

# GLOBAL FOREST RESOURCES ASSESSMENT 2015

## COUNTRY REPORT

# **Guyana**

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

Place an introductory text on the content of this report

The forest resources of Guyana have multiple land uses the main ones being timber production and in providing ecosystem services. Forests cover some 88% of Guyana containing over 5 gigatonnes of CO<sub>2</sub> in above ground biomass. Other land uses include non-timber harvesting, agriculture, ecotourism, research, conservation and as biodiversity reserves. These uses occur on both State and Amerindian Land with those on State Land being administered by the GFC while those on Amerindian Land are administered by local communities often with the help of GFC.

As part of the REDD+ process the Monitoring, Reporting and Verification System (MRVS) exercise aims to identify and map forest and non-forest land covers so that the changes between the two can be monitored. The MRVS baseline study therefore reassessed the 2001 vegetation mapping and produced a 'Simplified National Vegetation Map at 1:1m.

The information and data that was used to compile this report were obtained from:

1. Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011) – July 2012
2. Forest Sector Information Report, Guyana, for 2012 – June 2013
3. Guyana National Land Use Plan – June 2013
4. Guyana Forestry Commission, Forest Resources Information Unit
5. Hydro Metrological Office – presentation in 2013
6. Mangrove Rehabilitation and Restoration Project – Progress report, 2011, and
7. Guyana Low Carbon Development Strategy – March 2013

### Desk Study?

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

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Desk Study?	no
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## 1. What is the area of forest and other wooded land and how has it changed over time?

Documents for this question:

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

### 1.1 Categories and definitions

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

### 1.2 National data

#### 1.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011)	Area Sizes	July 2012	Forest area.

2	Guyana National Land Use Plan	Area size and Definitions	June 2013	Land use and forest classification
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

### 1.2.2 Classification and definitions

National class	Definition
Forest Land	Land classified as forest follows the definition as outlined in the Marrakech Accords (UNFCCC, 2001), Guyana has elected to classify land as forest if it meets the following criteria: Tree cover of minimum 30%, At a minimum height of 5 m, Over a minimum area of 1 ha. Includes Mixed forest, Montane and Steep forest, Wallaba/Dakama/Muri scrub , Swamp and Marsh forest and Mangrove forest. evergreen forest.
Mixed Forest	This unit is the most common type of forest occurring in Guyana. It occurs in lowlands (10-400m) with high rainfall. The evergreen units occur in the north-west areas of Regions 1 and 7 commonly known as ‘Rainforest’ as well in the Pakaraimas (on the border with Venezuela) and the uplands on the border with Brazil. In the southern areas of Region 9 they are mainly deciduous and occur at the border of the Rupunini savannas to the South – East, and have a high abundance of endemic and commercial timber species.
Montane and Steep Forest	Montane forest units in Guyana are associated with high rainfall tolerant species (ombrophilous) and slopes in the uplands (500-2,000m). They occur mainly in the southern regions, the Kanuku Mountains, the Pakaraima Mountains and the upper Mazaruni valley.
Swamps and Marsh Forest	In permanently flooded, flat plains in the present coastal zone a low swamp forest is found. Characteristic species are <i>Symphonia globulifera</i> , <i>Tabebuia insignis/fluviatilis</i> , <i>Pterocarpus officinalis</i> and <i>Euterpe oleracea</i> . Species that can become locally dominant in this forest type in Guyana are <i>Pentaclethra macroloba</i> , <i>Vatairea guianensis</i> , <i>Pterocarpus officinalis</i> and <i>Virola surinamensis</i> . <i>Manicaria saccifera</i> is commonly found as a narrow belt along rivers. More inland the duration of flooding is less pronounced and forest composition is slightly different. Common species here are <i>Symphonia globulifera</i> , <i>Virola surinamensis</i> , <i>Iryanthera</i> spp., <i>Pterocarpus officinalis</i> , <i>Mora excelsa</i> , <i>Pachira aquatica</i> , <i>Manicaria saccifera</i> and <i>Euterpe oleracea</i> .
Wallaba/Dakama/Muri scrub	In areas where fires are very regular or in flood-prone areas Dakama forest degrades into Muri-scrub, dominated by <i>Humiria balsamifera</i> . Other common species in this scrub are <i>Swartzia bannia</i> , <i>Clusia fockeana</i> , <i>Licania incana</i> , <i>Bombax flaviflorum</i> , <i>Ocotea schomburgkiana</i> , <i>Trattinickia burserifolia</i> , <i>Ternstroemia punctata</i> and <i>Byrsonima crassifolia</i>

Mangrove forest	Mangrove vegetation primarily comprises of trees and shrubs, with a limited number of palms and lianas (Evans, 1998). There are three main mangrove species occurring in Guyana. These are <i>Avicennia germinans</i> , <i>Rhizophora mangle</i> and <i>Laguncularia racemosa</i> (Hussein, 1995).
30% forest cover" /> Savannah >30% forest cover	30% have been excluded and are treated as non-forest." /> This class contains forest with lower volume that still meets the national definition of forest. Savannah areas that do not meet > 30% have been excluded and are treated as non-forest.
Other wooded land (OWL)	Shrubland and grassland. Land that is not defined as “Forest land” and “Other land” (Cultivated cropland and plantation eg. Sugar, rice, coconut, etc., Residential, commercial and industrial settlements,
Scrubland	In the lowlands, this type of Scleromorphic scrub is known also as Muri scrub and is located on white sands and savannas. It also occurs in the Pakaraima mountains and the Kanuku foothills up to 1,500m.
Grassland	This type of unit is formed of herbaceous plants located in the bi-seasonal lowlands. Savannas dominated by grasses are found at all altitudinal levels, from the lowlands to the uplands. In the white sand plateau area in the north, shrub savannas form an interrupted chain stretching from Guyana into Suriname heavily degraded by human activities.
Other land	Cultivated cropland and plantation (eg. Sugar, rice, coconut, etc), Residential, commercial and industrial settlements,
Inland water bodies	Inland water bodies generally include major rivers, streams, lakes and water reservoirs.

### 1.2.3 Original data

<b>Forest area</b>			
Land Use Figures for Guyana, 1000 ha			
<p>The 2010 Interim measures report estimated that as at the benchmark period (30 September 2009) the total forest area that met the above definition was 18.398 million ha (<math>\pm</math> 0.4130 million ha). This figure was further verified by the University of Durham (UoD) with an indicative accuracy of (97.1%).</p>			
	<b>2009</b>	<b>2009</b>	
<b>Land Use</b>	<b>Area by sub - category</b>	<b>1000 ha</b>	<b>FRAClass</b>
Cultivated, settlement and deforested areas		1304	other land
Tropical High Forest	18,180	18,180	forest



Savannah > 30% forest cover	137	137	forest
Mangrove Forest	81	81	forest
Grassland and Scrubland	1,795	1,795	other wooded land
Total forest cover of which	15,406	18,398	
State Forest	2,992		
Other forest land			
<b>Total land Area</b>		<b>21,497</b>	

Initially, forest area was mapped by IAP/GFC excluding non-forest land cover types, including water bodies, infrastructure, mining and non-forest vegetation in 1990, and from that point forward land cover change from forest to non-forest has been mapped and labelled with the new land cover class and the change driver. GFC have conducted field inspections and measurements over a number of non-forest sites to verify the land cover type, the degree of canopy closure, the height of the vegetation and its potential to regenerate back to forest. The mapping was based on manual interpretation of Landsat TM and ETM + imagery at approximately 1:24,000 using ArcGIS software. Mapping was conducted for GFC by Pöyry Consultants for the following epochs: 1990, 2000, 2005, 2009 and 2010 (See GFC/Pöyry and Indufor Interim Measures Report, March 2011 (Year 1), and July 2012 (Year 2): [http://www.forestry.gov.gy/Downloads/Guyana\\_MRVS\\_Interim\\_Measures\\_Report\\_16\\_March\\_2011.pdf](http://www.forestry.gov.gy/Downloads/Guyana_MRVS_Interim_Measures_Report_16_March_2011.pdf) ) and [http://www.forestry.gov.gy/Downloads/Guyana\\_MRVS\\_Interim\\_Measures\\_Report%20Year\\_2\\_Version\\_3.pdf](http://www.forestry.gov.gy/Downloads/Guyana_MRVS_Interim_Measures_Report%20Year_2_Version_3.pdf). The 2009 epoch represents the Benchmark period for the Interim Measures and for the MRVS. Areas mapped as deforested during the period 1990-2009 are used to establish the *deforestation rate* for the benchmark reporting period.

### Forest expansion, reforestation

There is some reforestation activities in Guyana in relation to replanting of mangrove on Guyana's coastline. 2.04 km of the coastline was replanted, as of the end of year 2011.

## 1.3 Analysis and processing of national data

### 1.3.1 Adjustment

All the data that is in this report is derived from the Guyana Interim measures MRVS reports. The report identified area of forest cover as 18.398 million hectares inclusive of waterbodies in 2009. The total area for Guyana was determined to be 21.129 million hectares. these figures were used to derive other data for other years. FAO stats reports a total area of 21497 (000h) hence information on table has been adjusted.

Data from MRVS report 1 and 2 shows that deforestation for 1990 to 2009 was about 77,000 hectares and that for 2010 was about 10,000 hectares

### 1.3.2 Estimation and forecasting

The 2009 figures were used as the starting point for all reporting years.

It is assumed that the decrease in forest area will result in corresponding increase in other land due to conversion to cultivation, settlement etc.

### 1.3.3 Reclassification




Land classified as **forest** by GFC follows the definition from the Marrakech Accords (UNFCCC, 2001). Under this agreement forest is defined as: a minimum area of land of 0.05-1.0 hectares (ha) with tree crown cover (or equivalent stocking level) of more than 10-30% with trees with the potential to reach a minimum height of 2-5 m at maturity in situ. In accordance with the Marrakech Accords, Guyana has elected to classify land as forest if it meets the following criteria: Tree cover of minimum 30%, At a minimum height of 5 m and Over a minimum area of 1 ha.

National classes	FRA classes
Cultivated, settlement and deforested areas	other land
Tropical High Forest	forest
Mangrove Forest	forest
Savannah > 30% forest cover	forest
Grassland and Shrubland	other wooded land

Note that inland water is included in the above categories, mainly the forest category. The forest area has therefore been estimated as the sum of the three forest categories in the table above minus the inland water area according to FAOSTAT (1 812 000 hectares), giving a total forest area of 16 586 000 hectares in 2009

## 1.4 Data

Table 1a

Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
	Forest	16660	16622	16602	16576	16526
	Other wooded land	1795	1795	1795	1795	1795
	Other land	1230	1268	1288	1314	1364










	... of which with tree cover	N/A	N/A	N/A	N/A	N/A
	Inland water bodies	1812	1812	1812	1812	1812
	TOTAL	21497.00	21497.00	21497.00	21497.00	21497.00

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	0	0	0	N/A	0	0	0	N/A
	... of which natural expansion of forest	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which human induced	4	4	4	10	0	0	0	0
	Reforestation	N/A	N/A	N/A	0.027	N/A	N/A	N/A	N/A
	... of which artificial	0	0	0	N/A	0	0	0	0

## Tiers

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

## Tier criteria

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

## 1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends
Forest	N/A	N/A
Other wooded land	This category now exclude savanah land with > 30% tree cover	N/A
Other land	It is assumed that the decrease in forest area that is reported is due to conversion to cultivation, settlements, etc.	N/A
Other land with tree cover	N/A	N/A
Inland water bodies	Data on inland water is not available hence FAOSTATS figure is being used.	N/A
Forest expansion	N/A	N/A
Deforestation	N/A	N/A
Reforestation	N/A	N/A

**Other general comments to the table**

There is no distinction made with respect to inland water bodies. This figure was included in total forested area and was adjusted using the FAOSTATS.

## 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 <b>outside</b> 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	Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011)	Area Sizes	July 2012	Forest area.
2	Forest Sector Information Report, Guyana	Definitions	2012	Forest Area Allocation
3	Guyana National Land Use Plan	Area size	June 2013	Land use and forest classification

4	Progress report of Guyana Mangrove Restoration Project - September 2011	Area size	September 2011	Report on mangrove restoration
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## 2.2.2 Classification and definitions

National class	Definition
Primary forest	Natural forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed. Forest lands unallocated and Protected areas
Other naturally regenerated forest	Naturally regenerated forest where there are clearly visible indications of human activities.
N/A	N/A
N/A	N/A

## 2.2.3 Original data

From the concession register by end of 2012, the total area of unallocated forest is 4.7 million hectares, and when added to forest in protected areas, the area of primary forest can be calculated. Remaining forests areas are considered to be naturally regenerated forest, because of forest harvesting practices. There is no way of determining how much of the allocated land is being subjected to harvesting hence the assumption is that all allocated forest is subject to some level of harvesting hence is designated regenerated forest.

The figure for forest unallocated in 2007 was 5.3 million ha, as compared to 4.7 ha in 2012 – An average of 120,000 ha per year allocated for this period

## 2.3 Analysis and processing of national data

### 2.3.1 Adjustment

#### Changes in Guyana's Forested Area 1990-2010 - Year 1 report

The total area converted from forest to non-forest between 1990 and 2009 is estimated at 74 917 ha. This is calculated by subtracting the initial 1990 forest area from the 2009 September forest area (19.75 years). The estimate includes all forest to non-forest change i.e. detected mining, road infrastructure, agricultural conversion and fire events that result in deforestation. It does not include forest degradation caused by selective harvesting, fire or shifting agriculture.

The same approach and criteria have been applied to calculate the area of deforestation from 2009 to 2010 (year 1 period). The total area of deforestation for this period is calculated at 10 280 ha (Table 8-1).

<b>Table 8-1: Area Deforested 1990 to 2010 Period</b>	<b>Forest Area ('000 ha)</b>	<b>Change ('000 ha)</b>	<b>Change (%)</b>
Initial forest area 1990		18 473.39	
Benchmark (Sept 2009)	18 398.48	74.9239	0.41%
Year 1 (Sept 2010)	18 388.19	10.28	0.06%

### Year 2 report .

For the fifteen months Year 2 period (2010 to 2011) deforestation has remained relatively constant at 9 889 ha/yr. This is equivalent to a deforestation rate of 0.054%/yr for the period, which is very similar, and actually a marginal percentage lower, to the Year 1 rate (12 months) of 0.056%/yr.

### 2.3.2 Estimation and forecasting

The figures calculated for forest in respective years in Table 1a were used as the starting point for calculations.





Figures for 2010 were calculated based on the following steps.

- Unallocated area is considered as primary forest
- Area allocated is considered naturally regenerated forest because of selected harvesting that is being practiced in Guyana
- The data shows that 5.3 M ha of forest area was unallocated in 2007 and 4.7 ha of forest area was unallocated in 2012. Total of 600,000 hectares in 5 years (120,000 ha of primary forest on the average is allocated on a yearly basis)
- Using this figure, area of primary forest is calculated and added to protected area (Forest) – 2,142,000 ha to give total primary forest.
- Naturally regenerated forest is total forest area minus primary forest area.
- 2010 figures are used to determine other figures assuming an increase in allocation of 120,000 ha per year

### 2.3.3 Reclassification

## 2.4 Data

Table 2a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Primary forest	9477	8277	7677	7077	6477
	Other naturally regenerated forest	7183	8345	8925	9499	10049
	... of which of introduced species	0	0	0	0	0
	... of which naturalized	7183	8345	8925	9499	10049



	Planted forest	0	0	0	0	0
	... of which of introduced species	0	0	0	0	0
TOTAL		16660.00	16622.00	16602.00	16576.00	16526.00

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
1200	0	0	1200	0	0	600	0	0

Table 2c

Categories	Area (000 hectares)				
	1990	2000	2005	2010	2015
Mangroves (forest and OWL)	81	81	81	81	81
... of which planted	0	0	0	0.027	0.3

## Tiers

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

## 2.5 Comments



<b>Category</b>	<b>Comments related to data definitions etc</b>	<b>Comments on reported trend</b>
Primary forest	Primary forest constitutes unallocated forest and protected areas forest	N/A
Other naturally regenerating forest	Is denoted by forest that has been allocated for harvesting and Amerindian titled lands	N/A
Planted forest	Guyana has no plantations for commercial use, only a few sample plots for research purposes and of insignificant area.	N/A
Mangroves	There has been some effort on going to plant mangrove along the coastline of Guyana. To date about 27 hectares have been planted.	N/A

**Other general comments to the table**

N/A

### 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	Establishing a Reference level for REDD+ in Guyana	Biomass and carbon offset	2012	Brown et al.
2	ter Steege: Biomass Estimate for Forest in Guyana and their Use in Carbon Offset - Iwokrama	Biomass and Carbon Offset	2001	N/A
3	Biomass Estimate for Forest in Guyana and their Use in Carbon Offset - Iwokrama	Biomass	2001	N/A

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

### 3.2.2 Classification and definitions

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

### 3.2.3 Original data

#### **Growing stock**

No documented original data on growing stock and volumes are available. The biomass data from the biomass study used for compiling tables on growing stock has been used, which indicates an average above-ground tree biomass of 236 tonnes per hectare.

All forests are broadleaved.

#### **Biomass stock**

The presented data are extracted from the Carbon Stock Assessment under the National Measuring, Reporting and Verification System in Guyana (MRV). Under the MRV specifically under the Sampling Design and Implementation Plan for Guyana's REDD+ Forest Carbon Monitoring System, the country was stratified for biomass sampling based on its potential for change. The stratifications are: high, medium and low potential for change, with a further division of each stratum into more accessible and less accessible zones. The results presented in this table below represent the high potential for change strata and the average carbon stock, while the biomass data presented above is an average of the two zones. The data are accurate because they are all based on existing field data collected under the same methodology and implementation periods of about 3 years back to present. It is used with the intention of data being updates as they become available and as such because the data presented are of the high potential for change it is possible that the biomass of the remaining areas that have yet to be sampled have a higher biomass content as they include mostly pristine virgin forests. Bearing this in mind it can be assumed that data presented represents the minimum biomass content of Guyana's forested area. The data formerly used was replaced with this data because this data was produced with a high level of accuracy and confidentiality.

Biomass estimates for forests in the high potential for change strata of the FCMS sampling design. Source: Brown et.al. (2012). p.17.

Carbon Pool	Carbon Stocks (t C ha <sup>-1</sup> )	
	More Accessible	Less Accessible
Aboveground Tree	187.2	284.8
Belowground Tree	44.0	66.9
Saplings	1.2	1.3
Litter*	5.6	5.6
Dead Wood	11.9	14.8
Soil Carbon (top 30 cm)	105.5	87.9
Total (without soil) †	249.7 (9.6%)	373 (8.9%)

The equations used to calculate the above and below ground tree carbon is Chave et.al. (2005) and Mokany et.al.(2006) respectively.

### Carbon stock

Data on biomass has been used directly as input to this reporting table. Litter biomass is reported under original data to table on biomass.

## 3.3 Analysis and processing of national data

### 3.3.1 Adjustment

#### Carbon stock

Biomass figures were multiplied with a carbon fraction of 0.47. As for litter, the average tonnes of Carbon per hectare is presented also in the table above.

The change in carbon stocks in the top 30 cm of soil was calculated as the difference between the soil carbon stock before conversion and the soil carbon stock 20 years after conversion (time it takes to reach new steady state), where the soil carbon stock after conversion was estimated based on land use, management and input factors as given in above table. For simplicity in accounting, we assume the full emission of soil carbon in the year of clearing, rather than spreading the emission over 20 years as recommended by IPCC (2006) (Brown et.al 2012.p.18).

### 3.3.2 Estimation and forecasting

#### Growing stock

Lacking any data on trends, the same figures has been used for all reporting years.

#### Biomass stock

The same value has been used for all reporting years.

### 3.3.3 Reclassification

#### Growing stock

Assuming humid tropical forests with an average volume of 120-200 m<sup>3</sup> per hectare, the IPCC Guidelines gives a biomass conversion and expansion factor of 1.3. Thus, dividing 236 tonnes of carbon per hectare by 1.3 gives a volume of 181 m<sup>3</sup> per hectare. This has been multiplied with the total forest area for the respective year and the results are presented in a table below.

#### Biomass stock

Trees + Other: Above-ground biomass

Roots: Below-ground biomass

Large litter: Dead wood

This gives the following biomass values:

<b>(tonnes per hectare)</b>						
	<b>AGB</b>	<b>BGB</b>	<b>DW</b>	<b>TOTAL</b>	<b>Litter</b>	<b>soil</b>
Biomass	472	110	26	608	11.2	193.4
Carbon	236	55	13	304	5.6	96.7

The values here are carbon values and biomass is twice the carbon values, hence the results being doubled

Multiplying these per hectare values with total forest area as of Question 1.

### 3.4 Data

Table 3a




Category		Growing stock volume (million m <sup>3</sup> over bark)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Total growing stock	3015	3009	3005	3000	2991	325	325	325	325	325
	... of which coniferous	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
	... of which broadleaved	3015	3009	3005	3000	2991	325	325	325	325	325

Table 3b

Category/Species name			Growing stock in forest (million cubic meters)			
Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	Chlorocardium rodiei	Greenheart	N/A	N/A	N/A	N/A
2 nd	Peltogyne Spp.	Purpleheart	N/A	N/A	N/A	N/A
3 rd	Carapa spp.	Crabwood	N/A	N/A	N/A	N/A
4 th	Catostemma spp.	Baromalli	N/A	N/A	N/A	N/A
5 th	Hymenaea spp.	Locust	N/A	N/A	N/A	N/A
6 th	Eperua spp.	Wallaba	N/A	N/A	N/A	N/A
7 th	Aspidosperma album	Shibadan	N/A	N/A	N/A	N/A
8 th	Loxopterygium sagotii	Hububalli	N/A	N/A	N/A	N/A
9 th	Goupia glabra	Kabukalli	N/A	N/A	N/A	N/A
10 th	Mora excelsa	Mora	N/A	N/A	N/A	N/A
Remaining			N/A	N/A	N/A	N/A
TOTAL			.00	.00	.00	.00

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

Item	Value	Complementary information
Minimum diameter (cm) at breast height of trees included in growing stock (X)	2 cm	N/A
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	N/A	N/A
Minimum diameter (cm) of branches included in growing stock (W)	N/A	Branches are not measured
Volume refers to above ground (AG) or above stump (AS)	AG	N/A

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

Table 3c




Category		Net annual increment (m <sup>3</sup> per hectare and year)				
		Forest				
		1990	2000	2005	2010	2015
	Net annual increment	N/A	N/A	N/A	N/A	N/A
	... 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	7864	7846	7836	7824	7800	847	847	847	847	847
	Below ground biomass	1833	1828	1826	1823	1818	197	197	197	197	197
	Dead wood	433	432	432	431	430	47	47	47	47	47
TOTAL		10130.00	10106.00	10094.00	10078.00	10048.00	1091.00	1091.00	1091.00	1091.00	1091.00

Table 3e

Category		Carbon (Million metric tonnes)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Carbon in above ground biomass	3932	3923	3918	3912	3900	424	424	424	424	424
	Carbon in below ground biomass	916	914	913	912	909	99	99	99	99	99
	<i>Subtotal Living biomass</i>	4848	4837	4831	4824	4809	523	523	523	523	523
	Carbon in dead wood	217	216	216	215	215	23	23	23	23	23
	Carbon in litter	93	93	93	93	93	10	10	10	10	10
	<i>Subtotal Dead wood and litter</i>	310	309	309	308	308	33	33	33	33	33
	Soil carbon	1611	1607	1605	1603	1598	174	174	174	174	174
TOTAL		6769.00	6753.00	6745.00	6735.00	6715.00	730.00	730.00	730.00	730.00	730.00

## Tiers

Variable/category	Tier for status	Tier for trend
Total growing stock	Tier 1	Tier 1
Net annual increment	Tier 1	Tier 1
Above ground biomass	Tier 2	Tier 1
Below ground biomass	Tier 2	Tier 1
Dead wood	Tier 2	Tier 1
Carbon in above-ground biomass	Tier 2	Tier 1
Carbon in below ground biomass	Tier 2	Tier 1
Carbon in dead wood and litter	Tier 2	Tier 1
Soil carbon	Tier 2	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	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other
<ul style="list-style-type: none"> <li>• Carbon in above ground biomass</li> <li>• Carbon in below ground biomass</li> <li>• Carbon in dead wood and litter</li> <li>• Soil carbon</li> </ul>	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	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other

## 3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
Total growing stock	Growing stock data has been calculated from biomass data based on a sample. However the assumption is that there will be no change for woodland areas based on assumption in Table 1a	N/A
Growing stock of broadleaved coniferous	N/A	N/A
Growing stock composition	N/A	N/A
Net annual increment	N/A	N/A
Above-ground biomass	Data are based on a sample study	N/A
Below-ground biomass	N/A	N/A

Dead wood	N/A	N/A
Carbon in above-ground biomass	N/A	N/A
Carbon in below-ground biomass	N/A	N/A
Carbon in dead wood	N/A	N/A
Carbon in litter	N/A	N/A
Soil carbon	N/A	N/A

#### Other general comments to the table

Data on growth rate and stocks are presently being researched and analyzed. As the data becomes available, it would be possible to input other data being requested and the data will be more accurate. The difference between 2010 is indeed significant and this is due to a few important changes made to the data sets used. The data sets used in the 2010 report are mostly default data taken from many areas of the tropics including Guyana. However, the data presented here are data taken with great accuracy and most importantly only in Guyana with the exceptional use of the IPCC default carbon conversion factor of 1.3. The data reported in this report are all data collected from 2010 to present. Additionally, the area of forest has also been updated with a high level of precision. These high level accuracy of both forest area cover and biomass/carbon data used in this report is therefore of great precision as they have been collected under strict standard operating procedures; so even though the values may seem high the accuracy is also high.

## 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	Forest Sector Information Report, Guyana	Definitions	2012	Forest Area Allocation
2	Guyana National Land Use Plan	Areas size	2013	Land use and Classification
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

#### 4.2.2 Classification and definitions

National class	Definition
Private Ownership	Includes titled and untitled Amerindian Lands
Public lands	Refers land under the management and control of the Government of Guyana and GFC

Other Forested Land	Refers to land outside of the above two categories.
N/A	N/A

#### 4.2.3 Original data

<b>Social Services</b>	<b>Hectares</b>
Kaieteur National Park	61,392
Iwokrama International Centre for Rainforest Conservation and development	372,190
Kanuku Mountain	609,152
Shell Beach	119,459
Konashen District Community Owned Conservation Area	564,639
<b>Total Protected Areas (inclusive of Conservation and Biodiversity)</b>	<b>1,726,832</b>
5% of total forest area allocated with management plan (5,217,357 ha)	<b>260,868</b>
Upper Essequibo Conservation Concession	82, 102
Moraballi Reserve	5,200
Mabura Reserves	900
Mt Roraima	57,200
Orinduik Falls National Monument	8,546
<b>Biodiversity Area (Proposed protected areas)</b>	<b>153,968</b>
Remaining forests are designated for production.	

#### 4.3 Analysis and processing of national data

## 4.3.1 Adjustment

## 4.3.2 Estimation and forecasting

The forest areas that have been calculated in table 1a are designated production forest and forest identified for protection are classified as multiple use

## 4.3.3 Reclassification

## 4.4 Data

Table 4a



Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	16660	16471	16451	14434	14384
	Multiple use forest	0	151	151	2142	2142

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
1 st	Heart of palm (Amazon Caribbean Ltd)	Manicole Palm	2000	1
2 nd	Forest Lianas/furniture	Kufa and Nibbi	1200	5
3 rd	Orchids/ornamental plants	N/A	N/A	N/A
4 th	Handicraft and ornaments	N/A	N/A	N/A
5 th	Crab oil/ Medicinal	N/A	N/A	N/A
6 th	Living animals/ wild life	N/A	N/A	N/A
7 th	Tree Bark/Dye	N/A	N/A	N/A
8 th	N/A	N/A	N/A	N/A
9 th	N/A	N/A	N/A	N/A

10 th	N/A	N/A	N/A	N/A
TOTAL			3200.00	

2010	
Name of local currency	Guyana dollars

Category
<b>Plant products / raw material</b>
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
<b>Animal products / raw material</b>
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 <sup>3</sup> u.b.)	
	Total wood removals	...of which woodfuel

1990	1065.96	915.96
1991	1060.72	910.72
1992	1071.36	905.36
1993	1168.99	900.99
1994	1309.65	896.45
1995	1374.26	898.16
1996	1357.95	890.45
1997	1458.39	885.19
1998	1288.12	882.12
1999	1334.98	880.98
2000	1168.87	879.87
2001	1188.42	876.42
2002	1165.01	873.01
2003	1210.64	869.64
2004	1332.3	866.3
2005	1360.01	863.01
2006	579.36	31.73
2007	606.8	26.22
2008	491.74	21.06
2009	501.24	21.72
2010	505.57	31.69
2011	554.46	36.79

## Tiers

Category	Tier for status	Tier for reported trend
Production forest	Tier 3	Tier 2
Multiple use forest	Tier 3	Tier 2

## Tier Criteria

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

#### 4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	Forest area available for forest harvesting. • State Forest Permission(SFP) • Wood Cutting Lease(WCL) • Timber Sale Agreements (TSA) • State Forest Exploratory permit (SFEP) • Private forest lands and • Unallocated forest areas	N/A
Multiple use forest	Forest areas identified for Social service – Protected areas: For use in Research, Conservation, and Biodiversity.	N/A
Total wood removals	Total of: • Volume of Logs, Fuelwood, Wattles and Round wood, • Volume of primary lumber, splitwood, plywood, and veneer at 50% recovery	N/A
Commercial value of NWFP	Only data on harvest of Manicole palm and Kuffu/Nibbi are available because of export, however there are other categories that have been commercialized eg, medicine, handicraft, ornamental plants, etc.	N/A

#### Other general comments to the table

The GFC before 2006 was reporting wood fuel in terms of Kilograms and not cubic meters. This is now being closely monitored as can be seen in its FSIR yearly report. The total wood removed for the last few years was between 500,000 to 600,000 cubic meters of which between 25 to 35 thousand is fuel wood.



## 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	Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011)	Area Sizes	July, 2012	Forest area.
2	Forest Sector Information Report, Guyana	Definitions	2012	Forest Area Allocation
3	Guyana National Land Use Plan	Area Sizes	June, 2013	Land use and forest classification
4	N/A	N/A	N/A	N/A

### 5.2.2 Classification and definitions

National class	Definition
Permanent protection forest and biodiversity reserves	For the protection of natural and cultural heritage
Reserve forest	No commercial forestry allowed
Permanent research forest	Scientific research only
N/A	N/A

### 5.2.3 Original data

Data from Guyana's National Land Use Plan shows that as of 2013, 2,142,000 hectares have been designated protected area of which 81,000 is mangrove forest along the coastland.

## 5.3 Analysis and processing of national data

### 5.3.1 Adjustment

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### 5.3.2 Estimation and forecasting

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### 5.3.3 Reclassification

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## 5.4 Data

Table 5a

Categories	Forest area (1000 hectares)
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		1990	2000	2005	2010	2015
CRG	Protection of soil and water	N/A	N/A	N/A	2223	2223
CRG	... of which production of clean water	N/A	N/A	N/A	N/A	N/A
CRG	... of which coastal stabilization	N/A	N/A	N/A	81	81
CRG	... of which desertification control	N/A	N/A	N/A	N/A	N/A
CRG	... of which avalanche control	N/A	N/A	N/A	N/A	N/A
CRG	... of which erosion, flood protection or reducing flood risk	N/A	N/A	N/A	N/A	N/A
CRG	... of which other (please specify in comments below the table)	N/A	N/A	N/A	2142	2142

#### Other

the area allocated to others is the area designated for biodiversity, conservation and research and is not specifically (or primarily) allocated for soil and water protection

Table 5b

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015
Ecosystem services, cultural or spiritual values	N/A	N/A	N/A	2142	2142
...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	2142	2142

Tiers

Category	Tier for reported trend	Tier for status
Protection of soil and water	Tier 3	Tier 1
Ecosystem services, cultural or spiritual values	Tier 3	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	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other
<ul style="list-style-type: none"> <li>• Cultural or spiritual values</li> <li>• Public recreation</li> <li>• Spiritual or cultural services</li> <li>• Other</li> </ul>	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	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other

## 5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	N/A	N/A
Production of clean water	N/A	N/A
Coastal stabilization	Mangrove forest along the coastline has been designated protected area	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	Areas set aside for public recreation are more of non forest area	N/A

Carbon storage or sequestration	N/A	N/A
Spiritual or cultural services	N/A	N/A
Other ecosystem services	the area allocated to others is the area designated for biodiversity, conservation and research and is not specifically (or primarily) allocated for soil and water protection and other ecosystem service	N/A
<b>Other general comments to the table</b>		
N/A		

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

Documents for this question:

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

### 6.1 Categories and definitions

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

### 6.2 National data

#### 6.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011)	Area Sizes	July 2012	Forest area.
2	Forest Sector Information Report, Guyana	Definitions	2012	Forest Area Allocation
3	Guyana National Land Use Plan	Area size	June 2013	Land use and forest classification
4	N/A	N/A	N/A	N/A

#### 6.2.2 Classification and definitions

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

#### 6.2.3 Original data

**Data taken from National Land Use Plan for Guyana.**

<b>Social Services</b>	<b>Hectares</b>
Kaieteur National Park	61,392
Iwokrama International Centre for Rainforest Conservation and development	372,190
Kanuku Mountain	609,152
Shell Beach	119,459
Konashen District Community Owned Conservation Area	564,639
<b>Total Protected Areas (inclusive of Conservation and Biodiversity)</b>	<b>1,726,832</b>
5% of total forest area allocated with management plan (5,217,357 ha)	<b>260,868</b>
Upper Essequibo Conservation Concession	82, 102
Moraballi Reserve	5,200
Mabura Reserves	900
Mt Roraima	57,200
Orinduik Falls National Monument	8,546
<b>Biodiversity Area (Proposed protected areas)</b>	<b>153,968</b>

5% of total forest area allocated with management plan (5,217,357 ha) - 260,868 is area found within forest concessions and not within protected areas.

### 6.3 Analysis and processing of national data

#### 6.3.1 Adjustment

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#### 6.3.2 Estimation and forecasting

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## 6.3.3 Reclassification

## 6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Conservation of biodiversity	0	151	151	1880	1880
	Forest area within protected areas	N/A	151	151	1880	1880

## Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	Tier 3	Tier 2
Forest area within protected areas	Tier 3	Tier 2

## Tier criteria

Category	Tier for status	Tier for reported trend
<ul style="list-style-type: none"> <li>Conservation of biodiversity</li> <li>Forests within protected areas</li> </ul>	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	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other

## 6.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Conservation of biodiversity	Protected areas that have been proposed and/or identified and allocated, and biodiversity reserves of allocated production forest for large concessions	N/A
Forest area within protected areas	Total protected area as detailed on table 6.2.3, excluding areas designated in allocated concessions	N/A

## Other general comments to the table

N/A



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

Documents for this question:

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

### 7.1 Categories and definitions

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

### 7.2 National data

#### 7.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forest Sector Information Report, Guyana	Definitions	2012	Information of forest sector
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

#### 7.2.2 Classification and definitions

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

#### 7.2.3 Original data

--

### 7.3 Analysis and processing of national data

#### 7.3.1 Adjustment

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## 7.3.2 Estimation and forecasting

## 7.3.3 Reclassification

## 7.4 Data

Table 7

Scientific name of woody invasive species	Forest area affected (000 ha)	
	2005	2010
N/A	0	0
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
Total	0	0

## Tiers

Category	Tier for status	Tier for reported trend
Invasive species	Tier 3	Tier 2

## Tier Criteria

Category	Tier for status	Tier for reported trend
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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	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other
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### 7.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Invasive species	No report or record of invasive species in relation to wood	N/A

#### Other general comments to the table

As to date no invasive species has been identified that are non-native to any particular ecosystem and whose introduction has cause any socio-cultural, economic or environmental harm or harm to human health.

## 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	Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011)	July, 2012	July, 2012	Forest area. Fire damage
2	Hydro Metrological Office - presentation	Weather report	2013	Rainfall pattern
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

#### 8.2.2 Classification and definitions

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

## 8.2.3 Original data

Data was extracted from FRA 2015 external report

## 8.3 Analysis and processing of national data

## 8.3.1 Adjustment

## 8.3.2 Estimation and forecasting

## 8.3.3 Reclassification

## 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	0.86	N/A	0.52	N/A	1.8	N/A	0.35	N/A	0.17	N/A
	... of which forest area burned	0.21	N/A	0.25	N/A	0.13	N/A	0.06	N/A	0.1	N/A
Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	0.4	N/A	1.11	N/A	0.54	N/A	0.29	N/A	0.63	N/A
	... of which forest area burned	0.15	N/A	0.04	N/A	0.42	N/A	0.02	N/A	0.15	N/A

Table 8b

Outbreak category	Description/name	Year(s) of latest outbreak	Area damaged (000 hectares)
Severe weather event	Severe drought - El Nino	May 2009 to Feb 2010	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

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"> <li>• Insects</li> <li>• Diseases</li> <li>• Severe weather events</li> </ul>	Tier 2	Tier 2

## Tier criteria

Category	Tier for status	Tier for reported trend
Burned area	<b>Tier 3</b> : National fire monitoring routines <b>Tier 2</b> : Remote sensing surveys <b>Tier 1</b> : Other	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other

<ul style="list-style-type: none"> <li>• Insects</li> <li>• Diseases</li> <li>• Severe weather events</li> </ul>	<p><b>Tier 3</b> : Systematic survey (e.g. via inventory or aerial damage assessment)  <b>Tier 2</b> : Management records <b>Tier 1</b> : Other</p>	<p><b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other</p>
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### 8.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Burned area	Data taken from FRA 2015 external report	N/A
Insects	N/A	N/A
Diseases	N/A	N/A
Severe weather events	N/A	N/A

Other general comments to the table
<p>There is no data being collected on fires and area burnt.</p>

## 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	50

Tiers

Category	Tier for reported trend
Reduction in canopy cover	Tier 3

Tier criteria

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

Comments

Category	Comments related to data definitions etc
Reduction in canopy cover	Data is based on reduction in forest area for the period as detailed in the Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011). National Coverage conducted using 5m RapidEye Imagery with Landsat Imagery. Coverage for 2012 conducted with wall to wall mapping of 5m resolution RapidEye imagery, complemented with ground truthing.

Other general comments

<p>Guyana does not have data on reduction of canopy cover as detailed by the definition, however the MRVS reported a loss of forest area of approximately 50,000 hectares for the period 2000 to 2010, which is what is reported.</p> <p>The value of 3,026,150 hectares that is being reported by FRA is questionable, because our data and analysis of from harvesting practices being implemented in Guyana does not support this figure.</p> <p>Our practice of selective harvesting, Reduced Impact Logging (RIL) and implementation of the CoP for Timber harvest results in on the average 5 to 8 cubic metre of logs being harvested from one hectare, when the allowable</p>
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volume according to SFM practices is 20 cubic meter. This reduction in harvested volume, coupled with natural regeneration do not lend to this figure that is being reported by FRA.

## 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	Forest Sector Information Report, Guyana	Definitions	2012	Information on forestry sector
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

#### 10.2.2 Classification and definitions

National class	Definition
Policies	Policies are principles or rules to guide decisions and achieve rational outcomes within a specific sector or an organization
Legislation and Regulations	Laws created and approved by the parliament of Guyana.
N/A	N/A
N/A	N/A

#### 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	no

### 10.4 Comments

Variable / category	Comments related to data definitions etc
Policies supporting sustainable forest management	There are many policies established for the forestry sector. The one's that support SFM are: national Forest policy Statement of 2011 and National Forest Plan of 2011, as well as the Low carbon development Strategy (LCDS). The Government policies and LCDS encourages privately owned forest in Amerindian lands to implement SFM
Legislation and regulations supporting sustainable forest management	The main regulation is the Code of Practice for Timber Harvest, which is monitored through operational procedure of the GFC, which are supported by the Guyana Forestry Commission Act of 2001. However, Amerindian lands which are considered private lands are not regulated under the CoP, However they have an opportunity to implement the CoP and be considered under the LCDS. Legislation and regulations in relation to SFM are not mandatory for Amerindian lands

#### Other general comments

The same policies, legislation and regulations are applicable at all the levels specified in Table 10 except in the case of Amerindian titled/private lands, where the owner do not have to abide with the legislature and regulations.

However, the GFC has been collaborate with them as part of the LCDS programme in helping them to implement SFM practices and any other area on request.

The Forestry sector is seen as having the potential to facilitate rapid development in Guyana hence there is a focus on adequate policies, legislation and regulations at all level of operations.

## 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	Guyana National Forest Policy Statement of 2011	2011	Identify policies in relation to stakeholders participation
2	Guyana National Forest Plan of 2011	2011	Identify the mechanisms for stakeholder participation
3	N/A	N/A	N/A
4	N/A	N/A	N/A

Table 11

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

Category	Comments related to data definitions etc
National stakeholder platform	In addition to national stakeholders' consultation country wide, there are many national forums that promote stakeholders participation in forestry related matters: Natural Resources Committee of the National Assembly • Multi-Stakeholders Committee meeting • FPA and GMSA (Stakeholders representative organisation) involvement in management Boards of GFC, FTCI and FPDMC • National Steering Committee for Community Forestry Organisation. • National Technical Working Group for EU FLEGT • National Toshao Council

#### Other general comments

1.	There is a Natural Resources Committee established in the National Assembly that can question all aspects of natural resource management in Guyana.
2.	Stakeholders representatives from private sector are represented at various forums and boards associated with forestry: MNRE, GFC, FPDMC, FTCI etc.

3. The GFC board also host their monthly meeting in outlying areas where stakeholders are invited to interact and discuss the forestry sector,

## 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	Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011)	Area Sizes	July 2012	Forest area.
2	Forest Sector Information Report, Guyana	Definitions	2012	Forest Area Allocation
3	Guyana National Land Use Plan	Area size	June 2013	Land use and forest classification
4	N/A	N/A	N/A	N/A

#### 12.2.2 Classification and definitions

National class	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. Consist of Forested state forest area and protected areas.
N/A	N/A
N/A	N/A
N/A	N/A

## 12.2.3 Original data

Land class	(Area '000' ha) as of 2009		
	Non forest	Forest	Total
State forest area	460	12,342	12,801
State land	1,692	3,084	4,776
Iwokrama	7	343	350
Kaiteeur park	0.6	62	63
Titled Amerindian land	591	2547	3,138
Total area (ha)	2,731	18,398*	21,129

\* area of water bodies included

## 12.3 Analysis and processing of national data

## 12.3.1 Adjustment

The data as of 2011 shows a total forest area of 18,398 inclusive of water bodies. There is no evidence or policy to show any conversion to hence it is assumed that all will be permanent forest land use. However, small change in area is expected due to infrastructural development

## 12.3.2 Estimation and forecasting



## 12.3.3 Reclassification

## 12.4 Data

Table 12

Categories	Forest area 2010 (000 ha)
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	Forest area intended to be in permanent forest land use	16576
	... of which permanent forest estate	2142

## Tiers

Category	Tier for status
Forest area intended to be in permanent forest land use	Tier 2
Permanent forest estate	Tier 3

## Tier Criteria

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

## 12.5 Comments

Category	Comments related to data definitions etc
Forest area intended to be in permanent forest land use	All forest area at this point in time for there is no evidence or policy to show any conversion is identified, hence it is assumed that all will be permanent forest land use.
Permanent forest estate	Forest that has not been identified for Protection and conservation is considered to be for permanent forest estate.

## Other general comments

The area of water bodies is removed from total land class of forest to give forested area because the water bodies constitute a part of all the land use categories

### 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	Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011)	Area size	July 2012	Forest Area
2	Forest Sector Information Report, Guyana	Forest Data and Statistics	2012	Information on forestry sector
3	N/A	N/A	N/A	N/A
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	2012	yes		yes			
Other field assessments	100	2012	yes			yes		yes
Updates to other sources	N/A	N/A						
Expert estimate	N/A	N/A						

Table 13b

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

#### Other type of forest reporting

1. Volume and species harvested 2. Forest inventory by TSA's

### 13.4 Comments

Category	Comments
Forest inventory	All TSA's and WCL's have to conduct inventory of the forest area before permission is grant for them to Harvest
Other field assessments	The Forest Monitoring Department of GFC continuously monitors and reports on all forest concession SFM practices.
N/A	N/A

#### Other general comments

1. The Forest Monitoring Department of GFC continuously monitors and reports on all forest concession SFM practices.
2. Concessionaires report on volume and species on permits, without which they cannot remove products from concession. GFC has a database which it uses to monitor each concessionaire.
3. All TSA's and WCL's have to conduct inventory of the forest area and submit to GFC as a part of their management plan before permission is grant for them to harvest.

4. Minimum diameter for any tree that can be cut is 35 cm and above.

## 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	Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011)	Area Sizes	July 2012	Forest area.
2	Forest Sector Information Report, Guyana	Definitions	2012	Forest Area Allocation
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	7252
... of which for production	5525
... of which for conservation	1727

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

<b>Percent of area under forest management plan that is monitored annually</b>	<b>100</b>
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## Tiers

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

## Tier criteria

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

## 14.4 Comments

Category	Comments
Forest area with management plan	TSA's, WCL and Protected areas
Percent of area under forest management plan that is monitored annually	GFC would have permanent staff on location for TSA's and WCL's to continuously monitor Management plans. Protected areas are monitored by Protected Areas Commission
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	no

Tiers

Category	Tier for status
Type of stakeholder inputs	Tier 3

Tier criteria

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

### 15.2 Comments

Category	Comments
Stakeholder inputs	Stakeholder's inputs are documented in the minutes of the meeting where the stakeholders are represented.
N/A	N/A
N/A	N/A

Other general comments

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

Documents for this question:

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

### 16.1 Categories and definitions

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

### 16.2 Data

Table 16a













International forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	FSC	0	0	0	0	0	0	570
	PEFC	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	0	371.68	371.68	371.68	371.68	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	
		0	0	0	0	0	0	
		0	0	0	0	0	0	
		0	0	0	0	0	0	

## Tier criteria

Category	Tier for status
<b>International</b> 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
<b>Domestic</b> 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
<b>International</b> forest management certification	Tier 3
<b>Domestic</b> forest management certification	Tier 3

## 16.3 Comments

Category	Comments related to data definitions etc
Certified forest area using an international forest management certification scheme	Companies operating in export market pursued FSC certification, but gave up at latter stage. They are now working towards legal verification certification
Domestic forest management certification	There is no domestic forest management certification

## Other general comments

Data is in country data based on what was reported by these 2 companies. One was briefly certified in 2006 after which it lost certification and the other from 2008 to 2011 and then it ceased operation.
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## 17. How much money do governments collect from and spend on forests?

Documents for this question:

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

### 17.1 Categories and definitions

Category	Definition
Forest revenue	All government revenue collected from the domestic production and trade of forest products and services. For this purpose revenue include: <ul style="list-style-type: none"> <li>• <u>Goods</u> : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products.</li> <li>• <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.</li> </ul>
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	GFC's Financial Statements	Revenues and Expenditures	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

### 17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	452000	510000	620000
Public expenditure on forestry	264000	420000	490000
	2000	2005	2010
Name of Local Currency	Guyana dollar	N/A	N/A

**17.4 Comments**

Category	Comments related to data definitions etc
Forest revenue	Revenue generated by GFC through concession fees, royalty, permit and licensing fees, etc.
Public expenditure on forestry	Expenditure of GFC in relation to managing the forestry sector (Harvesting and processing operations, training, marketing, REDD+ activities)
Other general comments	Does not include Government expenditure in relation to training at University and College

Other general comments

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

Documents for this question:

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

### 18.1 Categories and definitions

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

### 18.2 National data

## 18.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forest Sector Information Report, Guyana	Area size	2012	Forest Area Allocation
2	Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011)	Area Sizes	July 2012	Forest area.
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
Private Ownership	Includes titled and untitled Amerindian Lands
Public lands	Refers land under the management and control of the Government of Guyana.
Other Forested Land	Refers to land outside of the above two categories.
N/A	N/A

## 18.2.3 Original data

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## 18.3 Analysis and processing of national data

## 18.3.1 Adjustment

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## 18.3.2 Estimation and forecasting









Forest area as calculated from Table 1a was used to determine data calculated. Amerindian lands are the only land considered as private and all other considered public.
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## 18.3.3 Reclassification

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## 18.4 Data

Table 18a

Categories		Forest area (1000 hectares)			
		1990	2000	2005	2010
	Public ownership	16660	16622	16602	14029
	... of which owned by the state at national scale	16660	16622	16602	14029
	... of which owned by the state at the sub-national government scale	0	0	0	0
	Private ownership	0	0	0	2547
	... of which owned by individuals	0	0	0	0
	... of which owned by private business entities and institutions	0	0	0	0
	... of which owned by local, tribal and indigenous communities	0	0	0	2547
	Unknown ownership	0	0	0	0
TOTAL		16660.00	16622.00	16602.00	16576.00

## Tiers

Category	Tier for status	Tier for reported trend
Public ownership	Tier 3	Tier 2
Private ownership	Tier 3	Tier 3
Unknown ownership	Tier 2	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	<b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Public Administration	16660	16622	16602	14029
Individuals	0	0	0	0
Private companies	0	0	0	0
Communities	0	0	0	0
Other	0	0	0	0
TOTAL	16660.00	16622.00	16602.00	14029.00

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

### 18.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Public ownership	All forest under the control of Government/GFC	N/A
Private ownership	All Amerindian lands	N/A
Unknown ownership	N/A	N/A

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Management rights	N/A	N/A
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**Other general comments to the table**

Forest areas is classified as public land that is leased but under the control of GFC, and Amerindian lands as privately owned.



## 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	Forest Sector Information Report, Guyana	Data and statistics of forestry sector	2012	Employment estimates – Table 3
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

#### 19.2.2 Classification and definitions

National class	Definition
Employment in forestry	Persons involved in activities related to production of goods derived from forests harvesting.
N/A	N/A
N/A	N/A
N/A	N/A

#### 19.2.3 Original data



Full time employment within the forestry sector.			
Activity	2011	2012	% Change
Logs	12,852	12,112	(5.7%)

Sawmilling	3,680	4,200	14.1%
Timber Dealership (Lumberyards)	1,460	1,377	(5.6%)
Plywood and Veneer	275	275	0
Manicole Palm	530	725	37%
Other*	3,005	3,024	0.6%
<b>Total</b>	<b>21,954</b>	<b>21,713</b>	<b>(1.1%)</b>

\* *Other: includes activities in Furniture, Building Components, Craft, Utensils/Ornaments, Firewood, Charcoal and Conservation.*

### 19.3 Data

Table 19

Category		Employment (000 years FTE)			
		1990	2000	2005	2010
	Employment in forestry	N/A	N/A	23.6	21.7
	... 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 shows that on the average, about 13 thousand persons are employed in logging or forest harvest operations. Total employment within sector is between 21 to 25 thousand persons.	N/A

#### Other general comments to the table

Data also shows employment in relation to value adding processes. Total employment within sector is between 21 to 25 thousand persons.

## 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)	8886	Guyana dollar	2012

### 20.3 Comments

Category	Comments
Gross value added from forestry (at basic prices)	The contribution of the forestry sub sector to GDP has varied from 3.0 to 4.5% in the last decade

Other general comments

<p>Categories of forest products that make up the GDP are logs, roundwood, splitwood and sawn wood.</p> <p>Other areas of value-added products are covered under manufacturing.</p>
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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	Guyana REDD+ Monitoring Reporting & Verification System (MRVS) Interim Measures Report (01 October 2010 – 31 December 2011)	Area Sizes	July, 2012	Forest area.
2	Forest Sector Information Report, Guyana	Definitions	2012	Forest Area Allocation
3	Guyana National Land Use Plan	Area size	June 2013	Land use and forest classification
4	Guyana Low Carbon Development Strategy	Forest policy	March 2013	Forest future

### 21.3 Data

Table 21a

Category	Forest area (000 ha)	
	2020	2030
Government target/aspiration for forest area	16526	16526

Table 21b

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

### 21.4 Comments

Category	Comments
Government target/aspiration for forest area	The Government of Guyana would like to maintain the forested area based on its commitment to a LCDS economy, with limited forest change for development of infrastructure eg, roads. Payment for Carbon and SFM practices in harvesting is the focus. There is also expected to be an increase in Mangrove forest because of replanting.
Forests earmarked for conversion	Any indication of conversion of forest is detailed under development of roads.

Other general comments

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