

GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

Philippines

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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Introductory Text

The Philippines has finished the 2010 land cover mapping which was done by the the National Mapping and Resource Information Authority (NAMRIA). The result was eventually released in August 2013 and reviewed and analyzed by the Forest Management Bureau of the Department of Environment and Natural Resources (FMB-DENR). Based on the 2010 land cover data, the total forest cover of the Philippines is 6,839,718 ha or 23% of the country's total area of 30,000,000 ha. Based on the assessment made by FMB, the total forest cover of the Philippines decreased by 328,682 hectares (4.59%) from 7,168,400 hectares in 2003 to 6,839,718 hectares in 2010 or an annual change of 46,954 hectares . There are eleven (11) regions where the total forest cover decreased and six (6) regions where it increased. Regions where it decreased in terms of area are Region 4-B (279,480 ha), Region 2 (105,338 ha), Region 12 (100,184 ha), Region 6 (77,195 ha), Region 3 (68,897 ha), Region 1 (65,324 ha), Region 4-A (20,017 ha), Region 7 (12,804 ha), Region 8 (5,384), Region 9 (5,277 ha) and NCR (606 ha). On the other hand, the regions where it increased are Region 13 (159,820 ha), CAR (100,871 ha), ARMM (51,548 ha), Region 5 (51,539 ha), Region 10 (40,365 ha) and Region 11 (7,681 ha).

The decrease in forest cover in 2010 will be compensated by the expected increase of the same in Year 2011 onwards with the massive greening activities that is being undertaken by the present leadership of the country thru the National Greening Program (NGP) which is being implemented by virtue of Executive Order No. 26.

Aside from that the Philippines also intensifies its forest protection initiatives thru the issuance of the Executive Order No. 23 entitled "Declaring a Moratorium on the Cutting and Harvesting of Timber in the Natural and Residual Forests and Creating the Anti-Illegal Logging Task Force".

On the other hand, the Forest Management Bureau is currently conducting the relocation and remeasurement of 371 FRA tracts established in 2002-2004 during the FAO supported NFA Project. This FRA tracts remeasurement is expected to finish by Year 2015. For the 2015 Global FRA country reporting, the Philippines has decided to use the results of the 2002-2004 FRA project while the remeasurements of FRA tracts is not yet completed. The volume per hectare generated during the 1988 and 2003 National Forest inventories were interpolated and extrapolated in order to come up with the estimated data for reporting years 1990, 2000, 2005, 2010 and 2015.

In this country report, there is slight difference in data and information as compared with the 2010 country report made and submitted by the Philippines particularly the area of forest, other wooded land, and other land. The country has decided to exclude the area of forest in the calibration and adjustment activities so that the

area of forest that the country is reporting in the local, national, regional as well as global communities/partners is one and the same. In the past, the forest data that is being reported to the regional and global partners is different to what is being reported in the local and national agencies. Therefore, all data that is a function of area of forest are adjusted accordingly in this Global FRA 2015 country report.

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 both the 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
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1	GOP (Government of the Philippines). 1969. First National Forest Inventory. Philippines.	Extent of Forest	1969	The inventory was carried out from 1965 to 1969. The double sampling design was employed, consisting of photo-point sampling on aerial photographs and ground plot sampling in the field.
2	FMB. 1988. Natural Forest Resources of the Philippines. Philippine –German Forest Resources Inventory Project. Forest Management Bureau. Philippines.	Extent of Forest	1988	The inventory was carried out from 1979 to 1988. Regions 10 & 11 were inventoried using systematically distributed clusters of strip samples. Other regions were inventoried using clusters of angle-count samples with concentric circles.
3	NFA 2005. National Forest Resource Assessment – Philippines. Working paper 96. FAO Rome.	Extent of Forest	2005	The FAO-supported National Forest Assessment (NFA) Project was implemented from 2002-2005. Sampling units were established at each 15 minutes longitude and 15 minutes latitude. The inventory estimates forest area through its percentage in each of the measurement plot of 0.5 ha.
4	FMB. 2003. Philippine Forestry Statistics. Forest Management Bureau, Department of Environment and Natural Resources. Philippines	Extent of Forest	2003	The National Mapping and Resource Information Authority (NAMRIA) carried out a national remote sensing survey to complement the FAO-supported NFA Project. The Forest Cover Data generated by NAMRIA was adopted as the official forest cover statistics in the Philippines as it provides information at the sub-national level.
5	FMB. 2006. Philippine Official Reference for Forest-Related Terms and Definitions. Forest Management Bureau, Department of Environment and Natural Resources. Philippines	Extent of Forest	2006	It is a compendium of harmonized forest-related terms and definitions. It is the final output of the ITTO-funded project entitled “Harmonization of Forest-Related Terms and definitions”.
6	FMB Philippine Forestry Statistics. Forest Management Bureau, Department of Environment and Natural Resources	Forest establishment & regeneration	1988 to 2007	Provides information on the area planted by region and by sector for a given year.

7	FMB. 2010 and 2011. Philippine Forestry Statistics. Forest Management Bureau, Department of Environment and Natural Resources. Philippines	Forest establishment & regeneration	2010 to 2011	The National Mapping and Resource Information Authority (NAMRIA) carried out a national remote sensing survey. The Forest Cover Data generated by NAMRIA was adopted as the official forest cover statistics in the Philippines as it provides information at the sub-national level.
8	2010 Land Cover Mapping. National Mapping and Resource Information Authority and FMB, Department of Environment and Natural Resources	Extent of Forest	2010	NAMRIA carried out the national land cover mapping using ALOS-AVNIR-2, SPOT5 and LandSat Imageries

1.2.2 Classification and definitions

National class	Definition
A. 1988 Definitions	N/A
Forest	Area of one hectare or more which is at least 10 percent stocked with forest trees (including seedlings and saplings), wild palm, bamboo or brush. Narrow strips of land bearing forest must be at least 60 meters wide and one hectare in size to qualify as forest. Industrial tree plantations and tree farms one hectare or more in size are also included.
Dipterocarp Forest, Old Growth	Tropical rain forest dominated by Dipteroarpaceae without traces of commercial logging.
Dipterocarp Forest, Residual	Tropical rain forest dominated by Dipteroarpaceae with traces of commercial logging.
Mangrove Forest	The type of forest occurring on tidal mudflats along the sea coast extending along the streams where the water is brackish and composed mainly of bakauan, pototan, langarai, api-api, nipa pal and the like.
Mossy Forest	Forest stand found principally on high and very rough mountainous regions characterized by steep ridges rising to peaks whose sides cut into smaller ridges. The trees are mostly dwarf with stems and branches usually covered by moss.
Pine Forest, Closed	Pure stand of Benguet Pine (<i>Pinus kesiya</i>) or Mindoro Pine (<i>Pinus merkusii</i>) with a crown cover above 30%.
Pine Forest, Open	Pure stand of Benguet Pine (<i>Pinus kesiya</i>) or Mindoro Pine (<i>Pinus merkusii</i>) with a crown cover of 10-30%.
Submarginal Forest	Tropical rain forest dominated by Leguminosae and lesser utilized species, mainly restricted to shallow and excessively drained limestone soils.
Brushland	Degraded areas dominated by a discontinuous cover of shrubby vegetation.

Other land use	Land not classified as forest and brushland.
Afforestation	Artificial establishment of forest on lands previously not covered with forest vegetation.
Reforestation	The establishment of forest plantations on temporarily unstocked lands that are considered as forest. Also called as artificial regeneration.
B. 2003 & 2010 Definitions. In general it follows FRA definition of “Forest” and “Other wooded lands”.	N/A
Total area	Total area (of country), including area under inland water bodies, but excluding offshore territorial waters.
Forest	Land with an area of more than 0.5 hectare and tree crown cover (or equivalent stocking level) of more than 10%. The trees should be able to reach a minimum height of 5 meters at maturity in situ. Young natural stands and all plantations established for forestry purposes, which have yet to reach a crown cover density of more than 10% or tree height of 5 meters are included under forest
Broadleaved forest	Forest with predominance (more than 75 percent of tree crown cover) of trees of broadleaved species.
Coniferous forest	Forest with predominance (more than 75 percent of tree crown cover) of trees of coniferous species.
Bamboo/palms formations	Forest on which more than 75% of the crown cover consists of tree species other than coniferous or broadleaved species (e.g. tree-form species of the bamboo, palm and fern families).
Mixed forest	Forest in which neither coniferous, nor broadleaved, nor palms, bamboos, account for more than 75 percent of the tree crown cover.
<40%)" /> Open forest (10-<40%)	Formations where trees form a discontinuous layer covering between 10 to 40 percent of ground. This forest usually includes a continuous grass layer allowing grazing activities and the spreading of fires. (Examples are the different types of «cerrado» and «chaco» in Latin America, wooded savannas and woodlands in Africa).
40%)" /> Closed forest (> 40%)	Natural forest where trees in the various storeys and undergrowth cover 40 percent of the ground. These formations do not; have a continuous dense grass layer. They are either managed or unmanaged forests primary or in an advanced state of reconstitution and may have been logged-over one or more times, having kept their characteristics of forest stands, possibly with modified structure and composition. Typical examples of tropical closed forest formations include tropical rain forest and mangrove forest .
Forest plantation	Forest stands established by planting or/and seeding in the process of afforestation or reforestation. They are either of introduced species (all planted stands), or intensively managed stands of indigenous species, which meet all the following criteria: one or two species at plantation, even age class, regular spacing.
<40%)" /> Open broad-leaved forest plantation (10-<40%)	Forest plantation where the crown cover is between 10 and 40 percent of the area.

40%) " /> Closed broad-leaved forest plantation (> 40%)	Forest plantation where the crown cover is above or 40 percent of the area.
Other wooded land	Land either with a crown cover (or equivalent stocking level) of 5-10 percent of trees able to reach a height of 5 m at maturity in situ; or a crown cover (or equivalent stocking level) of more than 10 percent of trees not able to reach a height of 5 m at maturity in situ (e.g. dwarf or stunted trees); or with shrub or bush cover of more than 10 percent.
Shrubs	Refers to vegetation types where the dominant woody elements are shrubs i.e. woody perennial plants, generally of more than 0.5 m and less than 5 m in height on maturity and without a definite crown. The height limits for trees and shrubs should be interpreted with flexibility, particularly the minimum tree and maximum shrub height, which may vary between 5 and 7 meters approximately.
Fallow	It encompasses forest fallow where the woody vegetation is under 5 m. Height. It refers to woody vegetation deriving from the clearing of natural forest for shifting agriculture. It is part of a forest fallow consisting of a mosaic of various reconstitution phases. The vegetation does not reach a height of 5 m.
<10%) " /> Wooded grasslands (5-<10%)	Land where the trees cover between 5 to 10 percent of the area and their height may reach 5 m at maturity.
Other land	Land not classified as forest or other wooded land, as described above. Including cultivated land, grasslands and pastures, built-up areas, barren land etc.
Inland water	Area occupied by major rivers, lakes and reservoirs.

1.2.3 Original data

FOREST AREA			
A. 1988 FRI (RP-GTZ FRI Project. Details may not add up to totals due to rounding)			
Land Cover/Forest Type	Area (1000 ha)		
	Forestland	A & D Land	Total
Forest	6351.9	108.7	6460.6
Dipterocarp Forest	4319.6	81.5	4401.1
Dipterocarp Forest, Old Growth	986.8	1.5	988.3
Dipterocarp Forest, Residual	3332.8	80.0	3412.8
Pine Forest	236.7	2.1	238.8
Closed	129.6	0	129.6
Open	107.1	2.1	109.2

Submarginal Forest	535.7	8.5	544.2
Mangrove Forest	125.7	13.4	139.1
Mossy Forest	1134.2	3.2	1137.4
Brushland	2045.1	480.0	2525.1
Other land use	7494.9	13519.4	21014.3
TOTAL, PHILIPPINES	15891.9	14108.1	30000.0

B. 2003 NFA (NAMRIA Data. Details may not add up to totals due to rounding)

Land Cover/Forest Type	AREA (1000 ha)		
	Forestland	A & D land	Total
Forest	6432	737	7168
Closed Forest	2481	80	2561
Broadleaved	2377	72	2449
Mixed	17	8	25
Coniferous	87	1	87

Open Forest	3516	515	4031
Broadleaved	3359	488	3847
Mixed	51	19	70
Coniferous	106	7	113
Mangrove	154	94	247
Forest Plantation	282	48	330
Broadleaved	277	48	325
Coniferous	3	0	3
Mangrove	1	0	2
Other Wooded Land	4794	2795	7589
Shrubs	2387	1266	3653
Fallow	42	18	61
Wooded Grassland	2365	1512	3876
Otherland	3925	10333	14258
Barren Land	32	115	147
Grassland	1095	854	1949
Marshland	80	102	183
Annual Crop	1228	5643	6871
Perennial Crop	1465	3345	4810
Built-up Area	24	274	298
Inland Water	125	393	518
Inland water	35	264	299
Fishpond	90	129	219
GRAND TOTAL	15185	14129	29534

C. 2010 NFA ((NAMRIA Data. Details may not add up to totals due to rounding)

Land Cover/Forest Type	AREA (1000 ha)		
	Forestland (ha)	A & D lands	Total
Forest			6840
Closed Forest	1869	65	1934
Open Forest	4255	295	4550
Mangrove Forest	201	109	311
Plantation Forest	30	15	45
Other Wooded Lands			7191
Shrub			3355
Fallow			7
Wooded Grassland			3829
Other Land			15042
Barren land			97.3
Grassland			1431
Marshland			132
Annual Crop			6276
Perennial Crop			6168
Built-up Area			692
Fishpond			245
Inland Water			481
Inland Water			481
GRAND TOTAL			29554

FOREST EXPANSION, REFORESTATION

A. Philippine Forestry Statistics

Year	Area Planted (ha)			
	Total	Government Sector	Non-government sector	5-Year Average
2012	221763			97120
2011	128559			
2010	36877	32384	4493	
2009	54792	53842	950	
2008	43609	27752	15857	
2007	27837	25752	2813	17397
2006	7223	4476	2747	
2005	16498	7187	9311	
2004	20338	12436	7902	

2003	15088	13195	1893	33846
2002	25620	20681	4939	
2001	31444	26524	4920	
2000	27632	21740	5892	
1999	42167	31184	10983	
1998	42368	33219	9149	
1992	40593	24304	16289	104176
1991	93039	73602	19437	
1990	191663	153949	37714	
1989	131404	89452	41952	
1988	64183	31226	32957	

1.3 Analysis and processing of national data

1.3.1 Adjustment

Forest area

The 1988 FRI data was not calibrated as the area of the country is consistent with official figures (30 M); however, the area of “Other land” was adjusted to provide data for “Inland water” to match with FAOSTAT Data (183 000 ha). On the other hand, the 2003 and 2010 NFA data (NAMRIA) was calibrated to match with internationally reported and validated total area of the Philippines as maintained by the UN Statistical Division (30 M ha) and then adjusted the area of “Inland Water” to match the FAOSTAT figure (183 000 ha), with all adjustments made in the area of “Other Land”. The area of forests generated by the 2003 and 2010 land Cover Mapping done by NAMRIA was not included in the calibration, only the areas of other wooded land, other land, and inland water were used in the calibration to match with internationally reported area of the Philippines which is 30M hectares.

1. **1988 FRI (RP-GTZ FRI Project.** Details may not add up to totals due to rounding)

	Original Data	Adjusted data
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Land Cover/ Forest Type	Area (1 000 ha)			Area (1 000 ha)		
	Forestland	A&D land	Total	Forestland	A&D land	Total
Forest	6 351.9	108.7	6 460.6	6 351.9	108.7	6 460.6
Dipterocarp Forest	4 319.6	81.5	4 401.1	4 319.6	81.5	4 401.1
Dipterocarp Forest, Old growth	986.8	1.5	988.3	986.8	1.5	988.3
Dipterocarp Forest, Residual	3 332.8	80.0	3 412.8	3 332.8	80.0	3 412.8
Pine Forest	236.7	2.1	238.8	236.7	2.1	238.8
Closed	129.6	0	129.6	129.6	0	129.6
Open	107.1	2.1	109.2	107.1	2.1	109.2
Submarginal Forest	535.7	8.5	544.2	535.7	8.5	544.2
Mangrove Forest	125.7	13.4	139.1	125.7	13.4	139.1
Mossy Forest	1 134.2	3.2	1 137.4	1 134.2	3.2	1 137.4
Brushland	2 045.1	480.0	2 525.1	2 045.1	480.0	2 525.1
Other land use	7 494.9	13 519.4	21 014.3	7 429.6	13 401.7	20 831.3
Inland water				65.3	117.7	183.0
Total, Philippines	15 891.9	14 108.1	30 000.0	15 891.9	14 108.1	30 000.0

1. **2003 NFA (NAMRIA Data.** Details may not add up to totals due to rounding)

Land Cover/Forest Type	TOTAL		
	Forestland 1000 (ha)	A&D land 1000 (ha)	Total 1000 (ha)
Forest	6 432	737	7 168
Closed Forest	2 481	80	2 561
Broadleaved	2 377	72	2 449
Mixed	17	8	25
Coniferous	87	1	87
Open Forest	3 516	515	4 031
Broadleaved	3 359	488	3 847
Mixed	51	19	70
Coniferous	106	7	113
Mangrove	154	94	247
Forest Plantation	282	48	330
Broadleaved	277	48	325
Coniferous	3	0	3
Mangrove	1	0	2
Other Wooded land	4 794	2 795	7 589
Shrubs	2 387	1 266	3 653
Fallow	42	18	61
Wooded Grassland	2 365	1 512	3 876
Other Land	3 925	10 333	14 258
Barren Land	32	115	147
Grassland	1 095	854	1 949
Marshland	80	102	183
Annual Crop	1 228	5 643	6 871
Perennial Crop	1 465	3 345	4 810

Built-up-area	24	274	298
Inland Water	125	393	518
Inland Water	35	264	299
Fishpond	90	129	219
GRAND TOTAL	15 185	14 129	29 534

calculating the calibration factor

Area of the Philippines (original 2003 NAMRIA Data)	29 534
Area of the Philippines (FAOSTAT)	30 000
Area of the Philippines (original 2003 NAMRIA data less the area of forests)	22,365
Area of the Philippines (FAOSTAT less area of forests)	22,832
Calibration factor (FAOSTAT/NAMRIA data)	1.02084561
Note: The area of forest was not included in the calibration	

2003 NFA (calibrated and adjusted NAMRIA Data. Details may not add up to totals due to rounding)

Land Use/ Forest Type	Calibrated Data			Adjusted Data		
	Area (1000 ha)			Area (1000 ha)		
	Forestland	A&D land	Total	Forestland	A&D land	Total
Forest	6,432	737	7,168	6,432	737	7,168
Closed Forest	2,481	80	2,561	2,481	80	2,561
Broadleaved	2,377	72	2,449	2,377	72	2,449
Mixed	17	8	25	17	8	25
Coniferous	87	1	87	87	1	87
Open Forest	3,516	515	4,031	3,516	515	4,031
Broadleaved	3,359	488	3,847	3,359	488	3,847

Mixed	51	19	70	51	19	70
Coniferous	106	7	113	106	7	113
Mangrove	154	94	247	154	94	247
Forest Plantation	282	48	330	282	48	330
Broadleaved	277	48	325	277	48	325
Coniferous	3	0	3	3	0	3
Mangrove	1	0	2	1	0	2
Other Wooded land	4,894	2,854	7,747	4,894	2,854	7,747
Shrubs	2,437	1,292	3,729	2,437	1,292	3,729
Fallow	43	18	62	43	18	62
Wooded Grassland	2,414	1,543	3,957	2,414	1,543	3,957
Other Land	4,007	10,548	14,555	4,113	10,788	14,901
Barren Land	33	118	150	33	119	152
Grassland	1,118	872	1,990	1,122	881	2,002
Marshland	82	104	186	82	105	188
Annual Crop	1,254	5,760	7,014	1,258	5,818	7,076
Perennial Crop	1,496	3,415	4,911	1,501	3,449	4,950
Built-up- area	25	280	304	25	282	307
Fishpond			-	92	133	226
Inland Water	127	401	529	21	162	183
Inland Water	35	269	305	21	162	183
Fishpond	92	132	224	-	-	-
GRAND TOTAL	15,460	14,540	30,000	15,460	14,540	30,000

3. 2010 NFA DATA (Calibrated and adjusted NAMRIA Data. Details may not add up to totals due to rounding)

2010 Land Cover/Forest Type	Area (1000 ha)
Forest	6,840
Closed Forest	1,934
Broadleaved	1,890
Mixed	28
Coniferous	16
Open Forest	4,550
Broadleaved	4,311
Mixed	75
Coniferous	164
Mangrove	311
Forest Plantation	45
Broadleaved	44
Coniferous	1
Other Wooded land	7,191
Shrubs	3,355
Fallow	7
Wooded Grassland	3,829
Other Land	15,042
Barren Land	97
Grassland	1,431
Marshland	131
Annual Crop	6,276
Perennial Crop	6,168
Built-up-area	692

Fishpond	245
Inland Water	481
Inland Water	481
GRAND TOTAL	29,554

Calculating the Calibration Factor

Area of the Philippines (original 2010 NAMRIA Data)	29 554
Area of the Philippines (FAOSTAT)	30 000
Area of the Philippines (original 2010 NAMRIA Data less the area of forests)	22 714
Area of the Philippines (FAOSTAT less the area of forest)	23 160
Calibration factor (FAOSTAT/NAMRIA data)	1.0196282
Note: The area of forest was not included in the calibration	

L and Cover/Forest Type	Calibrated 2010 data	Adjusted 2010 data
	Area (1000 ha)	Area (1000 ha)
Forest	6,840	6,840
Closed Forest	1,934	1,934
Broadleaved	1,890	1,890
Mixed	28	28
Coniferous	16	16
Open Forest	4,550	4,550
Broadleaved	4,311	4,311

Mixed	75	75
Coniferous	164	164
Mangrove	311	311
Forest Plantation	45	45
Broadleaved	44	44
Coniferous	1	1
Other Wooded land	7,333	7,333
Shrubs	3,421	3,421
Fallow	7	7
Wooded Grassland	3,904	3,904
Other Land	15,337	15,645
Barren Land	99	101
Grassland	1,459	1,489
Marshland	134	137
Annual Crop	6,399	6,528
Perennial Crop	6,289	6,416
Built-up-area	706	720
Fishpond	250	255
Inland Water	491	183
Inland Water	491	183
GRAND TOTAL	30,000	30,000

Forest expansion, reforestation

This step is not necessary.

1.3.2 Estimation and forecasting

Forest area

In the estimation and forecast of Land Use area, the adjusted 1988 FRI, 2003 and 2010 NFA (calibrated and adjusted NAMRIA data) datasets were used. Furthermore, for 2003 and 2010, the area of “Other Land” was adjusted to make the area of “inland water bodies” consistent with FAOSTAT figures. For 2015 reporting period/data, the National Greening Program (NGP) target of 1.2M hectares from CY 2011 to 2015 was already considered that explains the increase in forest cover. The said increase in forest cover in 2015 is due to the establishment of plantation forests.

Land Use/Forest Type	Area (1000 ha)			
	Adjusted 1988 FRI Data	Adjusted 2003 Data	Difference	Annual Change
Forest	6,461	7,168	708	47
Other Wooded Land	2,525	7,747	5,222	348
Other Land	20,831	14,901	(5,930)	(395)
Inland Water	183	183	-	-

Land Use/Forest Type	Area (1000 ha)			
	Adjusted 2003 Data	Adjusted 2010 Data	Difference	Annual Change
Forest	7,168	6,840	(329)	(47)
Other Wooded Land	7,747	7,333	(415)	(59)
Other Land	14,901	15,645	743	106
Inland Water	183	183		

National Greening Program (NGP) Target

Year	Area (ha)
2011	100,000
2012	200,000
2013	300,000
2014	300,000
2015	300,000

Year	Area by land Use (1000 ha)				
	Forest	OWL	OL	IW	Total
1988	6,461	2,525	20,831	183	30,000
1990	6,555	3,221	20,041	183	30,000
2000	7,027	6,703	16,087	183	30,000
2003	7,168	7,747	14,901	183	30,000
2005	7,074	7,629	15,114	183	30,000
2010	6,840	7,333	15,645	183	30,000
2015	8,040	7,036	14,741	183	30,000

(Details may not add up to totals due to rounding)

Other land is calculated as a difference between total country area as given by FAOSTAT, inland water, forest and other wooded land area.

Forest expansion, reforestation

This step is not necessary.

1.3.3 Reclassification

Forest area

For 1988 data

Forest = 100% Forest following FRA 2010 & 2015 categories

Brushland = 100% Other wooded land following FRA 2010 and 2015 categories

Other land use= 100% Other land following FRA 2010 categories

Forest expansion, reforestation

This step is not necessary.

1.4 Data

Table 1a













Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
	Forest	6555	7027	7074	6840	8040
	Other wooded land	3221	6703	7629	7333	7036
	Other land	20041	16087	15114	15644	14741
	... of which with tree cover	N/A	N/A	N/A	N/A	N/A
	Inland water bodies	183	183	183	183	183
	TOTAL	30000.00	30000.00	30000.00	30000.00	30000.00

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	47.19	47.19	46.95	46.95	N/A	N/A	N/A	N/A
	... of which human induced	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Reforestation	104.18	33.85	17.4	97.12	N/A	N/A	N/A	N/A
	... of which artificial	104.18	33.85	17.4	97.12	N/A	N/A	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Forest	Tier 3	Tier 2
Other wooded land	Tier 3	Tier 2
Forest expansion	Tier 1	Tier 1
Deforestation	Tier 2	Tier 2
Reforestation	Tier 2	Tier 2

Tier criteria

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

1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends
Forest	The 1988 national definition of "forest" varies with the FRA 2000 definition in terms of minimum area limit. The 1988 definition has a minimum area of 1.0 hectare.	The decreasing trend from 2003 to 2010 is attributed to the 2003 forest cover data which is said to be a bit over estimated since this has no ground validation component. But it is expected to increase because of the massive reforestation program being undertaken through the National Greening Program (NGP) from 2011 to 2016.
Other wooded land	The 1988 national definition of "brushland" is consistent with the FRA 2000 definition of "Other wooded land".	The decreasing trend from 2003 to 2010 is attributed to the conversion of OWL to other land use specifically to agricultural land (other land).

Other land	The 1988 national definition of "Other land use" is consistent with the FRA 2000 definition of "Other Land".	The increasing trend from 2003 to 2010 is attributed to the conversion of other wooded land into agricultural land, built up area. However, a decreasing trend is expected from 2011 to 2015 due to massive planting in this area particularly grasslands
Other land with tree cover	No data is available on other land with tree cover.	N/A
Inland water bodies	The 1988 FRI has no data on "inland water" whereas the 2003 and 2010 NFA (NAMRIA data) exceeds the FAOSTAT data. In both inventories, the area of "Other Land" was adjusted to make the area of "inland water bodies" consistent with FAOSTAT figures.	The area of inland water remains the same from 1988 to 2015.
Forest expansion	It is not possible to report on afforestation data separately. No data available	N/A
Deforestation	The land cover data of the 1988, 2003 and 2010 data were used in estimating the area of deforestation for years 1990, 2000, 2005 and 2010	N/A
Reforestation	Data was based on the reported area planted by both government and non-government sectors. Part of these forest establishments consists in afforestation activities.	The increasing trend particularly in year 2011 onwards is attributed to the results of the National Greening Program of the government with an aim of rehabilitating 1.5.Million hectares of degraded forestland until 2016

Other general comments to the table

1. The data on planted forest is weak. The 1988 inventory has no data on planted forest. The 2003 NAMRIA data may also be of low quality because it is difficult to identify and segregate planted forest from the natural forest in the satellite imagery. Further, the 2010 forest plantations depending on the age and height may have been classified under Closed /Open Forest or other categories. The data on plantation forest using the 2010 land cover mapping are based from the validated sampling points and certified by technical personnel from DENR field offices. 2. The FRA 2015 figures differ from the FRA 2010 figures because FRA 2015 did not include the area of forest in the calibration and adjustment. #Other land with tree cover# has no available data. During the implementation of the FAO-supported NFA Project, #Other land with tree cover# is not among the national land use classes. 3. The increase in forest cover of 1.2 M ha between 2010 to 2015 came from the accomplishment of the National Greening Program for Years 2011-13 (i.e. 600,000 ha) and the NGP target for Years 2014 and 2015 (i.e. 600,000 ha). The Philippines is very confident that the 600,000 hectares target by 2015 can be achieved 4. The Philippines has no data on afforestation/forest expansion

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	FMB. Philippine Forestry Statistics. Forest Management Bureau, Department of Environment and Natural Resources. Philippines.	Forest characteristics	1990, 2000, 2010	Provides information on forest cover by forest type in a given year.

2	FMB. 2006. Philippine Official Reference for Forest-Related Terms and Definitions. Forest Management Bureau, Department of Environment and Natural Resources. Philippines.	Forest characteristics	2006	It is a compendium of harmonized forest-related terms and definitions. It is the final output of the ITTO-funded project entitled “Harmonization of Forest-Related Terms and definitions”.
3	FAO. 2007. World Bamboo Resources. A thematic study prepared in the framework of the Global Forest Resources Assessment 2005. FAO, Rome.	Forest characteristics	2007	A thematic study on bamboo prepared in the framework of the Global Forest Resource Assessment 2005.
4	Land cover mapping, NAMRIA, FMB, DENR	Forest characteristics	2003, 2010	Provides information on forest cover by forest type

2.2.2 Classification and definitions

National class	Definition
Natural regeneration	The establishment of a plant or a plant age class from natural seeding, suckering or layering
Introduced species	Species that have been transported by human activity, intentional or accidental, into a region where it does not naturally occur. Also called alien, exotic, non-indigenous, or non-native species.
Old-growth forest	A primary natural forest, sometimes referred to as virgin forest, never been modified of which the composition, structure and function has not been altered. Areas that are identified initial components of the National Protected Areas System of 1992.
Planted forest	Trees planted on bare or open land which used to be covered with forest growth.
Residual forest	The status or condition of a forest subsequent to commercial logging and which there is more or less sufficient or adequate volume of residuals of the desired species of trees for future harvest.
Mangrove Forest	Forested wetland growing along tidal mudflats and along shallow water coastal areas extending inland along rivers, streams and their tributaries where the water is generally brackish and composed mainly of Rhizophora, Bruguiera, Ceripos, Avicenia, and A egicera spp.

2.2.3 Original data

1990 Philippine Forestry Statistics	
Land Use/Forest Type	Area (1000 ha)

Dipterocarp Forest	
Old-growth	861
Residual	3 288
Total	4 149

2.3 Analysis and processing of national data

2.3.1 Adjustment

This step is not necessary

2.3.2 Estimation and forecasting





<p>The area of “Dipterocarp forest, old growth” which is considered synonymous to “Primary forest” is assumed to be the same from 1990 onwards because of the 1990 DENR regulation which bans the conduct of logging operations in old-growth forest. To maintain area consistency with Question 1, it has been assumed that the area of “Other naturally regenerated forest” is the area that remains after deducting the area of “Primary forest” and “Planted forest”.</p>

2.3.3 Reclassification

This step is not necessary.

2.4 Data

Table 2a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Primary forest	861	861	861	861	861
	Other naturally regenerated forest	5393	5843	6166	5934	5934
	... of which of introduced species	N/A	N/A	N/A	N/A	N/A
	... of which naturalized	N/A	N/A	N/A	N/A	N/A



	Planted forest	301	323	47	45	1245
	... of which of introduced species	297	322	N/A	N/A	N/A
TOTAL		6555.00	7027.00	7074.00	6840.00	8040.00

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)				
	1990	2000	2005	2010	2015
Mangroves (forest and OWL)	154	227	265	311	356
... of which planted	N/A	N/A	N/A	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Primary forest	Tier 1	Tier 1
Other naturally regenerated forest	Tier 2	Tier 2
Planted forest	Tier 2	Tier 2
Mangroves	Tier 2	Tier 2

Tier Criteria

Category	Tier for status	Tier for reported trend
Primary forest/Other naturally regenerated forest/Planted forest	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 Tier 2 : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years) 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

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	Primary forest is synonymous to "Dipterocarp Forest, Old-growth" but not to "Closed forest".	It is assumed that the area of "Dipterocarp Forest, Old-growth" did not change from 1990 onwards because of the 1990 DENR regulation which provides for the shift in logging operations from the old-growth forest to residual forest.
Other naturally regenerating forest	It is synonymous to "residual forest".	The decreasing trend is attributed to conversion to other wooded land and/or other land
Planted forest	Coniferous and mangrove plantations are perceived to be composed of native tree species whereas broadleaved plantations are assumed to consist mostly of introduced tree species.	The decreasing trend is attributed to the limitation of satellite in determining/ detecting areas of plantation forest. Planted forests depending on age and height may have been classified under Closed/Open Forest or other categories. However, the increasing trend from year 2011 to 2015 is expected due to the massive tree planting activities thru the National Greening Program (NGP)
Mangroves	The 2003 NAMRIA Data on mangrove (both natural and planted) was adopted for the reporting years 1990 and 2000. While the 2010 NAMRIA was used for the 2005, 2010 and 2015 reporting	The increasing trend is attributed to the implementation of government regulations banning the harvesting of mangrove as well as the conversion of mangrove forest into fishpond or prawn farms.

Other general comments to the table

The national data on planted forest is weak. The 1988 FRI data has no information on established plantations. Likewise, the 2003 NAMRIA data on planted forest may not be highly reliable as it is difficult to identify and segregate planted forest from natural forest in the satellite imagery. The 2010 data on forest plantation depending on age and height have been classified under closed/open forests or other categories. Forest plantations with values are based from validated sampling points and certified by field personnel, thus resulted in the decreasing data in planted forest in 2005 and 2010. On the otherhand, the very large increase in planted forest by 2015 is due to the massive reforestation/re-greening efforts of the Philippine government thru the National Greening Program. For the first 3 years (2011-2013) of NGP implementation, it surpasses its target of 600,000 hectares, thus the Philippine is very confident that the additional 600,000 hectares of denuded forestlands can be reforested/rehabilitated in years 2014 and 2015. Therefore, a total of 1,200 hectares of reforested/rehabilitated denuded forestlands are expected to add up from the 2010 forest cover data. Areas of mangrove forests are interpolated/extrapolated using the 1988, 2003 and 2010 data.

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	FMB. 1988. Natural Forest Resources of the Philippines. Philippine –German Forest Resources Inventory Project. Forest Management Bureau. Philippines.	Growing stock	1988	Provides information on the total bole volume of trees with DBH 15 cm and larger in both Dipterocarp and Pine forests. It has no data on the bole volume per hectare of trees in mossy forest, mangrove forest and submarginal forest.

2	NFA 2005. National Forest Resource Assessment – Philippines. Working Paper 96. FAO Rome.	Growing stock Biomass stock Carbon stock	2003	Provides information on growing stock above stump of trees with DBH # 10 cm in all forest types. Provides information on biomass stocks following the allometric equation developed by Sandra Brown provides information on carbon stock calculated based on default values.
3	IPCC. 2003. IPCC Good Practice Guidance for Land-Use, Land-Use Change and Forestry. Kanagawa, Japan	Biomass stock Carbon stock	2003	Provides supplementary methods and good practice guidance for estimating, measuring, monitoring and reporting on carbon stock changes and greenhouse gas emissions.
4	FMB. 2006. Philippine Official Reference for Forest-Related Terms and Definitions. Forest Management Bureau, Department of Environment and Natural Resources. Philippines.	Biomass stock	2006	It is a compendium of harmonized forest-related terms and definitions. It is the final output of the ITTO-funded project entitled “Harmonization of Forest-Related Terms and definitions”.
5	IPCC. 2006. IPCC Guidelines for National Greenhouse Gas Inventories	Carbon stock	2006	Provides guidance for preparing annual greenhouse gas inventories in the Agriculture, Forestry and Other Land Use (AFOLU) sector.
6	FAO Pre-filled data	Wood removals	2011	Provides values on total wood removals
7	DENR-Ecosystem Research and Development Bureau "Determination of growth, Structure and Composition of third growth Dipterocarp forest in areas under TLA and IFMA	Mean Annual Increment (MAI) for Dipterocarp and Non Dipterocarp	2005-2011, 2006-2011	The study areas are within the Integrated Forest Management Agreement (IFMA) of Surigao Development Corp in Surigao del Sur (2006-2011), and Industries Devt Corp in Casigutan Aurora (2006-2011)

3.2.2 Classification and definitions

National class	Definition
Biomass	The amount of living matter expressed in terms of weight per unit area or unit volume of water. It is the total mass of life in an ecosystem t any given time. It is an indicator of the productivity of the ecosystem.
Carbon stock	No national definitions and classifications relevant to this table are available.

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

3.2.3 Original data

Growing stock

A. Growing stock

A.1 1988 FRI (RP-GTZ FRI)

Forest Type	Area (1000 ha)	Bole Volume (1000 cu m)	Vol/ha
Dipterocarp Forest	4 401	719 144	163.4
Pine Forest	239	24 929	104.4
Submarginal Forest	544	no data	no data
Mossy Forest	1 137	no data	no data
Mangroves	139	no data	no data
Total	6 461	744 073	160.4

A.2 2003 NFA (FAO-supported NFA Project. Details may not add up to totals

due to rounding)

Natural Forest	Area (1000 ha)	Gross Volume (1000 cu m)	Vol/ha
Broad-leaved Forest	6 029	1 175 643	195.0
Coniferous Forest	211	27 919	132.1
Mixed Forest	83	1 277	70.5
Bamboo/Boho Formation	172	5 363	31.2
Mangrove Forest	41	5 121	126.1

Subtotal (Natural)	6 535	1 215 322	186.0
Planted Forest			
Broad-leaved Forest	617	31 308	50.8
Coniferous Forest	11	1 228	117.0
Subtotal (Plantation)	627	32 537	51.9
Total	7 163	1 247 859	174.2

B. 10 most common tree species

B.1 1988 FRI (RP-GTZ FRI, bole volume of trees with DBH #15 cm in productive forests. Details may not add up to totals due to rounding)

Scientific name	Local name	Volume (million cu m)
Shorea polysperma	Tanguile	95.4
Shorea squamata	Mayapis	83.4
Shorea negrosensis	Red lauan	53.1
Shorea contorta	White lauan	50.8
Dipterocarpus grandiflorus	Apitong	42.2
Parashorea plicata	Bagtikan	40.4
Pinus kesiya	Benguet Pine	24.7
Shorea almon	Almon	24.3
Lithocarpus lianosii	Ulayan	23.8
Palaquium species	Nato	19.1
Remainder of species		330.7
Total		744.1

B.2 2003 NFA (FAO-supported NFA Project, gross volume of all trees with DBH #10cm in forest. Details may not add up to totals due to rounding)

Scientific name	Local name	Volume (million cu m)
<i>Shorea polysperma</i>	Tanguile	125.2
<i>Shorea contorta</i>	White lauan	128.1
<i>Shorea negrosensis</i>	Red lauan	105.7
<i>Shorea squamata</i>	Mayapis	95.3
<i>Dipterocarpus grandiflorus</i>	Apitong	70.0
<i>Parashorea plicata</i>	Bagtikan	48.6
<i>Shora astylosa</i>	Yakal	32.3
<i>Shorea almon</i>	Almon	23.8
<i>Lithocarpus Lianosii</i>	Ulayan	22.1
<i>Gmelina arborea</i>	Yemane	10.1
Remainder of species		586.7
Total		1 247.9

B.3 2003 NFA Data (Gross volume based on total height and Commercial volume based on bole height of all trees in natural forest, except mangrove species, with DBH # 10 cm based)

Climatic Region	Gross Volume (cu m)	Comm. Volume (cu m)	VEF (B/C)
A	9 853.8	6450.2	1.528
B	1 711.2	845.4	2.024
C	3 841.8	3 179.0	1.209
D	2 735.4	1 628.5	1.680
E	2 367.6	1 651.4	1.434

F	1 050.8	648.2	1.621
Total	21 560.6	14 402.7	1.497

Biomass stock

This is shown in item 3.2.3.

Carbon stock

This is shown in item 3.2.3.

3.3 Analysis and processing of national data**3.3.1 Adjustment****Growing and biomass stock**

This step is not necessary.

Carbon stock

In estimating the Carbon in above-ground biomass (AGB), below-ground biomass (BGB) and dead wood biomass (DWB), the default Carbon Fraction of 0.47 was applied. In the case of carbon content in litter, the default value of 2.1 was applied; while the default value of 65 for soil organic carbon with HAC soils was used in the estimation of soil carbon.

3.3.2 Estimation and forecasting**Growing stock**

The 1988 FRI data on growing stock was based on the bole height (commercial volume) of all natural-grown trees with DBH # 15 cm in dipterocarp and pine forest. No volume data is indicated on other forest types. On the other hand, the 2003 NFA data was based on the total height (gross volume) of all trees with DBH # 10 cm in all forest types. Further, considering that the 1988 FRI lacks data on growing stock for the mangrove forest, mossy forest and submarginal forest, the volume per hectare in the 2003 NFA was substituted. It was assumed that the gross volume per hectare in mossy forest is the same as in mixed forest, submarginal forest is the same as in bamboo/boho formation and mangrove forest to mangrove forest. The result on volume per hectare of the 2003 National Forest Assessment (NFA)-FAO supported project was used.

In the estimation and forecast of growing stock in “Other wooded land”, the growing stock per hectare of 21.99 cu m, based on the 2003 NFA data, was constantly applied in the reporting years in view of the lack of growing stock data in brushlands in the 1988 FRI.

1988 FRI (RP-GTZ FRI. Details may not add up to totals due to rounding)

Forest Type	Area (1000 ha)	Original Data		Adjusted Data	
		Vol (1000 cu)	Vol/ha	Vol. (1000 cu)	Vol/ha
Dipterocarp Forest	4,401	719,144	163.4	1,076,559	244.6
Pine Forest	239	24,929	104.4	37,319	156.3
Submarginal Forest	544	n.a.	n.a.	16,979	31.2
Mossy Forest	1,137	n.a.	n.a.	80,187	70.5
Mangroves	139	n.a.	n.a.	17,541	126.1
Total	6,461	744,073	160.4	1,228,584	190.2

In the estimation and forecast of growing stock in forest, the adjusted 1988 FRI data and the 2003 NFA data were used.

	Adjusted 1988 FRI Data	2003 NFA Data	Difference	Annual Change
Volume (cu.m.)/ha	190.17	174.22	(15.95)	(1.1)
Difference (1988-2003)			15	

Year	volume (cu.m.)/ha	Area of Forest (1000 ha)	Gross Vol. (1000 cu m)
1988	190.2	6,461	1,228,584
1990	188.0	6,555	1,232,593
2000	177.4	7,027	1,246,618
2003	174.2	7,168	1,248,869

2005	172.1	7,074	1,217,467
2010	166.8	6,840	1,140,707
2015	161.5	8,040	1,298,103

B. Growing stock of trees with dbh #10 cm

Variable	1990	2000	2005	2010	2015
Growing stock (cu m/ha)	188.0	177.4	172.1	166.8	161.5
Area (1000 ha)	6,555	7,027	7,074	6,840	8,040
Growing stock (million cu m)	1,233	1,247	1,217	1,141	1,298

In the estimation of the growing stock for the 10 most frequent species, their proportion to the growing stock in the adjusted 1988 FRI data and 2003 NFA data were extrapolated to estimate the growing stock in 1990, 2005, 2010 and 2015. The order of species follows their ranking (by volume) in 2005.

Growing stock based on gross volume (in million cu m) of the ten most frequent species. (Details may not add up to totals due to rounding)

Scientific Name	Common Name	1990	2000	2005	2010	2015
<i>Shorea contorta</i>	White Lauan	82.7	116.1	132.8	149.5	166.2
<i>Shorea polysperma</i>	Tanguile	140.2	127.2	120.6	114.1	107.5
<i>Shorea negrosensis</i>	Red lauan	82.8	99.1	107.3	115.5	123.7
<i>Shorea squamata</i>	Mayapis	120.6	100.0	89.7	79.4	69.1
<i>Dipterocarpus grandiflorus</i>	Apitong	64.0	67.7	69.6	71.5	73.4
<i>Parashorea plicata</i>	Bagtikan	58.7	50.4	46.2	42.0	37.8
<i>Shorea astylosa</i>	Yakal	14.7	27.9	34.5	41.0	47.6
<i>Shorea almon</i>	Almon	34.7	26.0	21.7	17.3	13.0

<i>Lithocarpus lianosii</i>	Ulayan	33.8	24.5	19.9	15.2	10.5
<i>Gmelina arborea</i>	Yemane	1.3	8.0	11.3	14.6	17.9
Subtotal		633.6	646.9	653.6	660.2	666.9
Other Species		598.9	599.7	563.9	480.5	631.2
TOTAL		1,232.6	1,246.6	1,217.5	1,140.7	1,298.1

Biomass stock

The following estimates on “Above-ground biomass” and “Below-ground biomass” in “Forest” and “Other wooded land” were derived following the formula prescribed in the *Guidelines for Country Reporting to FRA 2015*.

A. Biomass in Forest

Forest Type	Variable	1990	2000	2005	2010	2015
Broadleaved	Growing stock (M cu m)	1,207.3	1,220.0	1,190.8	1,114.7	1,270.4
Coniferous		25.3	26.6	26.7	26.0	27.7
Sub-total		1,232.6	1,246.6	1,217.5	1,140.7	1,298.1
Broadleaved	Growing stock /ha	191.0	179.0	173.2	167.4	161.7
Coniferous		108.0	126.0	134.9	143.9	152.9
	Biomass Conversion Expansion Factors					
Broadleaved	BCEF	0.90	0.90	0.90	0.90	0.90
Coniferous		0.60	0.60	0.60	0.60	0.60
	Above-Ground Biomass					
Broadleaved	AGB (M tonnes)	1,086.6	1,098.0	1,071.7	1,003.2	1,143.4
Coniferous		15.2	16.0	16.0	15.6	16.6
Sub-total		1,101.7	1,114.0	1,087.7	1,018.8	1,160.0
	Root-shoot Ratio					

Broadleaved	Root-shoot ratio	0.24	0.24	0.24	0.24	0.24
Coniferous		0.24	0.24	0.24	0.24	0.24
	Below-Ground Biomass					
Broadleaved	BGB (M tonnes)	260.8	263.5	257.2	240.8	274.4
Coniferous		3.6	3.8	3.8	3.8	4.0
Sub-total (BGB) M tonnes		264.4	267.4	261.1	244.5	278.4
Total (AGB + BGB) M tonnes		1,366.2	1,381.3	1,348.8	1,263.3	1,438.4
Dead to live ratio		0.11	0.11	0.11	0.11	0.11
Dead wood Biomass(M tonnes)		150.3	151.9	148.4	139.0	158.2
Total (AGB + BGB + DWB) M tonnes		1,516.4	1,533.3	1,497.1	1,402.3	1,596.6

B. Biomass in Other wooded land

Variable	1990	2000	2005	2010	2015
Growing stock (M cu m)	70.8	147.4	167.8	161.2	154.73
Growing stock / ha	22.0	22.0	22.0	22.0	22.0
BCEF	1.40	1.40	1.40	1.40	1.40
AGB (M tonnes)	99.2	206.4	234.9	225.7	216.6
Root-shoot ratio	0.20	0.20	0.20	0.20	0.20
BGB (M tonnes)	19.8	41.3	47.0	45.1	43.3
Sub-total (AGB +BGB)	119.0	247.6	281.8	270.9	259.9
Dead to live ratio	0.11	0.11	0.11	0.11	0.11
DW (M tonnes)	13.1	27.2	31.0	29.8	28.6
Total	132.1	274.9	312.8	300.7	288.5

3.3.3 Reclassification

Growing and biomass stock

This step is not necessary.

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	1232.6	1246.6	1217.5	1140.7	1298.1	70.8	147.4	167.8	161.2	154.7
	... of which coniferous	25.3	26.6	26.7	26	27.7	N/A	N/A	N/A	N/A	N/A
	... of which broadleaved	1207.3	1220	1190.8	1114.7	1270.4	N/A	N/A	N/A	N/A	N/A

Table 3b

Category/Species name			Growing stock in forest (million cubic meters)			
Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	Shorea contorta	White Lauan	82.7	116.1	132.8	149.5
2 nd	Shorea polysperma	Tanguile	140.2	127.2	120.6	114.1
3 rd	Shorea negrosensis	Red lauan	82.8	99.1	107.3	115.5
4 th	Shorea squamata	Mayapis	120.6	100	89.7	79.4
5 th	Dipterocarpus grandiflorus	Apitong	64	67.7	69.6	71.5
6 th	Parashorea plicata	Bagtikan	58.7	50.4	46.2	42
7 th	Shorea astylosa	Yakal	14.7	27.9	34.5	41
8 th	Shorea almon	Almon	34.7	26	21.7	17.3

9 th	Lithocarpus lianosii	Ulayan	33.8	24.5	19.9	15.2
10 th	Gmelina arborea	Yemane	1.3	8	11.3	14.6
Remaining			599.2	599.7	563.9	480.5
TOTAL			1232.70	1246.60	1217.50	1140.60

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)	N/A	The total height of the tree was used in the calculation of growing stock (gross volume)
Minimum diameter (cm) of branches included in growing stock (W)	N/A	Minimum diameter of branches is not known
Volume refers to above ground (AG) or above stump (AS)	above stump (AS)	N/A

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

Table 3c




Category		Net annual increment (m ³ per hectare and year)				
		Forest				
		1990	2000	2005	2010	2015
 Net annual increment		N/A	0.2	0.4	0.35	0.6
 ... of which coniferous		N/A	N/A	N/A	N/A	N/A
 ... of which broadleaved		N/A	N/A	N/A	N/A	N/A

Table 3d

Category	Biomass (million metric tonnes oven-dry weight)									
	Forest					Other wooded land				
	1990	2000	2005	2010	2015	1990	2000	2005	2010	2015











	Above ground biomass	1101.7	1114	1087.7	1018.8	1160	99.2	206.4	234.9	225.7	216.6
	Below ground biomass	264.4	267.4	261.1	244.5	278.4	19.8	41.3	47	45.1	43.3
	Dead wood	150.3	151.9	148.4	139	158.2	13.1	27.2	31	29.8	28.6
TOTAL		1516.40	1533.30	1497.20	1402.30	1596.60	132.10	274.90	312.90	300.60	288.50

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	517.8	523.6	511.2	478.8	545.2	46.6	97	110.4	106.1	101.8
	Carbon in below ground biomass	124.3	125.7	122.7	114.9	130.8	9.3	19.4	22.1	21.2	20.4
	<i>Subtotal Living biomass</i>	642.1	649.2	633.9	593.8	676	55.9	116.4	132.5	127.3	122.2
	Carbon in dead wood	70.6	71.4	69.7	65.3	74.4	6.2	12.8	14.6	14	13.4
	Carbon in litter	13.8	14.8	14.9	14.4	16.9	6.8	14.1	16	15.4	14.8
	<i>Subtotal Dead wood and litter</i>	84.4	86.2	84.6	79.7	91.2	12.9	26.9	30.6	29.4	28.2
	Soil carbon	426.1	456.7	459.8	444.6	522.6	209.4	435.7	495.9	476.6	457.4
TOTAL		1152.60	1192.20	1178.30	1118.00	1289.90	278.30	579.00	659.00	633.30	607.80

Tiers

Variable/category	Tier for status	Tier for trend
Total growing stock	Tier 3	Tier 2
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 2	Tier 1
Soil carbon	Tier 1	Tier 1

Tier criteria

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

3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
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Total growing stock	The total growing stock for each reporting year was estimated by interpolating and extrapolating the data on growing stock per hectare in the 1988 FRI and 2003 NFA. The estimated growing stock/ ha per year was then multiplied to the estimated "Forest" area for the same year.	The decreasing trend is directly proportional to the decrease in forest area. However from 2011 to 2015, the total growing stock increases as the total forest area of the country increases
Growing stock of broadleaved coniferous	The growing stock in "Coniferous Forest" was first estimated considering that data on growing stock per hectare is available in both 1988 FRI and 2003 NFA. The estimated growing stock/ha in "Coniferous Forest" was then deducted from the estimated "Total growing stock" to come up with the growing stock in "Broadleaved Forest".	The growing stock is increasing from 1988-2003 due to the expanding forest area; but from 2004 to 2010, the trend is decreasing due to decreasing forest area. The growing stock per hectare is decreasing due to the continued utilization of large diameter trees in production forest. Further, from 2011 to 2015, the trend increase again due to massive tree planting activities thru the National Greening Program
Growing stock composition	Consist of all tree species including lesser-used species.	N/A
Net annual increment	Mean Annual Increment generated from the studies of DENR-ERDB were used in the computation of Net Annual Increment (Table 3c). For 2015 value of total wood removals (as one of the variables in the computation of NAI), the average wood removal of Years 1990, 2000, 2005 and 2010 were used.	N/A
Above-ground biomass	In estimating AGB, the lower ranges for the BCEFs (0.90 for broadleaved forest and 0.60 for coniferous forest) were used considering that the growing stock includes tops and branches. The AGB for "Broadleaved Forest" and "Coniferous Forest" were calculated separately then summed up to come up with the total AGB on a yearly basis. In the case of OWL, it was assumed that all the trees are broadleaved species; therefore, the applicable BCEF value for broadleaved forest was applied.	The increasing trend from 1988 to 2003 is attributed to the expanding "Forest" and "Other wooded land" areas. However, the decreasing trend from 2004 onwards is attributed to the decrease in area of forest and other wooded land
Below-ground biomass	In estimating BGB in Forest, the default value of 0.24 Root-Shoot ratio was used. The BGB for "Broadleaved Forest" and "Coniferous Forest" were calculated separately then summed up to come up with the total BGB on a yearly basis. In the case of OWL, the "root-shoot ratio" of 0.20 was applied as it was assumed that all the trees are broadleaved species.	The increasing trend from 1988 to 2003 is attributed to the expanding "Forest" and "Other wooded land" areas. However, the decreasing trend from 2004 onwards is attributed to the decrease in area of forest and other wooded land.
Dead wood	The default value of 0.11 ratio of dead to live biomass (total of above and below ground biomass) was used in the estimation.	The decreasing trend is directly proportional to the decrease in live biomass as well as to forest disturbances that causes inordinate tree mortality.

Carbon in above-ground biomass	The carbon fraction of 0.45 was multiplied to the AGB to calculate the carbon in AGB	The increasing trend from 1988 to 2003 is attributed to the expanding "Forest" and "Other wooded land" areas. However, the decreasing trend from 2004 to 2010 is attributed to the decrease in area of forest and other wooded land. The trend again increases as the amount of growing stocks increases from 2011 to 2015
Carbon in below-ground biomass	The carbon fraction of 0.45 was multiplied to the BGB to calculate the carbon in BGB	The increasing trend from 1988 to 2003 is attributed to the expanding "Forest" and "Other wooded land" areas. However, the decreasing trend from 2004 to 2010 is attributed to the decrease in area of forest and other wooded land. The trend again increases as the amount of growing stocks increases from 2011 to 2015
Carbon in dead wood	The carbon fraction of 0.45 was multiplied to the DWB to calculate the carbon in DWB	The increasing and decreasing trends are directly proportional to the increase in above-ground and below-ground biomass.
Carbon in litter	The carbon fraction of 2.1 was multiplied to the area of forest to calculate the carbon in litter	The increasing and decreasing trends are directly proportional to the increase/decrease in forest area.
Soil carbon	The carbon fraction of 65 was multiplied to the area of forest to calculate the carbon in soil	The increasing and decreasing trends are directly proportional to the increase/decrease in forest area.

Other general comments to the table

Figures are a bit different from the FRA 2010 report primarily due to difference in area of forests and other wooded land. The 2010 FRA report used the calibrated and adjusted 1988 and 2003 land cover data, while this reporting period (2015) uses the calibrated and adjusted 2003 and 2010 Land cover data of NAMRIA. However, in the calibration, the area of forest was not included. This is to maintain similar data on the extent of forest cover that is being submitted by the Philippines in the national and international reporting commitments.

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	Thang, H. C. 1991. Asean Forest Resource Database-Country Report – The Philippines. Asean Institute of Forest Management. Kuala Lumpur.	Forest Designation & management	1988	N/A
2	NFA 2005. National Forest Resource Assessment – Philippines. Working paper 96. FAO Rome.	Forest Designation & management	2005	The report includes information on forest designation & protection status and forest management system.
3	Global Forest Resources Assessment 2010 Country Report, FRA 2010/164, Rome 2010	Forest Designation & management	2010	The report includes information on forest designation & protection status and forest management system.

4	Philippine Forestry Statistics, DENR-FMB	Name and commercial value of NWFP removals	2011	The report includes data on round wood production from 1990 to 2011
5	FAO Prefilled Data (FAO STAT)	Wood Removals	2011	Include total wood removals and removals for fuelwood

4.2.2 Classification and definitions

National class	Definition
Managed Forest	A forest under a deliberate system of protection, rehabilitation and development which may include utilization of resources, to ensure the sustainable production of desired products and services and the conservation of soil, water, wildlife and other resources therein.
Production Forest	Forest lands that can be made available for timber and agro-forestry production,
N/A	N/A
N/A	N/A

4.2.3 Original data

The 1988 figures are from the study by Thang (1991); the conservation areas include national parks and national reserves. Question 4,5,6, 12 of the CFRQ and 14 of the FRA use the percentages rather than actual number.

A. 1988 (Thang study)

Forest Designation	Forest Area (1 000 ha)	Percentage
Production	4 393	68
Conservation	1 098	18
Protection	517	8
Unknown	452	7
Total	6 461	100

B. 2003 NFA (FAO-supported NFA Project)

ForestDesignation	ForestArea (1000 ha)	Percentage
Production	5 463	76
Natural Reserve	538	7
National Park	259	4
Managed Protected Area	904	13
Total	7 163	100

(Details may not add up to totals due to rounding)

4.3 Analysis and processing of national data

4.3.1 Adjustment

1.1.1 Adjustment

1. 2003 NFA

Forest Designation	Original 2003 NFA Data (1000 ha)	Calibrated 2003 NAMRIA Data (1000 ha)	Percent
Production	5,462.5	5,467.0	76.3%
Natural Reserve (Protection)	537.6	538.0	7.5%
National Park (Conservation)	258.7	258.9	3.6%
Managed Protected Area (Conservation)	903.8	904.5	12.6%
Total	7,162.6	7,168.4	100.0%

(FAO-supported NFA Project. Details may not add up to totals due to rounding)

4.3.2 Estimation and forecasting

The percentage distribution in various functional classes in 1988 and in 2003 was used to estimate the percentage distribution in 1990, 2000, 2005, 2010 and 2015 through linear interpolation. In 1988, the area under “unknown” category has been taken as the remainder area to maintain the area consistency with Question1.

FRA 2015 Category	Percentage			
	1988 FRI Data	2003 NFA Data	Difference	Annual Rate of Change
Production	68	76	8	0.53
Conservation	17	16	-1	-0.07
Protection	8	8	0	0.00
Unknown	7	0	-7	-0.47
Total	100	100		
(Difference 1988-2003)			15	

FRA 2015 Category	Percent (%) and Area (1000 hectares)									
	1990		2000		2005		2010		2015	
Forest	%	Area	%	Area	%	Area	%	Area	%	Area
Production	69.1	4,527	74.4	5,228	76.1	5,386	76.5	5,230	76.8	6,175
Conservation	16.9	1,106	16.2	1,138	15.9	1,122	15.5	1,062	15.2	1,222
Protection	8.0	524	8.0	562	8.0	566	8.0	547	8.0	643
Unknown	6.1	398	1.4	98	0.0	0	0.0	0	0.0	0
Total	100	6,555	100	7,027	100	7,074	100	6,840	100	8,040

(Details may not add up to totals due to rounding)

4.3.3 Reclassification

Production forest= 100% production following FRA 2015 categories

National park and Managed protected areas= 100% Conservation

Natural reserve= 100% Protection

4.4 Data

Table 4a



Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	4527	5228	5386	5230	6175
	Multiple use forest	0	0	0	0	0

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
1 st	Salago fiber	Salago	1517869	5
2 nd	Bamboo poles	Kawayang Tinik, Bolo	96578	5
3 rd	Nipa shingles	Nipa	57447	5
4 th	Unsplit rattan	Limuran, Palasan	48481	5
5 th	Almaciga resin	Almasiga	5990	7
6 th	Anahaw leaves	Anahaw	1177	5
7 th	Buri midrib	Buri	261950	5
8 th	Split rattan	Limuran, Palasan	138000	5
9 th	Hingiw	Hingiw	16280	5
10 th	Diliman & other vines	Diliman	N/A	5
TOTAL			2143772.00	

2010	
Name of local currency	Philippine Peso

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	20104.94	15175.94
1991	18859.08	15063.08

1992	18164.09	14949.09
1993	17686.74	14791.74
1994	17547.96	14582.96
1995	17173.28	14359.28
1996	16999.07	14136.07
1997	16660.31	13961.31
1998	16654.14	13832.14
1999	16689.8	13719.8
2000	16693.71	13614.71
2001	16263.7	13467.7
2002	16017.08	13328.08
2003	15987.5	13195.5
2004	16129.59	13069.59
2005	16079.03	12950.03
2006	16127.03	12821.03
2007	15868	12698
2008	16392.7	12580.7
2009	16266.72	12468.72
2010	15914.94	12361.94
2011	16117.44	12250.44

Tiers

Category	Tier for status	Tier for reported trend
Production forest	Tier 2	Tier 2
Multiple use forest	Tier 1	Tier 1

Tier Criteria

Category	Tier for status	Tier for reported trend
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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
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4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	The national definition of production forest is consistent with the FRA definition.	The decreasing trend from year 2005 to 2010 is attributed to the decrease in forest cover. On the other hand, the trend increase from 2011 to 2015 due to the effect of National Greening Program
Multiple use forest	N/A	N/A
Total wood removals	This includes production from sawlogs/ veneer logs, pulpwood, poles and piles, and fuelwood/firewood	N/A
Commercial value of NWFP	The retail price used in the computation of commercial value of NWFP were based on the recent data reflected in the Philippine Forestry Statistics 2011	N/A

Other general comments to the table

N/A

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

Documents for this question:

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

5.1 Categories and definitions

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

5.2 National data

5.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Philippine Official Reference for Forest-Related Terms and Definitions, DENR-FMB, ITTO	Protection Landuse	2006	This includes definition/description of protected landuse

2	2003 Land Cover Mapping, DENR-NAMRIA, FMB	Area of protected land use	2003	N/A
3	Thang, H. C. 1991. Asean Forest Resource Database- Country Report – The Philippines. Asean Institute of Forest Management. Kula Lumpur.	Forest Designation and management	1988	N/A
4	NFA 2005. National Forest Resource Assessment – Philippines. Working paper 96. FAO Rome.	Forest Designation and management	2005	The report includes information on forest designation & protection status and forest management system.
5	2010 Land Cover Mapping, DENR-NAMRIA, FMB	Area of forest	2010	N/A

5.2.2 Classification and definitions

National class	Definition
Protection forest	An area wholly or partly covered with woody vegetation managed primarily for its beneficial effects on water, climate, soil, aesthetic values and preservation of genetic diversity
Protected Landuse	All initial components of the National Integrated Protected Areas System (NIPAS) including identified virgin forest (natural primary forest) and mossy forest as well as any contiguous residual forest of good quality that are above 1000 meters above sea level and slope above 50%; all NIPAS areas such as strict nature reserve, natural park and wildlife sanctuary, protected land scape and sea scape, resource reserve, natural biotic area, and other categories established by law, conventions or international agreements of which the Philippines is a signatory; and buffer strips i.e. 20 meters strip of land along the edge of the normal high water line of rivers and streams with channels of at least 5 meters wide
N/A	N/A
N/A	N/A

5.2.3 Original data

see Table 4.2.3

5.3 Analysis and processing of national data

5.3.1 Adjustment

see table 4.3.1

5.3.2 Estimation and forecasting

see table 4.3.2

5.3.3 Reclassification

see table 4.3.3

5.4 Data

Table 5a

Categories		Forest area (1000 hectares)				
		1990	2000	2005	2010	2015
	Protection of soil and water	1630	1700	1688	1610	1865
	... of which production of clean water	N/A	N/A	N/A	N/A	N/A
	... of which coastal stabilization	N/A	N/A	N/A	N/A	N/A
	... of which desertification control	N/A	N/A	N/A	N/A	N/A
	... of which avalanche control	N/A	N/A	N/A	N/A	N/A
	... of which erosion, flood protection or reducing flood risk	N/A	N/A	N/A	N/A	N/A
	... of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A
Other						

N/A

Table 5b

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015
Ecosystem services, cultural or spiritual values	N/A	N/A	N/A	N/A	N/A
...of which public recreation	N/A	N/A	N/A	N/A	N/A
...of which carbon storage or sequestration	N/A	N/A	N/A	N/A	N/A
...of which spiritual or cultural services	N/A	N/A	N/A	N/A	N/A
...of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A

Tiers

Category	Tier for reported trend	Tier for status
Protection of soil and water	Tier 2	Tier 1
Ecosystem services, cultural or spiritual values	Tier 1	Tier 1

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
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5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	The data came from the analysis of the 1991 study of Thang and 2003 NFA FAO Supported Project	N/A
Production of clean water	N/A	N/A
Coastal stabilization	N/A	N/A
Desertification control	N/A	N/A
Avalanche control	N/A	N/A
Erosion, flood protection or reducing flood risk	N/A	N/A
Other protective functions	N/A	N/A
Ecosystem services, cultural or spiritual values	N/A	N/A
Public recreation	N/A	N/A
Carbon storage or sequestration	N/A	N/A
Spiritual or cultural services	N/A	N/A
Other ecosystem services	N/A	N/A

Other general comments to the table

The data supplied to the above table are results of interpolation and extrapolation of the data of the 1991 study (Thung) and the 2002-2004 NFA-FAO supported project. Robust data on area of forest for protection of soil and water/ area of forest within protected areas will be made once the activity on delineation of the protected area boundary limit has been completed by the Protected Area and Wildlife Bureau of the DENR.

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	Thang, H. C. 1991. Asean Forest Resource Database-Country Report – The Philippines. Asean Institute of Forest Management. Kuala Lumpur.	Forest Designation & management	1988	N/A
2	NFA 2005. National Forest Resource Assessment – Philippines. Working paper 96. FAO Rome.	Forest Designation & management	2005	The report includes information on forest designation & protection status and forest management system.
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

6.2.2 Classification and definitions

National class	Definition
Protected areas	Refers to identified portions of land and water set aside by reason of their unique physical and biological significance, managed to enhance biological diversity and protected against destructive human exploitation.
N/A	N/A
N/A	N/A
N/A	N/A

6.2.3 Original data

See 4.2.3.

6.3 Analysis and processing of national data

6.3.1 Adjustment

See 4.3.1.

6.3.2 Estimation and forecasting



See 4.3.2.

6.3.3 Reclassification

See 4.3.3.

6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Conservation of biodiversity	524	562	566	547	643
	Forest area within protected areas	1630	1700	1688	1610	1865

Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	Tier 2	Tier 2
Forest area within protected areas	Tier 2	Tier 2

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	Includes forest in national parks and managed protected areas	Though the trend in terms of percentage is increasing, however the trend for total area of forest for conservation of biodiversity decreases particularly from 2000 to 2010 but again increase in 2015. This is attributed to the decreased/increased in forest cover of the country.
Forest area within protected areas	It covers both the forest area for the protection of soil and water and for the conservation of biodiversity.	Though the trend in terms of percentage is increasing, however the trend for total area of forest for conservation of biodiversity decreases particularly from 2000 to 2010 but again increase in 2015. This is attributed to the decreased/increased in forest cover of the country.

Other general comments to the table

The data derived from the study of Thung, H.C. and the result of the 2003 FAO supported NFA project (as reported in the NFA 2005 National Forest Resource Assessment – Philippines. Working paper 96. FAO Rome) are used in the interpolation and extrapolation of the needed data. The increase in forest cover in 2015 is due to massive reforestation/re-greening effort of the government thru the implementation of the National Greening Program (NGP). One of the target areas of NGP is planting of indigenous species in open areas within protected areas.

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	Checklist of Forest Invasive Species Present in the Philippines, DENR-PAWB	List of woody invasive species	2012	No data on the extent of forest area affected by woody invasive species
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
Invasive Species	Species of flora and fauna which may be accidentally or deliberately introduced to an area that may cause or likely to cause economic, environmental damage, and harm to human health
Invasive Alien Species	Species introduced deliberately or unintentionally outside their natural habitat where they have the ability to establish themselves, invade or compete with native species, and take over the new environment
N/A	N/A
N/A	N/A

7.2.3 Original data

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7.3 Analysis and processing of national data

7.3.1 Adjustment

This step is not necessary

7.3.2 Estimation and forecasting

This step is not necessary

7.3.3 Reclassification

This step is not necessary

7.4 Data

Table 7

Scientific name of woody invasive species	Forest area affected (000 ha)	
	2005	2010
Broussonetia papyrifera	N/A	N/A
Swietenia macrophylla	N/A	N/A
Leucaena leucocephala	N/A	N/A
Acacia mangium	N/A	N/A
Acacia auriculiformis	N/A	N/A
Triplaris cumingiana	N/A	N/A
Spathodea campanulata	N/A	N/A
Aroma confusa	N/A	N/A
Prosopis juliflorae	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 2	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	No available data as to the extent of forest area affected by woody invasive species.	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	Periodic damage report from DENR Field Offices	Area affected by forest fires, and pest and disease	1988 to 2007	Many incidence of fires, and pests and diseases may not have been reported
2	FAO pre-filled data	Area affected by forest fires	2003-2012	Areas affected by fires, or burned areas are generated thru the use of MODIS satellite sensor
3	Report on the extent of damages caused by Typhoon Bopha "Pablo"	Area affected by extreme weather event like typhoon	2012	This report was prepared by the Forest Management Bureau (FMB) and submitted to the Office of the Secretary of the DENR
4	Progress report of activities conducted after typhoon Haiyan	Area affected by extreme weather event like typhoon	2013	This report was prepared and submitted by the Regional Executive Director of DENR Region 8 and submitted to the Office of the Secretary of the DENR

8.2.2 Classification and definitions

National class	Definition
Forest Disturbance	Any relatively discrete event in time that disrupts ecosystem, community, or population structure and changes resources, substrate availability, of the physical environment

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

8.2.3 Original data

Frequency and Area Affected by Fire (1000 ha)								
Year	Forest		OWL		Other Land		Total	
	No. of Fire	Area affected (ha)	No. of Fire	Area affected (ha)	No. of Fire	Area affected (ha)	No. of Fire	Area affected (ha)
2007	44	0.77	14	0.668	29	1.92	87	3.36
2006	17	3.03	1	0.001	3	0.27	21	3.31
2005	66	1.68	12	0.836	6	0.54	84	3.05
2004	31	0.87	21	0.865	8	0.08	60	1.81
2003	94	1.29	8	0.423	5	0.11	107	1.82
Subtotal (2005)	252	7.64	56	2.793	51	2.92	359	13.36
Average (2005)	50.4	1.53	11.2	0.559	10.2	0.58	71.8	2.67
2002	134	4.73	21	1.432	17	1.52	172	7.68
2001	16	0.50	15	0.531	1	0.02	32	1.06
2000	20	1.23	8	0.396	11	0.46	39	2.09
1999	15	0.16	20	2.224	2	0.04	37	2.43
1998	500	26.15	49	2.739	35	10.40	584	39.29
Subtotal (2000)	685	32.77	113	7.322	66	12.46	864	52.55
Average (2000)	137	6.55	22.6	1.464	13.2	2.49	172.8	10.51
1992	39	2.89	0	0.598	0	0.00	39	3.49
1991	10	0.36	0	0.000	0	0.00	10	0.36
1990	23	0.86	0	0.226	3	0.03	26	1.12

1989	14	0.43	0	0.092	0	0.00	14	0.52
1988	9	0.29	0	0.000	1	0.02	10	0.31
Subtotal (1990)	95	4.83	0	0.916	4	0.05	99	5.79
Average (1990)	19	0.97	0	0.183	0.8	0.01	19.8	1.16

Outbreak of Pests and Diseases

Scientific Name of Insect or Disease causing the Outbreak	Tree Species or genera Affected	Year(s) of latest outbreak	Area Affected (ha)	Area Affected (ha)	If cyclic, approx. cycle (years)
Dryocoetiops laevis	Dipterocarpus grandiflorus	1990	20	20	undetermined
Hypsipyla robusta	Swietinia macrophylla	1990	0.5	0.5	undetermined
Ips caligraphus	Pinus kesiya	1988	10	10	
Leaf folders	Rhizophora mucronata, R. apiculata, Avecenia officinalis	2003	50	50	no data
Leaf mines, defoliator	Sonneratia alba		3	3	no data
Lepidoptera	Swietinia macrophylla	1999	24	24	6 years
Lymantriade euproctis spp.	Rhizophora mucronata, R. apiculata	1996	2	2	undetermined
Mealy bugs, leaf blight			0.5	0.5	no data
Ozola minor	Gmelina arborea	1990	45	45	undetermined
Pocilips fallax	Rhizophora mucronata, R. apiculata	1999	2	2	undetermined
Propagule borer	Ceriops tangal		5	5	no data
Termites (bug worm & leaf spot)	Gmelina arborea, Xanthostemon verdugonianus, Eucalyptus deglupta		6	8.5	no data
Tussock moth, leaf mines	Rhizophora spp., R. apiculata		5	8	no data

Uromycladium tepperianum (Gall rust)	Paraserianthis falcataria	2007	392	421	6 years
Xyleutes sp.	Gmelina arborea	1991	0.5	0.5	undetermined

8.3 Analysis and processing of national data

8.3.1 Adjustment

This step is not necessary

8.3.2 Estimation and forecasting



This step is not necessary

8.3.3 Reclassification

This step is not necessary

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	75.4	N/A	33.19	N/A	67.33	N/A	64.18	N/A	78.49	N/A
	... of which forest area burned	8.29	N/A	3.24	N/A	13.8	N/A	16.29	N/A	15.27	N/A
Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#



	Total land area burned	5.83	N/A	33.67	N/A	109	N/A	8.88	N/A	24.71	N/A
	... of which forest area burned	0.79	N/A	4.18	N/A	26.98	N/A	2.42	N/A	4.39	N/A

Table 8b

Outbreak category	Description/name	Year(s) of latest outbreak	Area damaged (000 hectares)
3	Typhoon Bopha ("Pablo")	2012	10.544
3	Typhoon Haiyan ("Yolanda")	2013	9.915
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 2	Tier 2
<ul style="list-style-type: none"> Insects Diseases Severe weather events 	Tier 2	Tier 2

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	The data from 2003-2007 is believed to be underestimated as it lacks report from Regions 4A, 12, 13 & ARMM, thus the use of FAO data generated thru modus sensor instead	The effect of El Nino phenomenon resulted to high incidence of forest fire from 1988 to 2001
Insects	The areas affected by insects are too small to report and none have occurred during the reporting period 2010-2015	N/A
Diseases	The areas affected by diseases are too small to report and none have occurred during the reporting period 2010-2015	N/A
Severe weather events	Damages caused by the two recent typhoons that hit Philippines were reported. The damages caused by Typhoon Haiyan was based on the initial report submitted by the DENR Regional Office dated 4 December 2013, and most of the damages are plantation areas established thru the National Greening Program (NGP). As of this reporting period, no comprehensive report yet as to the total damages in forests caused by super typhoon Haiyan	N/A

Other general comments to the table

The data is weak as there may be incidence of forest fires, and pests and diseases that have not been reported. For data on forest fire, FAO data from 2003 to 2012 are used.

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	4546.17

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	The MODIS sensor detects reduction on forest canopy cover of more than 20%. Therefore, forests with reduced canopy cover below 20% is not considered in the analysis because of the above-mentioned limitation of the MODIS sensor/data

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	Presidential Issuances	Legislations	2011	Issuance of Executive Order Nos. 318, series of 2004, and 23 and 26, series of 2011
2	Department Administrative Orders	Policies and strategies	2000 - 2013	N/A
3	Department Memorandum Orders	Policies and strategies	2000 - 2013	N/A
4	Memorandum Orders	Policies and strategies	2000 - 2013	N/A

10.2.2 Classification and definitions

National class	Definition
Forest policy	A set of orientations and principles of actions adopted by public authorities in harmony with national socio-economic and environmental policies in a given country to guide future decisions in relation to the management, use and conservation of forest and tree resources for the benefit of society.
Forest policy statement	A document that describes the objectives, priorities and means for implementation of the forest policy.

National forest programme (NFP)	A generic expression that refers to a wide range of approaches towards forest policy formulation, planning and implementation at national and sub-national levels. The national forest programme provides a framework and guidance for country-driven forest sector development with participation of all stakeholders and in consistence with policies of other sectors and international policies.
Law (Act or Code) on forest	set of rules enacted by the legislative authority of a country regulating the access, management, conservation and use of forest resources.

10.2.3 Original data

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10.3 Data

Table 10

Category				
	National	Sub-national		
		Regional	Provincial/State	Local
Policies supporting sustainable forest management	yes	yes	yes	yes
... of which, in <u>publicly</u> owned forests	yes	yes	yes	yes
... of which, in <u>privately</u> owned forests	yes	yes	yes	yes
Legislation and regulations supporting sustainable forest management	yes	yes	yes	yes
... of which, in <u>publicly</u> owned forests	yes	yes	yes	yes
... of which, in <u>privately</u> owned forests	yes	yes	yes	yes

10.4 Comments

Variable / category	Comments related to data definitions etc
Policies supporting sustainable forest management	Example of policies/strategies that support SFM is Executive Order No. 263: Adopting Community-Based Forest Management as the National Strategy to Ensure the Sustainable Development of the Country's Forestland Resources and Providing Mechanisms for its implementation.

Legislation and regulations supporting sustainable forest management	Some of the legislations made that supports SFM includes the Executive Order No. 318, series of 2004 "Promoting Sustainable Forest Management in the Philippines". The most recent legislations signed by the Philippine President are the Executive Order No. 23, series of 2011 "Declaring a Memorandum on the Cutting and harvesting of Timber in the Natural and Residual Forests and Creating the Anti-Illegal Logging Task Force"; and Executive Order No. 26, series of 2011 or the National Greening Program that aimed to rehabilitate 1.5 million hectares from 2011 to 2016
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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	Regional reports	N/A	N/A
2	DENR official website	N/A	N/A
3	DENR Annual Reports	N/A	N/A
4	Public hearing/consultation documentations/proceedings	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
National stakeholder platform	In terms of forest policy development, stakeholders are usually consulted thru national fora and symposium, public consultation, meetings, workshops. Stakeholders also provided feedback for better and effective policy implementation

Other general comments

The sources of information are usually annual reports.

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	Thang, H. C. 1991. Asean Forest Resource Database-Country Report – The Philippines. Asean Institute of Forest Management. Kuala Lumpur.	Forest Designation & management	1988	N/A
2	NFA 2005. National Forest Resource Assessment – Philippines. Working paper 96. FAO Rome.	Forest Designation & management	2005	The report includes information on forest designation & protection status and forest management system.
3	2010 Land Cover Mapping	Area of forests within forestland and A & D lands	2010	N/A
4	N/A	N/A	N/A	N/A

12.2.2 Classification and definitions

National class	Definition
Permanent Forest Estate	Forest land designated to be retained as forest and which cannot legally be converted to other land uses
Forest land	Includes public forest, permanent forest or forest reserves and forest reservations. Areas with slope of 18% and above
Forest cover	Natural or man-made forests, including forests within wetlands, and build up areas

N/A	N/A
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12.2.3 Original data

See 4.2.3.

12.3 Analysis and processing of national data

12.3.1 Adjustment

See 4.3.1.

12.3.2 Estimation and forecasting



See 4.3.2.

12.3.3 Reclassification

This step is not necessary

12.4 Data

Table 12

Categories		Forest area 2010 (000 ha)
	Forest area intended to be in permanent forest land use	6356
	... of which permanent forest estate	1610

Tiers

Category	Tier for status
Forest area intended to be in permanent forest land use	Tier 2
Permanent forest estate	Tier 2

Tier Criteria

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

Permanent forest estate	Tier 3 : National or sub-national land use plans strategy documents or other reports within the past 10 years Tier 2 : National or sub-national land use plans strategy documents or other reports within the past 20 years Tier 1 : Other
-------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

12.5 Comments

Category	Comments related to data definitions etc
Forest area intended to be in permanent forest land use	These are forests within forestlands based on the 2010 Land Cover Mapping done by NAMRIA
Permanent forest estate	These are protected areas with forest cover. The data is extrapolated using the 1991 study and 2002-2004 FAO supported NFA project. The resulting percentage is then multiplied to the area of forest generated in the 2010 land cover mapping

Other general comments

Philippines does not have rodust data on forest intend to be in permanent forest land use and permanent forest estate.

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	National Forest Inventory	Growing stocks and extent of forest	2002-2004	N/A
2	Philippine Forestry Statistics (DENR-FMB & NAMRIA)	Land/Forest Cover Extent	1990-2011	N/A
3	National Land Cover Mapping Data (NAMRIA)	Land/Forest Cover Extent	2010	2010 Land cover mapping of the Philippines is completed mid of year 2013
4	N/A	N/A	N/A	N/A

13.2.2 Classification and definitions

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

13.3 Data

Table 13a

Category	% of total forest area	Most recent year	Check all boxes that apply					
			Continuous	Periodic	Permanent ground plots	Temporary ground plots	Aerial/ remote sensing sample based	Aerial/ remote sensing full coverage
Forest inventory	100	2003		yes	yes			yes
Other field assessments	N/A	N/A						
Updates to other sources	N/A	2011		yes				
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)	
4 None	

Other type of forest reporting

Annual Philippine Forestry Statistics prepared by DENR-Forest Management Bureau. The latest publication of which is Year 2011

13.4 Comments

Category	Comments
Philippine Forestry Statistics Reports	This is an annual publication of the Forest Management Bureau, Department of Environment and Natural Resources that compiles basic and current statistics on forests and the forest-based industries. Also referred to "Updates to other sources" in Table 13a.
National Forest Inventory	This is being done through relocation and remeasurement of FRA tracts established during the 2002-2004 FAO supported NFA Project, which serves as the third National Forest Inventory in the Philippines. The intension of the new leadership of FMB is to make this activity mainstreamed to all Regional/field offices plans/activities and provided it with appropriate budget allocation
N/A	N/A

Other general comments

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	Philippine Forestry Statistics	Area under forest management agreements	2010	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

14.3 Data

Table 14a

Forest plan type	Forest area 2010 (000 ha)
Forest area with management plan	2923
... of which for production	2923
... of which for conservation	0

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	10
--------------------------------------------------------------------------------	-----------

Tiers

Category	Tier for status
Forest area with management plan	Tier 3
Percent of area under forest management plan that is monitored annually	Tier 2

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	The reported data comprised of all forest area covered by tenurial instruments such as: Timber License Agreement (TLA), Integrated Forest Management Agreement (IFMA), Socialized Integrated Forest Management Agreement (SIFMA), Community-based Forest Management Agreement (CBFMA). There is no comprehensive report submitted by the Regional Offices on the percent of area under forest management plan that is monitored annually, through they are conducting monitoring and evaluation of the tenured areas (with management plans). The 10% as indicated above is just an estimate. No robust data on "forest area with management plan of which for conservation"
N/A	N/A
N/A	N/A

Other general comments

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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	Stakeholders involvement was manifested through attendance and participation to national and regional/sub-regional fora, symposium, conferences, workshop and meetings e.g. stakeholders and Peoples Organizations (POs) Congress conducted in 2011. Third Party monitoring of forestry programs and projects is one of the innovations being done by DENR to promote transparency and accountability. The stakeholders inputs are in form of position paper, resolutions and the likes, and these inputs are being submitted to the Department of Environment and Natural Resources, House of Representatives, Senate, and even to the Office of the President.
N/A	N/A

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

Other general comments

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

Documents for this question:

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

16.1 Categories and definitions

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

16.2 Data

Table 16a













International forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	FSC	0	0	14.8	14.8	14.8	0	0
	PEFC	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	0	0	0	0	0	0	
	PEFC	0	0	0	0	0	0	
	Other	0	0	0	0	0	0	

Table 16b

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

		2007	2008	2009	2010	2011	2012	
	N/A	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	The Philippines is just starting to engage in the forest certification process
Domestic forest management certification	The Philippines is just starting to engage in the forest certification process

Other general comments

The data presented in Table 16a (International Forest Management Certification) came from the data provided by FAO

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	FMB. Philippine Forestry Statistics. Forest Management Bureau, Department of Environment and Natural Resources. Philippines	Forest Revenue	2000, 2005 & 2010	Includes information on the amount of forest charges collected annually on harvested roundwood and non-timber forest products.
2	General Appropriations Act. Official Gazette. Republic of the Philippines	Public Expenditure	2000, 2005 & 2010	Provides information on the national budgetary allocations of the different government agencies in a given year. The General Appropriations Act is enacted by both houses of Congress.
3	FMB. 2006. Philippine Official Reference for Forest-Related Terms and Definitions. 2006. Forest Management Bureau, Department of Environment and Natural Resources. Philippines	Forest Revenue	2006	It is a compendium of harmonized forest-related terms and definitions. It is the final output of the ITTO-funded project entitled “Harmonization of Forest-Related Terms and definitions”.
4	N/A	N/A	N/A	N/A

17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	144254	136378	156861
Public expenditure on forestry	1943591	1982398	4247321
	2000	2005	2010
Name of Local Currency	Philippine Peso	N/A	N/A

17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	These are the forest charges collected by the government on harvested roundwood and non-wood forest products (NWFP) pursuant to RA 7161.
Public expenditure on forestry	This is the budgetary allocations provided in the General Appropriations Act for the implementation of Forest Management, Protected Areas & Wildlife Management and Ecosystems Research & Development programs.
Other general comments	N/A

Other general comments

The increase in expenditure on forests between 2005 and 2010 was due to funding of the development and rehabilitation of additional protected/conservation areas in the country plus increase in expenditure for the acquisition of new equipment, softwares and hardwares. Also the salary of government employees has increased in 2010.

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 (sub-category)	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 (sub-category)	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 (sub-category)	Forest owned by individuals and families.
...of which private business entities and institutions (sub-category)	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 (sub-category)	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	NFA 2005. National Forest Resource Assessment – Philippines. Working Paper 96. FAO Rome.	Forest ownership and management rights	2005	Contains information on forest in legally classified Forestland and A&D land as well as forest ownership and management rights.
2	FMB. 2003. Philippine Forestry Statistics. Forest Management Bureau, Department of Environment and Natural Resources. Philippines.	Forest ownership and management rights	2003	Contains information on forest in legally classified Forestland and A&D land but lacks information on forest ownership and management rights.
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

18.2.2 Classification and definitions

National class	Definition
Forestland	Refers to lands of the public domain which has not been declared as alienable or disposable land and includes the public forest, the permanent forest or forest reserves, forest reservations, timberlands, grazing lands and game refuge and bird sanctuaries.
Alienable or Disposable land	Refers to lands of the public domain which have been the subject of the present system of classification and declared as not needed for forest purposes.
Privately-owned	Owned by individuals, families, companies, private companies, cooperatives or institutions.
State-owned	Owned by national, regional or local government, or state companies.
Municipality-owned	Owned by the city, municipality, village municipalities, villages or communes.
Community-owned	Tenure right certificate by tribal or indigenous groups in view of historical use of forest area.

18.2.3 Original data

2003 NFA Project Data					
	Total Forest Area	State Owned	Municipality Owned*	Privately Owned	Community Owned**

Forest Area by ownership	7 162 560	6 087 029	9 486	1 044 486	21559
Percentage		85.0%	0.1%	14.6%	0.3%

Note: * The forests owned by municipalities are also owned by the state.

** The forests owned by communities are privately-owned.

18.3 Analysis and processing of national data

18.3.1 Adjustment

Area of State-Owned and Privately-Owned Forests - the data of the 2002-2004 NFA Project was used in the adjustment of 2003 NAMRIA Data. The corresponding percentage i.e. 85.1% and 14.9% were multiplied to the total area of forest to be able to get the hectareage of the state-owned and privately-owned forests, respectively.

Land Use/ Forest Type	2003 NFA Project Data			2003 Adjusted NAMRIA Data		
	Total	State-owned	Privately-owned	Total	State-owned	Privately-owned
Forest	7,162,560	6,096,515	1,066,045	7,168,400	6,101,486	1,066,914
Percentage		0.851	0.149			

No adjustment needed for the 1988 and 2010 data

18.3.2 Estimation and forecasting

The 1988, adjusted 2003 and 2010 NAMRIA data used to generate the needed data for Years 1990, 2000, 2005, 2010 and 2015. State-Owned forests are generally forest within forestland while privately-owned forest, are those forests within Alienable and Disposable (A & D) lands.

2003 NFA Project Data			
Land Use/Forest Type	Total	State-owned	Privately-owned
Forest	7,162,560	6,096,515	1,066,045
Percentage		0.851	0.149

Land Classification	1988 FRI Data	2003 Adjusted NAMRIA Data	Difference	Annual Change
State-Owned	6,351,900	6,100,308	-251,592	-16,773
Privately-Owned	108,700	1,068,092	959,392	63,959
Difference (1988-2003)	6,460,600	7,168,400	15	

Land Classification	2003 Adjusted NAMRIA Data	2010 NAMRIA Data	Difference	Annual Change
State-Owned	6,100,308	6,355,780	255471.4	36495.9
Privately-Owned	1,068,092	483,938	-584153.2	-83450.5
Difference (2003-2010)	7,168,400	6,839,718	7	

Forest Ownership Category	Area (in 1000 ha)				
	1990	2000	2005	2010	2015
State-Owned	6,318	6,151	6,173	6,356	7,556
Privately Owned	237	876	901	484	484
TOTAL AREA OF FOREST	6,555	7,027	7,074	6,840	8,040

(Details may not add up to totals due to rounding)









18.3.3 Reclassification

State-owned Forest - 100% Forest within Forestland/Public forests

Privately-Owned Forest - 100% Forest within Private lands/Alienable and Disposable (A & D) lands

18.4 Data

Table 18a

Categories		Forest area (1000 hectares)			
		1990	2000	2005	2010
	Public ownership	6318	6151	6173	6356
	... of which owned by the state at national scale	6318	6151	6173	6356
	... of which owned by the state at the sub-national government scale	N/A	N/A	N/A	N/A
	Private ownership	237	876	901	484
	... 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		6555.00	7027.00	7074.00	6840.00

Tiers

Category	Tier for status	Tier for reported trend
Public ownership	Tier 3	Tier 2
Private ownership	Tier 3	Tier 2
Unknown ownership	Tier 3	Tier 2

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	2649	2206	4088	4529
Individuals	0	17	31	28
Private companies	3371	1187	1243	997
Communities	298	2741	811	802
Other	0	0	0	0
TOTAL	6318.00	6151.00	6173.00	6356.00

Category	Tier for reported trend	Tier for status
Public Administration	Tier 3	Tier 2
Individuals	Tier 3	Tier 2
Private companies	Tier 3	Tier 2
Communities	Tier 3	Tier 2
Other	Tier 3	Tier 2

18.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Public ownership	This refers to forest inside legally classified forestland	The increasing trend is attributed to intensified forest protection of public forest

Private ownership	This refers to forest in legally classified alienable or disposable (A&D) lands	The decreasing trend of forests within private lands in 2010 is attributed to harvesting of plantation forests and naturally growing trees therein particularly those planted during the late 1990s, and year 2000.
Unknown ownership	No other types of ownership exist in the country, only public and private ownership.	N/A
Management rights	N/A	Forests under public administration are increasing because of non renewal of tenure instruments specifically of those that were not able to meet the renewal requirement, and non issuance of new tenure instruments pending the passage of "unified" tenure instrument and in view of Executive Order No. 23

Other general comments to the table

Basically the changes in private ownership is due to harvesting of plantation planted sometime early year 2000. It is worth mentioning that registered mature plantations are harvested without any permit from the government. Only transport document will be secured by the plantation owners should they intend to transport their logs outside the municipality/province.

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	Reports from DENR field offices	N/A	N/A	N/A
2	Philippine Forestry Statistics	Employment Data on Forestry Industries	2010	N/A
3	Global Forest Resources Assessment 2010 Country Report, Philippines (FRA2010/164, Rome, 2010)	Employment data on Forestry Industries	1990, 2000 & 2005	N/A
4	N/A	N/A	N/A	N/A

19.2.2 Classification and definitions



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

19.2.3 Original data

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19.3 Data

Table 19

Category		Employment (000 years FTE)			
		1990	2000	2005	2010
	Employment in forestry	17.8	18.06	22.79	57.82
	... 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	The data generally consists of the employees of private business entities engaged in log production.	The low employment in 2000 can be attributed to the decrease in the number of logging companies and the forestlands covered by them from 1990 to 2000 and their subsequent increase from 2000 to 2010.

Other general comments to the table

The data was based on the reports submitted by the DENR field offices except regions 4A, 12 and the Autonomous Region in Muslim Mindanao (ARMM). The data is weak considering that many DENR field offices lack information for the requested reporting years.

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)	3906	Philippine peso	2011

20.3 Comments

Category	Comments
Gross Value Added from forestry (at current prices)	Based from the UNdata/EUROSTAT, as of 2008, the GVA from forestry of the Philippines is 4333 Million pesos. This figure has changed such that the new data as of 2011 is 3906 Million Pesos (reference: 2011 Philippine Forestry Statistics, DENR-FMB)

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	Executive Order No 26 or the National Greening Program	Target area to be planted by 2016	2011-2016	This Order consolidates and harmonizes all greening efforts of the government, civil society and the private sector. By 2016, it is expected that the forest cover of the country will increase by 1.5M hectares
2	DENR Memorandum Circular No. 2011-01	Guidelines and procedures in the implementation of the NGP	2011	This includes target area (hectares), areas for development, development component, etc.
3	Executive Order No. 23 Declaring Moratorium in the Cutting/Harvesting of trees in the Natural/Residual Forests and the Creation of the Anti-Illegal Logging Task Force	Intensified Forest Protection	2011	Due to this Order, harvesting of trees in the Philippines is only confined to plantation forests
4	N/A	N/A	N/A	N/A

21.3 Data

Table 21a

Category	Forest area (000 ha)	
	2020	2030
Government target/aspiration for forest area	8340	9840

Table 21b

Category	Forest area (000 ha)
	2013
Forests earmarked for conversion	0

21.4 Comments

Category	Comments
Government target/aspiration for forest area	There will be a foreseen increase in forest cover by 2020 which are mostly due to massive re-greening/reforestation program thru the NGP and establishment of forest plantations. An additional 1.5M hectares is expected to add to the 2010 forest cover of the country. The Philippines is currently intensifying forest protection activities to safeguard the remaining forests of the country. Should the NGP will continue and with the intensified forest protection activities, an additional 1.5 Million hectares of degraded lands are expected to be rehabilitated/reforested by 2030
Forests earmarked for conversion	Harvesting of forest will most likely occur in plantation forests considering that there is a moratorium in cutting and harvesting of trees from natural and residual forests of the country. However, after harvesting, it is expected that these areas will be replanted with forest tree species for future harvest. Therefore, this case cannot be considered conversion to other land uses. The country does not allow conversion of forests to other land uses

Other general comments

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