 Edition) (Sarawak); • Forest Enactment, 1968 (Sabah).
- National Park	Land administered under:- • National Parks Act, 1980 (Peninsular Malaysia); • Taman Negara Enactment (Kelantan), 1938 • Taman Negara Enactment (Pahang), 1939 • Taman Negara Enactment (Terengganu), 1939 • National Park Corporation Enactment (Johore) 1989; • State Park Corporation Enactment (Perak) 2003; • National Parks and Nature Reserves Ordinance Cap. 27, 1998 (Sarawak); • Parks Enactment, 1984 (Sabah).
- Wildlife & Bird Sanctuary	Land administered under:- • Wildlife Conservation Act, 2010 (Peninsular Malaysia); • Wildlife Protection Ordinance Cap. 26, 1998 (Sarawak); • Wildlife Conservation Enactment, 1997 (Sabah).
- Stateland Forest - Alienated Land - Plantation Land - Urban areas	Land administered under:- • National Land Code & Stateland Rules, 1965 (Peninsular Malaysia); • Land Code Cap 81, 1958 Edition (Sarawak) • Land Ordinance Cap. 68, 1930 (Sabah).

4.2.3 Original data

Forest	1990	2000	2005	2010	2011	2012
Production Forest in '000ha						
- PRF	9,900	11,490	10,590	11,519	11,614	11,321
- Rubber plantation	1,836	1,431	1,229	1,020	1,023	1,042

Protection in '000ha						
- PRF	2,700	2,910	3,810	3,008	2,905	3,182
- National Park & wildlife & bird sanctuary	1,120	1,120	1,120	1,859	1,859	1,859
Multiple purpose in '000ha						
- Stateland Forest	6,820	4,640	4,141	4,718	4,630	4,656
Total Forest in '000ha	22,376	21,591	20,890	22,124	22,031	22,060

4.3 Analysis and processing of national data

4.3.1 Adjustment

N/A

4.3.2 Estimation and forecasting

The figures for Permanent Reserved Forest and National Parks for 1990, 2000, 2005, 2010, 2011 and 2012 are available, while figure for 2012 has been assumed as 2015. The figure for 2015 for Stateland Forest has been forecasted as 4,735 ('000ha) using linear trend (Stateland Forest, $y=26x - 47,656$).

The figure for 2015 for Rubber Plantation has been forecasted as 1,098 ('000ha) using linear trend (Rubber Plantation, $y=19x - 37,186$).

Forest	1990	2000	2005	2010	2015
Production Forest in '000ha					

- PRF	9,900	11,490	10,590	11,519	11,321
- Rubber plantation	1,836	1,431	1,229	1,020	1,098
Protection in '000ha					
- PRF	2,700	2,910	3,810	3,008	3,182
- National Park & wildlife & bird sanctuary	1,120	1,120	1,120	1,859	1,859
Multiple purpose in '000ha					
- Stateland Forest	6,820	4,640	4,141	4,718	4,735
Total Forest in '000ha	22,376	21,591	20,890	22,124	22,195

4.3.3 Reclassification

N/A

4.4 Data

Table 4a



Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	11736	12921	11819	12539	12419
	Multiple use forest	6820	4640	4141	4718	4735

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
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1 st	Agarwood	Aqualaria malacensis	16052	3
2 nd	Bird's nest	Erodamus fugifagus (White), Erodamus maximus (Black)	3426	13
3 rd	Wild boar	Sus scrofa	1838	12
4 th	Bamboo betong and semantan	Dendrocalamus asper; Gigantochloa scortechinii	1712	5
5 th	Rattan	Calamus spp	1392	5
6 th	Phyton	Python reticulatus	869	12
7 th	Skin (Phyton)	Python reticulatus	579	10
8 th	Monitor lizard	Varanus salvator	254	12
9 th	Skin (Monitor lizard)	Varanus salvator	61	10
10 th	N/A	N/A	N/A	N/A
TOTAL			26183.00	

2010	
Name of local currency	Ringgit Malaysia (RM)

Category
Plant products / raw material
1 Food
2 Fodder
3 Raw material for medicine and aromatic products
4 Raw material for colorants and dyes
5 Raw material for utensils handicrafts construction
6 Ornamental plants
7 Exudates
8 Other plant products
Animal products / raw material
9 Living animals

10 Hides skins and trophies
11 Wild honey and beeswax
12 Wild meat
13 Raw material for medicine
14 Raw material for colorants
15 Other edible animal products
16 Other non-edible animal products

Table 4c Pre-filled data from FAOSTAT

Year	FRA 2015 category (1000 m ³ u.b.)	
	Total wood removals	...of which woodfuel
1990	45269.7	4009.7
1991	45311.7	3930.7
1992	48890.5	3852.5
1993	41768.9	3764.9
1994	40114.2	3681.2
1995	39349.1	3596.1
1996	35069.2	3525.2
1997	35996.4	3458.4
1998	26813.6	3413.6
1999	26769.9	3381.9
2000	27725.7	3345.7
2001	23545.5	3285.5
2002	22690.8	3227.8
2003	26529.4	3172.4
2004	28470.3	3119.3
2005	28254.3	3068.3
2006	26190.6	3012.7

2007	27953.2	2959.2
2008	25652.7	2907.7
2009	22985.2	2858.2
2010	22113.5	2810.5
2011	20811	2760

Tiers

Category	Tier for status	Tier for reported trend
Production forest	Tier 3	Tier 3
Multiple use forest	Tier 1	Tier 1

Tier Criteria

Category	Tier for status	Tier for reported trend
Production forest Multiple use forest	Tier 3: Updated including field verifications national forest maps including functions Tier 2: Forest maps older than 6 years including forest functions Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	N/A	Area for production forests decreases slightly since 2010 due to increased in protection forest.
Multiple use forest	N/A	Area for multiple use forest (Stateland forest) decreases slightly since 2010 due to conversion for land development including rubber plantation.
Total wood removals	N/A	N/A
Commercial value of NWFP	N/A	N/A

Other general comments to the table

Response to reviewer's query to Table 4a: The value for 2015 has been corrected as highlighted. Response to reviewer's query to Table 4c: The figures for Table 4c was based on the latest data from FAOSTAT.

5. How much forest area is managed for protection of soil and water and ecosystem services?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

5.1 Categories and definitions

Category	Definition
Protection of soil and water	Forest area designated or managed for protection of soil and water
...of which production of clean water (<i>sub-category</i>)	Forest area primarily designated or managed for water production, where most human uses are excluded or heavily modified to protect water quality.
...of which coastal stabilization (<i>sub-category</i>)	Forest area primarily designated or managed for coastal stabilization.
...of which desertification control (<i>sub-category</i>)	Forest area primarily designated or managed for desertification control.
...of which avalanche control (<i>sub-category</i>)	Forest area primarily designated or managed to prevent the development or impact of avalanches on human life assets or infrastructure.
...of which erosion, flood protection or reducing flood risk (<i>sub-category</i>)	Forest area primarily designated or managed for protecting communities or assets from the impacts of erosion riparian floods and landslides or for providing flood plain services.
...of which other (<i>sub-category</i>)	Forest area primarily designated or managed for other protective functions.
Ecosystem services, cultural or spiritual values	Forest area primarily designated or managed for selected ecosystem services or cultural or spiritual values.
...of which public recreation (<i>sub-category</i>)	Forest area designated or managed for public recreation.
...of which carbon storage or sequestration (<i>sub-category</i>)	Forest area designated or managed for carbon storage or sequestration.
...of which spiritual or cultural services (<i>sub-category</i>)	Forest area designated or managed for spiritual or cultural services.
...of which other (<i>sub-category</i>)	Forest area designated or managed for other ecosystem services.

5.2 National data

5.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department of Peninsular Malaysia	Forest area by functional classes	2010-2012	N/A

2	Forestry Manual Volume III Forestry Department Peninsular Malaysia	Definitions of forest functional classes	2003	N/A
3	Sabah Forestry Department	Forest area by functional classes	2010-2012	N/A
4	Sarawak Forest Department	Forest area by functional classes	2010-2012	N/A

5.2.2 Classification and definitions

National class	Definition
Protection forest	Protection forest are forest area designated or managed for protection of soil and water and ecosystem services.
N/A	N/A
N/A	N/A
N/A	N/A

5.2.3 Original data

N/A

5.3 Analysis and processing of national data

5.3.1 Adjustment

n.a

5.3.2 Estimation and forecasting

The figures for water catchment forest and forest for coastal stabilization for 2010, 2011 and 2012 are available. For water catchment forest and flood control forest, figures for 2012 have been assumed as 2015. In the case of forest for coastal stabilization, estimation for 2015 is done by extrapolation of figures for 2011 and 2012.

5.3.3 Reclassification

n.a

5.4 Data

Table 5a

Categories		Forest area (1000 hectares)				
		1990	2000	2005	2010	2015
CRQ	Protection of soil and water	N/A	N/A	N/A	2035	2343
CRQ	... of which production of clean water	N/A	N/A	N/A	1688	1995
CRQ	... of which coastal stabilization	N/A	N/A	N/A	337	338
CRQ	... of which desertification control	N/A	N/A	N/A	N/A	N/A
CRQ	... of which avalanche control	N/A	N/A	N/A	N/A	N/A
CRQ	... of which erosion, flood protection or reducing flood risk	N/A	N/A	N/A	10	10
CRQ	... of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A

Other

N/A

Table 5b

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015
Ecosystem services, cultural or spiritual values	0	0	0	2446	2466
...of which public recreation	0	0	0	660	681
...of which carbon storage or sequestration	0	0	0	0	0
...of which spiritual or cultural services	0	0	0	0	0

...of which other (please specify in comments below the table)	0	0	0	1786	1785
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Tiers

Category	Tier for reported trend	Tier for status
Protection of soil and water	Tier 3	Tier 3
Ecosystem services, cultural or spiritual values	Tier 3	Tier 3

Tier criteria

Category	Tier for status	Tier for reported trend
Protection of soil and water	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations or legislation relating to soil and water protection. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Cultural or spiritual values • Public recreation • Spiritual or cultural services • Other 	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	N/A	N/A
Production of clean water	Refers to forest designated for water catchment purposes.	Estimation for 2015 is assumed to be the same as 2012.
Coastal stabilization	Refers to forest designated for coastal stabilization purposes.	Estimation for 2015 is done by extrapolation from figures for 2011 and 2012.
Desertification control	n.a	n.a
Avalanche control	n.a	n.a

Erosion, flood protection or reducing flood risk	Refers to forest designated for flood control purposes.	Estimation for 2015 is assumed to be the same as 2012.
Other protective functions	n.a	n.a
Ecosystem services, cultural or spiritual values	N/A	N/A
Public recreation	Refers to forest designated for amenity purposes.	N/A
Carbon storage or sequestration	n.a	n.a
Spiritual or cultural services	n.a	n.a
Other ecosystem services	Refers to Protection PRF (forest sanctuary for wildlife, virgin jungle reserved forest, forest for federal purposes, state park as well as wildlife reserve) and National Parks & Wildlife & Bird Sanctuary.	Estimation for 2015 is assumed to be the same as 2012.

Other general comments to the table

Response to reviewer's query to Table 5a: The FRIMS system does not accepted N/A.

6. How much forest area is protected and designated for the conservation of biodiversity and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

6.1 Categories and definitions

Category	Definition
Conservation of biodiversity	Forest area designated primarily for conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas.
Forest area within protected areas	Forest area within formally established protected areas independently of the purpose for which the protected areas were established.

6.2 National data

6.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Of Peninsular Malaysia. Annual Report	Forest categories.	1990-2012	Statistical information covering National Park, Wildlife and Bird Sanctuary in Peninsular Malaysia.
2	Forestry Department Of Peninsular Malaysia. Statistics Report	Forest categories.	1990-2012	Statistical information covering National Park, Wildlife and Bird Sanctuary in Peninsular Malaysia.
3	Sabah Forestry Department	Forest categories.	1990-2012	Statistical information covering National Park, Wildlife and Bird Sanctuary in Sabah.
4	Sarawak Forest Department	Forest categories.	1990-2012	Statistical information covering National Park, Nature Reserve & Wildlife Sanctuary in Sarawak.
5	Department of Wildlife and National Parks Peninsular Malaysia. Compendium	Forest categories.	1990-2012	Statistical information covering National Park, Wildlife and Bird Sanctuary in Peninsular Malaysia.
6	FRA 2010	Pre-filled data	2010	N/A

6.2.2 Classification and definitions

National class	Definition
- Permanent Reserved Forest	Land administered under:- • National Forestry Act, 1984 (Peninsular Malaysia); • Forest Ordinance Cap. 126 (1958 Edition) (Sarawak); • Forest Enactment, 1968 (Sabah).

National Park	Land administered under:- • National Parks Act, 1980 (Peninsular Malaysia); • Taman Negara Enactment (Kelantan), 1938 • Taman Negara Enactment (Pahang), 1939 • Taman Negara Enactment (Terengganu), 1939 • National Park Corporation Enactment (Johore) 1989; • State Park Corporation Enactment (Perak) 2003; • National Parks and Nature Reserves Ordinance Cap. 27, 1998 (Sarawak); • Parks Enactment, 1984 (Sabah).
Wildlife & Bird Sanctuary	Land administered under:- • Wildlife Conservation Act, 2010 (Peninsular Malaysia); • Wildlife Protection Ordinance Cap. 26, 1998 (Sarawak); • Wildlife Conservation Enactment, 1997 (Sabah).
- Stateland Forest - Alienated Land - Plantation Land - Urban areas	Land administered under:- • National Land Code & Stateland Rules, 1965 (Peninsular Malaysia); • Land Code Cap 81, 1958 Edition (Sarawak) • Land Ordinance Cap. 68, 1930 (Sabah).

6.2.3 Original data

Similar to table 4.2.3.						
Forest	1990	2000	2005	2010	2011	2012
Production Forest in '000ha						
- PRF	9,900	11,490	10,590	11,519	11,614	11,321
- Rubber plantation	1,836	1,431	1,229	1,020	1,023	1,042
Protection in '000ha						
- PRF	2,700	2,910	3,810	3,008	2,905	3,182
- National Park & wildlife & bird sanctuary	1,120	1,120	1,120	1,859	1,859	1,859
Multiple purpose in '000ha						
- Stateland Forest	6,820	4,640	4,141	4,718	4,630	4,656

Total Forest in '000ha	22,376	21,591	20,890	22,124	22,031	22,060
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6.3 Analysis and processing of national data

6.3.1 Adjustment

Figures for 2010 have been adjusted based on actual data available.

6.3.2 Estimation and forecasting

Similar to table 4.3.2

Forest	1990	2000	2005	2010	2011	2012	2015	
Production Forest in '000ha								
- PRF	9,900	11,490	10,590	11,519	11,614	11,321	11,321	
- Rubber plantation	1,836	1,431	1,229	1,020	1,023	1,042	1,098	
Protection in '000ha								
- PRF	2,700	2,910	3,810	3,008	2,905	3,182	3,182	
- National Park & wildlife & bird sanctuary	1,120	1,120	1,120	1,859	1,859	1,859	1,859	
Multiple purpose in '000ha								



- Stateland Forest	6,820	4,640	4,141	4,718	4,630	4,656	4,735	
Total Forest in '000ha	22,376	21,591	20,890	22,124	22,031	22,060	22,195	
<p>The figures for Permanent Reserved Forest and National Parks 1990, 2000, 2005, 2010, 2011 and 2012 are available, while figures for 2012 have been assumed for 2015.</p>								

6.3.3 Reclassification

N/A

6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Conservation of biodiversity	1120	1120	1120	1859	1859
	Forest area within protected areas	3820	4030	4930	4867	5041

Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	Tier 3	Tier 3
Forest area within protected areas	Tier 3	Tier 3

Tier criteria

Category	Tier for status	Tier for reported trend
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<ul style="list-style-type: none"> • Conservation of biodiversity • Forests within protected areas 	<p>Tier 3: Data obtained from national or state agencies responsible for conservation and protected area or legislation relating to area protection. Tier 2: Studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates Tier 1 Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other</p>
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6.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Conservation of biodiversity	Does not include forest gazetted for conservation of biodiversity within the PRFs. Areas for conservation of biodiversity include national parks, wildlife reserves and Totally Protected Areas (TPA) of Sarawak which are located outside PRF. These areas are under the purview of Department of Wildlife and National Parks of Peninsular Malaysia, Sabah Wildlife Department and Sarawak Forest Department. The figure for 2010 has been updated based on latest available data, while figure for 2012 has been assumed for 2015	Forest areas designated for conservation of biodiversity are expected to remain constant in the near future.
Forest area within protected areas	Includes forest areas designated for: a. protection of soil and water; b. ecosystem services	The figures for forest area within protected areas increases slightly since 2010 due to increase in area for protection of soil and water.

Other general comments to the table

N/A

7. What is the area of forest affected by woody invasive species?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

7.1 Categories and definitions

Category	Definition
Invasive species	Species that are non-native to a particular ecosystem and whose introduction and spread cause, or are likely to cause, socio-cultural, economic or environmental harm or harm to human health.

7.2 National data

7.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

7.2.2 Classification and definitions

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

7.2.3 Original data

N/A

7.3 Analysis and processing of national data

7.3.1 Adjustment

N/A

7.3.2 Estimation and forecasting

N/A

7.3.3 Reclassification

N/A

7.4 Data

Table 7

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

Tiers

Category	Tier for status	Tier for reported trend
Invasive species	Tier 1	Tier 1

Tier Criteria

Category	Tier for status	Tier for reported trend
Invasive species	Tier 3: Systematic assessment in forest inventory or other survey (e.g. by conservation department) within the last 5 years) Tier 2: Systematic assessment in forest inventory or other survey (e.g. by conservation department conducted more than 5 years ago) Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

7.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Invasive species	N/A	N/A

Other general comments to the table

N/A

8. How much forest area is damaged each year?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

8.1 Categories and definitions

Category	Definition
Number of fires	Number of fires per year
Burned area	Area burned per year
Outbreaks of insects	A detectable reduction in forest health caused by a sudden increase in numbers of harmful insects.
Outbreaks of diseases	A detectable reduction in forest health caused by a sudden increase in numbers of harmful pathogens, such as bacteria, fungi, phytoplasma or virus.
Severe weather events	Damage caused severe weather events, such as snow, storm, drought, etc.

8.2 National data

8.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department of Peninsular Malaysia	Area affected by fire.	2003 – 2012	N/A
2	Sabah Forestry Department	Area affected by fire.	2003 – 2012	N/A
3	Sarawak Forest Department	Area affected by fire.	2003 – 2012	N/A
4	N/A	N/A	N/A	N/A

8.2.2 Classification and definitions

National class	Definition
Forest fire	Fire occurrences in forest area.
N/A	N/A
N/A	N/A
N/A	N/A

8.2.3 Original data

Refer Table 8a & 8b.

8.3 Analysis and processing of national data

8.3.1 Adjustment

N/A

8.3.2 Estimation and forecasting



N/A

8.3.3 Reclassification

N/A

8.4 Data

Table 8a

Category		000 ha, number of fires									
		2003		2004		2005		2006		2007	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	1.32	0	1.3	0	2.23	0	1.33	0	1.35	0
	... of which forest area burned	1.32	0	1.3	0	2.23	0	1.33	0	1.35	0
Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	0.06	2	1.54	25	2.48	44	0.01	6	0.45	10


	... of which forest area burned	0.06	2	1.54	25	2.48	44	0.01	6	0.45	10
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Table 8b

Outbreak category	Description/name	Year(s) of latest outbreak	Area damaged (000 hectares)
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Outbreak category
1 Insects
2 Diseases
3 Severe weather events

Tiers

Category	Tier for status	Tier for trend
Area affected by fire	Tier 3	Tier 3
<ul style="list-style-type: none"> • Insects • Diseases • Severe weather events 	Tier 1	Tier 1

Tier criteria

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

8.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Burned area	Data obtained from field monitoring report.	Fire incidences mainly occurred in peat swamp forest.
Insects	n.a	n.a
Diseases	n.a	n.a
Severe weather events	n.a	n.a

Other general comments to the table

Response to reviewer's query to Table 8a: The figures for Table 8a were derived from national sources.

9. What is the forest area with reduced canopy cover?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

Category	Definition
Reduction in canopy cover	Forest that has undergone a reduction of canopy cover of more than 20% between the years 2000 and 2010 within the forest canopy cover range of 30-80% as detected by the MODIS VCF sensor.

Table 9

Category	Area of forest with reduced canopy cover (000 ha)
Reduction in canopy cover	5758.73

Tiers

Category	Tier for reported trend
Reduction in canopy cover	Tier 2

Tier criteria

Category	Tier for reported trend
Reduction in canopy cover	Tier 3 : Remote sensing with ground truthing and/or Landsat imagery Tier 2 : Remote sensing using Modis (using pre-filled data provided by FAO) Tier 1 : Expert opinion

Comments

Category	Comments related to data definitions etc
Reduction in canopy cover	Pre-filled data provided by FAOSTAT.

Other general comments

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10. What forest policy and regulatory framework exists to support implementation of sustainable forest management SFM?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

10.1 Categories and definitions

Category	Definition
Policies supporting sustainable forest management	Policies or strategies that explicitly encourage sustainable forest management.
Legislation and regulations supporting sustainable forest management	Legislation and regulations that govern and guide sustainable forest management, operations and use.

10.2 National data

10.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Peninsular Malaysia	Forest policies, forest legislation and regulations for Peninsular Malaysia	1978/ 1984	N/A
2	Sabah Forestry Department	Forest policies, forest legislation and regulations for Sarawak	1930/ 1954/ 1968/ 1984/ 1997	N/A
3	Sarawak Forest Department	Forest policies, forest legislation and regulations for Sarawak	1954/ 1958/ 1962/ 1997/ 1998	N/A
4	N/A	N/A	N/A	N/A

10.2.2 Classification and definitions

National class	Definition
Policies supporting sustainable forest management	1. National Forestry Policy, 1978 (revised 1992); 2. Statement of Forest Policy 1954, Sabah; 3. State Forest Policy 1954, Sarawak; 4. National Policy on Biological Diversity, 1998.

Legislation and regulations supporting sustainable forest management	1. National Forestry Act, 1984; 2. National Park Act, 1980; 3. Wildlife Conservation Act, 2010 (Peninsular Malaysia); 4. Taman Negara Enactment (Kelantan), 1938 5. Taman Negara Enactment (Pahang), 1939 6. Taman Negara Enactment (Terengganu), 1939 7. State Forest Enactments; 8. National Parks (Johore) Corporation Enactment, 1989; 9. Forest Enactment 1968, Sabah; 10. Parks Enactment 1984, Sabah; 11. Wildlife Conservation Enactment 1997, Sabah; 12. Lands Ordinance 1930, Sabah; 13. Forest Ordinance 1954, Sarawak; 14. Forest Rules 1962, Sarawak; 15. Wildlife Protection Ordinance 1998, Sarawak; and 16. Land Code 1958, Sarawak.
N/A	N/A
N/A	N/A

10.2.3 Original data

N/A

10.3 Data

Table 10

Category				
	National	Sub-national		
		Regional	Provincial/State	Local
Policies supporting sustainable forest management	yes	no	yes	no
... of which, in <u>publicly</u> owned forests	yes	no	yes	no
... of which, in <u>privately</u> owned forests	no	no	no	no
Legislation and regulations supporting sustainable forest management	yes	no	yes	yes
... of which, in <u>publicly</u> owned forests	yes	no	yes	yes
... of which, in <u>privately</u> owned forests	no	no	no	no

10.4 Comments

Variable / category	Comments related to data definitions etc
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Policies supporting sustainable forest management	All Permanent Reserved Forests (PRFs) are managed under sustainable forest management principle. National Forestry Policy 1978 (Revised 1992) is currently being reviewed.
Legislation and regulations supporting sustainable forest management	The National Forestry Act 1984 is currently being reviewed.

Other general comments

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11. Is there a national platform that promotes stakeholder participation in forest policy development?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

11.1 Categories and definitions

Category	Definition
National stakeholder platform	A recognized procedure that a broad range of stakeholders can use to provide opinions, suggestions, analysis, recommendations and other input into the development of national forest policy.

11.2 National data

11.2.1 Data sources

	References to sources of information	Years	Additional comments
1	MC&I (2002)	2002	N/A
2	An outlook of the Malaysian Forestry Sector in 2020	2008	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A

Table 11

Is there a national platform that promotes or allows for stakeholder participation in forest policy development?	yes
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11.3 Comments

Category	Comments related to data definitions etc
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National stakeholder platform	<p>Stakeholder participation in SFM is carried out through the various committees that have been established as follows:-</p> <ul style="list-style-type: none"> • National Level i. National Land Council chaired by Deputy Prime Minister. Council members include all the State Chief Ministers, the Minister of Natural Resources and Environment, and other Federal Ministers whose portfolios have an impact on the forestry sector, such as finance; trade; agriculture and agro-based industry; plantation industries and commodities; and science, technology and innovations; and heads of the forestry services of Peninsular Malaysia, Sabah and Sarawak. This council discusses and makes decisions on land and forestry issues including matters on indigenous and/or local communities ; and ii. FDPM - Department of Orang Asli Development (JAKOA) Committee jointly chaired by Director General of FDPM and JAKOA. Committee members comprised of all Directors of State Forestry Department and Directors of State Department of Orang Asli Development. This committee discusses issues pertaining to the involvement of indigenous peoples in achieving sustainable forest management (SFM). iii. National Steering Committee on REDD chaired by Secretary General, Ministry of Natural Resources and Environment, with members comprised of representatives from Ministry of Plantation Industries and Commodities, Ministry of Finance, Ministry of Agriculture, FDPM, Sabah Forestry Department, Sarawak Forest Department, Department of Wildlife and Natural Parks, Forest Research Institute Malaysia, Malaysian Remote Sensing Agency, State Economic Planning Unit, and Federal Economic Planning Unit. iv. National Technical Committee on REDD chaired by Deputy Secretary General, Ministry of Natural Resources and Environment, with members comprised of representatives from Ministry of Plantation Industries and Commodities, Ministry of Finance, Ministry of Agriculture, FDPM, Sabah Forestry Department, Sarawak Forest Department, Department of Wildlife and Natural Parks, Forest Research Institute Malaysia, Malaysian Remote Sensing Agency, State Economic Planning Unit, and Federal Economic Planning Unit. v. Annual Trilateral Ministerial Meeting on Heart of Borneo chaired by Minister of Natural Resources and Environment of Malaysia, Indonesia and Brunei by rotation. Members comprised of representatives from relevant agencies related to natural resources and environment. vi. National Steering Committee On Implementation of Central Forest Spine (CFS) chaired by Secretary General, Ministry of Natural Resources and Environment, with members comprised of representatives from FDPM, Forest Research Institute Malaysia, Department of Wildlife and Natural Parks, Department of Drainage and Irrigation, Department of Environment, Department of Town and Country Planning, State Economic Planning Unit and Federal Economic Planning Unit. vii. National Technical Committee On Implementation of CFS chaired by Director General FDPM, with members comprised of representatives from FDPM, Forest Research Institute Malaysia, Department of Wildlife and Natural Parks, Department of Drainage and Irrigation, Department of Environment, Department of Town and Country Planning, State Economic Planning Unit and Federal Economic Planning Unit. viii. Steering Committee On Planting of Mangrove Species and Other Suitable Species On National Coastal Areas chaired by Secretary General, Ministry of Natural Resources and Environment. Members comprised of representatives from Ministry of Natural Resources and Environment, FDPM, State Forestry Departments, Forest Research Institute Malaysia.
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12. What is the forest area intended to be in permanent forest land use and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

12.1 Categories and definitions

Category	Definition
Forest area intended to be in permanent forest land use	Forest area that is designated or expected to be retained as forest and is highly unlikely to be converted to other land use.
...of which permanent forest estate (<i>sub-category</i>)	Forest area that is designated by law or regulation to be retained as forest and may not be converted to other land use.

12.2 National data

12.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Of Peninsular Malaysia. Annual Report	Forest categories.	1990-2012	Statistical information covering forest area managed under SFM.
2	Forestry Department Of Peninsular Malaysia. Statistics Report	Forest categories.	1990-2012	Statistical information covering forest area managed under SFM.
3	Sabah Forestry Department	Forest categories.	1990-2012	Statistical information covering forest area managed under SFM.
4	Sarawak Forest Department	Forest categories.	1990-2012	Statistical information covering forest area managed under SFM.
5	Department of Wildlife and National Parks Peninsular Malaysia	Forest categories.	1990-2012	Statistical information covering National Park, Wildlife and Bird Sanctuary in Peninsular Malaysia.
6	FRA 2010	Pre-filled data.	N/A	N/A

12.2.2 Classification and definitions

National class	Definition
Permanent Reserved Forest	Land administered under:- • National Forestry Act, 1984 (Peninsular Malaysia); • Forest Ordinance Cap. 126 (1958 Edition) (Sarawak); • Forest Enactment, 1968 (Sabah).

National Park	Land administered under:- • National Parks Act, 1980 (Peninsular Malaysia); • Taman Negara Enactment (Kelantan), 1938 • Taman Negara Enactment (Pahang), 1939 • Taman Negara Enactment (Terengganu), 1939 • National Park Corporation Enactment (Johore) 1989; • State Park Corporation Enactment (Perak) 2003; • National Parks and Nature Reserves Ordinance Cap. 27, 1998 (Sarawak); • Parks Enactment, 1984 (Sabah).
Wildlife & Bird Sanctuary	Land administered under:- • Wildlife Conservation Act, 2010 (Peninsular Malaysia); • Wildlife Protection Ordinance Cap. 26, 1998 (Sarawak); • Wildlife Conservation Enactment, 1997 (Sabah).
- Stateland Forest - Alienated Land - Plantation Land - Urban areas	• National Land Code & Stateland Rules, 1965 (Peninsular Malaysia); • Land Code Cap 81, 1958 Edition (Sarawak) • Land Ordinance Cap. 68, 1930 (Sabah).

12.2.3 Original data

(Similar to table 4.2.3)

Forest	1990	2000	2005	2007	2010	2011	2012
Production Forest in '000ha							
- PRF	9,900	11,490	10,590	11,607	11,519	11,614	11,321
- Rubber plantation	1,836	1,431	1,229	1,207	1,020	1,023	1,042
Protection in '000ha							
- PRF	2,700	2,910	3,810	2,694	3,008	2,905	3,182
- National Park & wildlife & bird sanctuary	1,120	1,120	1,120	1,946	1,859	1,859	1,859
Multiple purpose in '000ha							
- Stateland Forest	6,820	4,640	4,141	3,416	4,718	4,630	4,656

Total Forest in '000ha	22,376	21,591	20,890	20,870	22,124	22,031	22,060
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12.3 Analysis and processing of national data

12.3.1 Adjustment

Figures for 2010 have been adjusted based on actual data available.

12.3.2 Estimation and forecasting

The figures for Permanent Reserved Forest and National Parks for 1990, 2000, 2005, 2010, 2011 and 2012 are available, while figure for 2012 has been assumed for 2015. The figure for 2015 for Stateland Forest has been forecasted as 4,735 ('000ha) using linear trend (Stateland Forest, $y=26x - 47,656$).

The figure for 2015 for Rubber Plantation has been forecasted as 1,098 ('000ha) using linear trend (Rubber Plantation, $y=19x - 37,186$).

(Similar to table 4.3.2)								
Forest	1990	2000	2005	2010	2011	2012	2015	
Production Forest in '000ha								
- PRF	9,900	11,490	10,590	11,519	11,614	11,321	11,321	
- Rubber plantation	1,836	1,431	1,229	1,020	1,023	1,042	1,098	
Protection in '000ha								
- PRF	2,700	2,910	3,810	3,008	2,905	3,182	3,182	



- National Park & wildlife & bird sanctuary	1,120	1,120	1,120	1,859	1,859	1,859	1,859	
Multiple purpose in '000ha								
- Stateland Forest	6,820	4,640	4,141	4,718	4,630	4,656	4,735	
Total Forest in '000ha	22,376	21,591	20,890	22,124	22,031	22,060	22,195	

12.3.3 Reclassification

N/A

12.4 Data

Table 12

Categories		Forest area 2010 (000 ha)
	Forest area intended to be in permanent forest land use	16386
	... of which permanent forest estate	14526

Tiers

Category	Tier for status
Forest area intended to be in permanent forest land use	Tier 3
Permanent forest estate	Tier 3

Tier Criteria

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

12.5 Comments

Category	Comments related to data definitions etc
Forest area intended to be in permanent forest land use	Forest area intended to be in permanent forest land use includes PRFs and National Park & Wildlife & Bird Sanctuary.
Permanent forest estate	Permanent forest estates / Permanent Reserved Forests (PRFs) are managed in perpetuity based on sustainable forest management principle in accordance with the definitions of International Tropical Timber Organizations (ITTO).

Other general comments

Response to reviewer's query to Table 12: The figure has been amended to include National Park & Wildlife & Bird Sanctuary.

13. How does your country measure and report progress towards SFM at the national level?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

13.1 Categories and definitions

Category	Definition
Forest area monitored under a national forest monitoring framework	Forest area monitored by a national monitoring framework or systems that provide measurement based periodic monitoring of forest extent and quality.
Forest reporting at national scale	National reporting of forest extent and characteristics that includes some measure of progress toward sustainable forest management.

13.2 National data

13.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department of Peninsular Malaysia Annual Report.	Forest categories and forest extent.	2010-2012	N/A
2	Forestry Department of Peninsular Malaysia Statistics	Forest categories, forest extent, Annual Allowable Cut, silviculture treatment.	2010-2012	N/A
3	Forestry Department of Peninsular Malaysia Geographic Information System (GIS).	Remote sensing and GIS data.	2009-2012	N/A
4	Forest Management Certification.	Compliance to MC&I.	2002-2012	N/A
5	Sabah Forestry Department	Forest categories, forest extent, Annual Allowable Cut, silviculture treatment.	2010-2012	N/A
6	Sarawak Forest Department	Forest categories, forest extent, Annual Allowable Cut, silviculture treatment.	2010-2012	N/A

13.2.2 Classification and definitions

National class	Definition
Extent of Forest	Status of forest area
Silviculture Treatment	Cutting of Lianas, Enrichment Planting, (refer to silviculture treatment)

Forest Harvesting	Forest Harvesting Plan, Monitoring of Forest Harvesting According to Annual Allowable Coupe.
Forest Plantation Establishment	Status of Forest Plantation Establishment.

13.3 Data

Table 13a

Category	% of total forest area	Most recent year	Check all boxes that apply					
			Continuous	Periodic	Permanent ground plots	Temporary ground plots	Aerial/remote sensing sample based	Aerial/remote sensing full coverage
Forest inventory	100	2012	yes	yes	yes	yes	yes	yes
Other field assessments	0.25	2012	no	yes	no	yes	no	no
Updates to other sources	N/A	N/A	no	no				
Expert estimate	N/A	N/A						

Table 13b

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

Other type of forest reporting

- Annual Allowable Coupe – quarterly report
- Status of Planting Stock – quarterly report
- Status of Silviculture Treatment – quarterly report
- Status of Plantation Establishment – quarterly report
- ITTO report on achievement of SFM – biannually
- Compliance Report to Annual Work Plan – annually (Sabah)

13.4 Comments

Category	Comments
Forest Inventory	Remote sensing imageries are used to verify strata of selected inventory plots.
N/A	N/A

N/A	N/A
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Other general comments

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14. What is the area of forest under a forest management plan and how is this monitored?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

14.1 Categories and definitions

Category	Definition
Forest area with management plan	Forest area that has a long-term documented management plan, aiming at defined management goals which is periodically revised
...of which for production (<i>sub-category</i>)	Forest management plan mainly focused on production
...of which for conservation (<i>sub-category</i>)	Forest management plan mainly focused on conservation
Monitoring of forest management plans	Government monitoring of forest management plan implementation conducted through field visits or audits of forest management plan performance

14.2 National data

14.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Of Peninsular Malaysia. Annual Report	Forest categories.	1990-2012	Statistical information covering PRF as well as National Park, Wildlife and Bird Sanctuary in Peninsular Malaysia.
2	Forestry Department Of Peninsular Malaysia. Statistics Report	Forest categories.	1990-2012	Statistical information covering PRF as well as National Park, Wildlife and Bird Sanctuary in Peninsular Malaysia.
3	Sabah Forestry Department	Forest categories.	1990-2012	Statistical information covering PRF as well as National Park, Wildlife and Bird Sanctuary in Sabah.
4	Sarawak Forest Department	Forest categories.	1990-2012	Statistical information covering PRF as well as National Park, Wildlife and Bird Sanctuary in Sarawak.
5	Department of Wildlife and National Parks Peninsular Malaysia	Forest categories.	1990-2012	Statistical information covering National Park, Wildlife and Bird Sanctuary in Peninsular Malaysia.
6	FRA 2010	Pre-filled data	N/A	N/A

14.3 Data

Table 14a

Forest plan type	Forest area 2010 (000 ha)
Forest area with management plan	13394
... of which for production	9637
... of which for conservation	3757

Table 14b

Indicate which (if any) of the following are required in forest management plans in your country	
1 Soil and water management	yes
2 High conservation value forest delineation	yes
3 Social considerations community involvement	yes

Table 14c

Percent of area under forest management plan that is monitored annually	100
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Tiers

Category	Tier for status
Forest area with management plan	Tier 3
Percent of area under forest management plan that is monitored annually	Tier 3

Tier criteria

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

14.4 Comments

Category	Comments
Forest area with management plan	Forest area with management plan includes production forest in PRF, protection forest in PRF as well as National Park & Wildlife & Bird Sanctuary.
Percent of area under forest management plan that is monitored annually	All forest areas under forest management plan are monitored annually through aerial surveillance, remote sensing, field inspection and quarterly progress report.

N/A	N/A
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Other general comments

Response to reviewer's query to Table 14c: Yes. All forest area under management plan is monitored by the respective State Forestry Departments every year.

15. How are stakeholders involved in the management decision making for publicly owned forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

15.1 Categories and definitions

Category	Definition
Stakeholder involvement	Stakeholder involvement is defined as significant inputs into at least one aspect of forest management at the operational scale

Table 15

Please indicate the type of stakeholder involvement in forest management decision making required in your country	
1. Planning phase	yes
2. Operations phase	yes
3. Review of operations	yes

Tiers

Category	Tier for status
Type of stakeholder inputs	Tier 3

Tier criteria

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

15.2 Comments

Category	Comments
Stakeholder involvement	Local communities, NGOs, aboriginal people and relevant government agencies.
N/A	N/A
N/A	N/A

Other general comments

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16. What is the area of forest under an independently verified forest certification scheme?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

16.1 Categories and definitions

Category	Definition
FSC certification	Forest area certified under the Forest Stewardship Council certification scheme
PEFC certification	Forest area certified under the Programme for the Endorsement of Forest Certification scheme
Other international forest management certification	Forest area certified under an international forest management certification scheme with published standards and is independently verified by a third-party, excluding FSC and PEFC certification.
Certified forest area using a domestic forest management certification scheme	Area certified under a forest management certification scheme with published standards that are nationally recognized and independently verified by a thirdparty

16.2 Data

Table 16a













International forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	FSC	73.3	73.3	73.3	73.3	73.3	73.3	69.19
	PEFC	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	71.66	213.73	203.84	173.04	507.22	507.22	
	PEFC	0	106.82	164.07	4317.24	4634.91	4634.91	
	Other	0	0	0	0	0	0	

Table 16b

Domestic forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	Name	0	0	0	0	0	0	0
	N/A	0	0	0	0	0	0	0
	N/A	0	0	0	0	0	0	0

		2007	2008	2009	2010	2011	2012	
	Name	0	0	0	0	0	0	
		0	0	0	0	0	0	
		0	0	0	0	0	0	

Tier criteria

Category	Tier for status
International forest management certification	Tier 3: International forest management scheme records maintained by the certifying organization for the reporting year Tier 2: International forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other
Domestic forest management certification	Tier 3: National registry reports for domestic forest management certification maintained by the certifying organization for the reporting year Tier 2: Domestic forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year Tier: 1 Other

Tiers

Category	Tier for status
International forest management certification	Tier 3
Domestic forest management certification	Tier 1

16.3 Comments

Category	Comments related to data definitions etc
Certified forest area using an international forest management certification scheme	Forest areas certified under FSC and PEFC for year 2010, 2011 and 2012 had been updated according to the latest record available. Effective 2013, Forest Management Units (FMUs) in Peninsular Malaysia are certified under Malaysia Criteria and Indicators (Natural Forest).
Domestic forest management certification	n.a

Other general comments

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17. How much money do governments collect from and spend on forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

17.1 Categories and definitions

Category	Definition
Forest revenue	All government revenue collected from the domestic production and trade of forest products and services. For this purpose revenue include: <ul style="list-style-type: none"> • <u>Goods</u> : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products. • <u>Services</u> : including concession fees and royalties, stumpage payments, public timber sales revenue taxes and charges based on forest area or yield, taxes on domestic trade and export of forest products, special levies on forestry activities and payments into forest related funds, other miscellaneous inspection, licence and administrative fees levied by forest administrations, permit and licence fees for recreation and other forest related activities.
Public expenditure on forestry	All government expenditure on forest related activities.

17.2 National data

17.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Of Peninsular Malaysia	Forest revenue and public expenditure on forestry.	2000-2012	Forest revenue includes royalty, cess, premium and other miscellaneous collections in Peninsular Malaysia. Public expenditure on forestry includes all development and operational expenditures in Peninsular Malaysia.
2	Sabah Forestry Department	Forest revenue and public expenditure on forestry.	2000- 2012	Forest revenue includes royalty, cess, premium and other miscellaneous collections in Sabah. Public expenditure on forestry includes all development and operational expenditures in Sabah.
3	Sarawak Forest Department	Forest revenue and public expenditure on forestry.	2000- 2012	Forest revenue includes royalty, cess, premium and other miscellaneous collections in Sarawak. Public expenditure on forestry includes all development and operational expenditures in Sarawak.

4	Forest Research Institute Malaysia	Revenue and public expenditure on forestry research.	2000- 2012	Revenue includes all research grants from Federal Government and service fees from private sector for the purpose of forestry research. Research and development expenditure includes all development and operational expenditures on forestry research.
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17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	1531084	1606191	1505533
Public expenditure on forestry	285525	373205	842777

	2000	2005	2010
Name of Local Currency	Ringgit Malaysia (RM)	N/A	N/A

17.4 Comments

Category	Comments related to data definitions etc
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. This includes revenue collected by all levels of government (i.e. central, regional/provincial and municipal level), but excludes the income of publicly owned business entities. There is a decrease on forest revenue collection since 2005 possibly due to drop in forest premium collection as a result of decrease in wood removals from forest.
Public expenditure on forestry	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 includes the forest sector component of the agency's total expenditure. This also includes other institutions (e.g. in research, training and marketing) solely engaged in the forest sector, but it excludes the expenditure of publicly owned business entities. The significant increase in public expenditure on forestry since 2005 shows that the government is committed to forest conservation and environment protection.
Other general comments	N/A

Other general comments

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18. Who owns and manages the forests and how has this changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

18.1 Categories and definitions

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

18.2 National data

18.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Of Peninsular Malaysia.	Public and private ownership.	1990-2012	Statistical information on public and private ownership in Peninsular Malaysia.
2	Sabah Forestry Department	Public and private ownership.	1990-2012	Statistical information on public and private ownership in Sabah.
3	Sarawak Forest Department	Public and private ownership.	1990-2012	Statistical information on public and private ownership in Sarawak.
4	Department of Wildlife and National Parks Peninsular Malaysia	Public ownership.	1990-2012	Statistical information on National Parks and Wildlife Reserves in Peninsular Malaysia.
5	Ministry of Plantation Industries and Commodities Malaysia. Statistics on Commodities	Public ownership.	1990-2012	Statistical information on rubber plantations in Malaysia
6	FRA 2010	Pre-filled data.	N/A	N/A

18.2.2 Classification and definitions

National class	Definition
Private ownership - Rubber plantation	• Forest land administered under the National Land Code 1965; and Stateland Rules
Public ownership - Permanent Reserved Forest - National Park - Wildlife and Bird Sanctuary - Stateland	• Land administered under the National Forestry Act 1984; National Land Code, 1965; Land administered under the National Parks Act 1980; Wildlife Conservation Act, 2010 (Peninsular Malaysia); Taman Negara Enactment (Kelantan), 1938; Taman Negara Enactment (Pahang), 1939; Taman Negara Enactment (Terengganu), 1939; 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; and National Parks and Nature Reserves Ordinance, 1998, Sarawak.
N/A	N/A
N/A	N/A

18.2.3 Original data

N/A

18.3 Analysis and processing of national data

18.3.1 Adjustment

N/A

18.3.2 Estimation and forecasting







N/A



18.3.3 Reclassification

N/A

18.4 Data

Table 18a

Categories		Forest area (1000 hectares)			
		1990	2000	2005	2010
	Public ownership	21877	21347	20559	21104
	... of which owned by the state at national scale	N/A	N/A	N/A	N/A
	... of which owned by the state at the sub-national government scale	21877	21347	20559	21104
	Private ownership	499	244	331	1020
	... of which owned by individuals	N/A	N/A	N/A	N/A
	... of which owned by private business entities and institutions	N/A	N/A	N/A	N/A

	... of which owned by local, tribal and indigenous communities	N/A	N/A	N/A	N/A
	Unknown ownership	0	0	0	0
TOTAL		22376.00	21591.00	20890.00	22124.00

Tiers

Category	Tier for status	Tier for reported trend
Public ownership	Tier 3	Tier 3
Private ownership	Tier 3	Tier 3
Unknown ownership	Tier 1	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
Ownership	Tier 3: National forestry statistics registers of land titles or maps on land ownership or all forest area under one ownership category that is five years old or less. Tier 2: National forestry statistics registers of land titles or maps on land ownership or questionnaires that are more than five years old. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Public Administration	20781	19328	18479	20858
Individuals	0	0	0	0
Private companies	1096	2019	2080	246
Communities	0	0	0	0
Other	0	0	0	0
TOTAL	21877.00	21347.00	20559.00	21104.00

Category	Tier for reported trend	Tier for status
Public Administration	Tier 3	Tier 3

Individuals	Tier 1	Tier 1
Private companies	Tier 3	Tier 3
Communities	Tier 1	Tier 1
Other	Tier 1	Tier 1

18.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Public ownership	Public ownership refers to PRF, National Park & Wildlife & Bird Sanctuary and Stateland forest.	Area under public ownership is relatively stable since 2010 and this trend is expected to remain in the near future.
Private ownership	Rubber plantations are under private ownership.	Area under private ownership is also relatively stable since 2010 and not much variation is expected in the near future.
Unknown ownership	N/A	N/A
Management rights	Data on individuals, communities and other holders of management rights are not available.	N/A

Other general comments to the table

Under the Malaysian constitution, forests are owned by the State Authority and managed by each State Forestry Department.

19. How many people are directly employed in forestry?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

19.1 Categories and definitions

Category	Definition
Full-time equivalents (FTE)	A measurement equal to one person working full-time during a specified reference period.
Employment in forestry	Employment in activities related to production of goods derived from forests. This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

19.2 National data

19.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department Of Peninsular Malaysia.	Full time equivalents (FTE) and employment in forestry.	1990-2012	Statistical information for employment in logging industry and forestry department in Peninsular Malaysia.
2	Sabah Forestry Department	Full time equivalents (FTE) and employment in forestry.	1990-2012	Statistical information for employment in logging industry and forestry department in Sabah.
3	Sarawak Forest Department	Full time equivalents (FTE) and employment in forestry.	1990-2012	Statistical information for employment in logging industry and forestry department in Sarawak.
4	Malaysian Timber Industry Board	Full time equivalents (FTE) and employment in forestry.	1990-2012	Statistical information for employment in logging industry and forestry department in Malaysia.

19.2.2 Classification and definitions

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

19.2.3 Original data

FRA Categories	Employment (1000 person-years)					
	1990	2000	2005	2010	2011	2012
Logging	67.3	58.9	119	54.66	42.54	44.34
Staff of Forest Department	10.5	8.3	8	10.00	10.18	10.02
Unspecified forestry activities	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL	78	67	127	64.66	52.72	54.36

Estimation and forecasting

The forestry department staff 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, 18% in 2009, 21% in 2010 and 20% in 2011 of the total forest area) and “production” (83%, 81%, 82% 79% and 80%).

Employment in primary production of goods.

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

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



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

$$2010 : 54.7 + 10.0 * 0.79 = 63$$

$$2011 : 42.5 + 10.1 * 0.80 = 51$$

19.3 Data

Table 19

Category		Employment (000 years FTE)			
		1990	2000	2005	2010
	Employment in forestry	76	66	125	63
	... of which female	N/A	N/A	N/A	N/A

19.4 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	Employment in the logging sector and staff of forestry department.	The decrease in employment in forestry since 2010 is due to decrease in area opened for forest harvesting.

Other general comments to the table
N/A

20. What is the contribution of forestry to Gross Domestic Product (GDP)?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

20.1 Categories and definitions

Category	Definition
Gross value added from forestry (at basic prices)	This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

20.2 Data

Table 20 (Pre-filled data from UNdata/EUROSTAT)

Category	Million	Currency	Year for latest available information
Gross value added from forestry (at basic prices)	9268	ringgit	2011

20.3 Comments

Category	Comments
Gross value added from forestry (at basic prices).	The pre-filled data for 2011 has been amended to 9,268 million.

Other general comments

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21. What is forest area likely to be in the future

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

21.1 Categories and definitions

Category	Definition
Government target/aspiration for forest area	Government target/aspiration for forest area for a specific year.
Forests earmarked for conversion	Forest area that is allocated/classified or scheduled to be converted into non-forest uses.

21.2 National data

21.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forestry Department of Peninsular Malaysia	Forest areas	1990-2012	Statistical information for forest area in Peninsular Malaysia
2	Sabah Forestry Department	Forest areas	1990-2012	Statistical information for forest area in Sabah
3	Sarawak Forest Department	Forest areas	1990-2012	Statistical information for forest area in Sarawak
4	An Outlook of Malaysian Forestry Sector in 2020	Government target/aspiration for forest area.	2008	Reference for estimation of government target for forest area in 2020

21.3 Data

Table 21a

Category	Forest area (000 ha)	
	2020	2030
Government target/aspiration for forest area	N/A	N/A

Table 21b

Category	Forest area (000 ha)
	2013
Forests earmarked for conversion	4656

21.4 Comments

Category	Comments
Government target/aspiration for forest area	There's no specific government target or aspiration of forest area in 2020 and 2030.
Forests earmarked for conversion	Stateland forests are earmarked for future land development and conversion.

Other general comments

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