

GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

Suriname

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 Foundation for Forest Management and Production Control (SBB) is the institution in Suriname that is responsible for the reporting for Global Forest Resources Assessment 2015. In order to complete this reporting it is necessary to consult other forestry related Ministries, Institutions and organizations that have the co-responsibility for good management of the forest of the country. It is very important to have insight in long term national planning on macro level that can lead to deforestation.

With about 94% of the country still covered with natural tropical rain forest, Suriname is one of the most forested countries in the world. National efforts have been made to conserve and to protect the forest and to promote sustainable forest management in the country. The designation of 2.3 million ha of the country (14% of the total land area) as protected areas and the development of the Celos Management System as a tool for the sustainable utilization of the 4-5 million ha of the production forest are evidence of the country's effort to keep the natural forest intact.

The manner on which logging is being practiced in the production forest, within the so called “forestry belt”, minimizes the damages on the forest as a result that the forest cover remains even after the timber has been harvested. Developments in other sectors, than the forestry sector leads to deforestation. For instance due to, legal and illegal gold mining, man-made hydropower lake, agriculture including slash and burn, road construction etc.

In order to further strengthen the sustainable use of the forest, capacity has been build on several areas of sustainable forest management, taking in to account climate change and REDD + related actions. Within this framework among others, the forest cover map of Suriname 2010, was produced by SarVision, in cooperation with local institutions, the Japan Aerospace Exploration Agency (JAXA), the Wageningen University of the Netherlands and Conservation International and with financial assistance of the German Development Bank (KFW). A forest carbon assessment project funded by WWF, Tropenbos International Suriname and the government of Suriname has been implemented in ther period 2010-2011. During this project capacity was built and a preliminary dataset constructed, providing understanding of the carbon storage in the different components of the country’s forest.

An other important development within the country is that in a participatory process, Suriname has revised her REDD readiness preparation proposal (RPP). After presentation by Suriname at the World Bank the RPP has been approved. The implementation of the actions incorporated in the RPP will lead to capacity building for the total forest sector, including SFM and the establishment of National Forest Monitoring System (NFMS).

As one of the instruments towards this NFMS, Suriname is implementing a project called, ‘Monitoring Deforestation, Logging and Land Use Change in the Pan Amazonian Forest’. This project is carried out in collaboration with the Amazon Cooperation Treaty Organization (ACTO) member countries and funded by the PS ACTO, BMZ, DGIS/GIZ and ITTO. A remote sensing room has been established in Suriname for the monitoring of the forest cover, with modern technology including satellite images and a software developed by Brazil. This project has also a capacity building component. Currently the unit is focussing on deforestation monitoring, but subsequently, also forest degradation and land cover changes will be included.

Another instrument towards the NFMS, is the execution of a comprehensive national forest inventory. On this specific area several actions have taken place, with the result that suriname is currently carrying out a pilot project on national forest inventory with the use of modern technology provided by the Austrian institution Anrica. Based on the results of this pilot national forest inventory, a national forest inventory will be carried out in the near future.

To further strengthen the forest monitoring, on regural basis capacity building takes place at the Foundation for Forest Management and Production Control (SBB). SBB is the institution in Suriname responsible for the sustainable utilization of the production forest. To be physical present in the field, the crew of forest guards is expanded and more forest guardposts has been setup on strategic locations in the forest. The GIS division of this institution is strengthened and efforts are being made to further develop the log tracking system (Logpro), with the possibilty of on- line data recording. One of the objectives of the national forest policy is to increase the contribution of the timber sector to the national economy. In this context, efforts has been made and the national timber production and earnings from the timber export has been doubled compared with two years ago.

Desk Study?

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

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

Documents for this question:

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

1.1 Categories and definitions

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

1.2 National data

1.2.1 Data sources

References to sources of information	Variables	Years	Additional comments
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1	National Development Plan 2012 - 2016	National Planning	2012 - 2016	Multi annual national planning document, within this document 5 year planning of the government is incorporated, with the indication of possibly forest areas that will be converted to other type of land use.
2	Forest cover map of Suriname 2010	Forest types	2010	This map shows an overview of different forest types for the year 2010, based on ALOS Palsar satellite images.
3	The Observation Room of Suriname, located at the Foundation for Forest Management and Production Control	Forest Area	2000 2009	This unit has been established within a ACTO initiated project; Monitoring deforestation, logging and land use change in the Pan Amazonian forest. ACTO: The Amazon Cooperation Treaty Organization, is an international organization aimed at the promotion of sustainable development of the Amazon Basin. Its member states are Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela.
4	N/A	N/A	N/A	N/A

1.2.2 Classification and definitions

National class	Definition
Forest	Land spanning more than 1 hectares with trees higher than 5 meters and a canopy cover of more than 30 percent or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.
Shifting cultivation	A traditional land use of the forest by forest based communities, whereby the forest is temporarily converted to non-forest, whereafter within a period of 15 years regenerates to forest. This land cover type is classified as forest.
N/A	N/A
N/A	N/A

1.2.3 Original data

In 2012 Suriname established a remote sensing (RS) unit, based in the Foundation for Forest Management and Production Control (SBB). This was done within the framework of the ACTO project *Monitoring Deforestation, Logging and Land Use Change in the Pan Amazonian Forest*. One of the first activities

carried out in the RS unit was the production of a basemap of 2000, using Landsat images and TerraAmazon, a freeware distributed by the Brazilian Institute for Space Research (INPE). ACTO: Amazon Cooperation Treaty Organization, is an international organization aimed at the promotion and sustainable development of the Amazon Basin. Its member states are Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela.

The original results are displayed within the following table:

National class	Area (1000 hectares)
Forest	15055
Clouds (no data)	176
Non-forest	667
Shifting cultivation	167
Inland water bodies	316

Subsequently, the deforestation between 2000 and 2009 was monitored, using the same methodology, finding the following results for 2009:

National class	Area (1000 hectares)
Forest	14812
Clouds (no data)	362
Non-forest	666
Shifting cultivation	190
Deforestation	30
Land acquisition	12
Inland water bodies	316

The area of inland water bodies differs significantly from the area indicated by FAOSTAT. This might be caused by the inclusion of two hydropower lakes in the FAOSTAT figure that were planned but not constructed.

1.3 Analysis and processing of national data

1.3.1 Adjustment

As the national country area (16382 km²) is equal to the country area as indicated by FAOSTAT, there is no need for adjustments.

1.3.2 Estimation and forecasting

Change of Forest area

Taking into consideration long term national planning, forested areas will be converted to other types of land use, with the decline of forest cover as a result. Main projects and project ideas that are expected to lead to forest loss in the longer term are:

Infrastructure: Expansion of the existing network of roads. A north – south running road is planned from the Atjonie area to the Border of Brazil with the length of about 300 km. A 110 km long road will be constructed from Paranam to the Nassau area. Furthermore a 60 km road will be constructed from Nickerie to Apoera. These big projects will lead to increased economic activities in the until now inaccessible forested areas, resulting in more forest loss.

Sugar cane plantation: The state oil company has initiated a bio-energy project with sugar cane. The idea is to establish sugar cane plantations of 7,500 ha, for which an area of 1,500 ha marsh forest will be converted into agriculture land.

House building project: The government has initiated a house building project for the construction of about 5,000 houses until 2016 in the coastal area as well as in the interior, which might also lead to deforestation.

Gold mining: The government has signed agreements with two multinational companies for large scale gold mining projects in the eastern part of the country. An estimated area of 2,300 ha will be deforested due to these big mining projects. A lot of illegal gold mining is taking place within the forest that leads to small patches of forest loss.

Palm oil: The government has signed in 2004 an agreement with a Chinese company for the implementation of a palm oil project in the eastern part of the country. The designated area is 50,000 ha. Due to social reasons it is until now not possible to execute this project and the proceed is not clear. Another area of 40,000 ha is already designated for the setup of palm oil plantations in collaboration with an Indian company.

Paddy: The existing paddy cultivation area will be expanded, for which 30,000 ha of swamp forest will be cleared.

Cattle, sheep and goat breeding: In the interior, a cattle, sheep and goat breeding project will be initiated on an area of 10,000 ha.

Despite these existing plans, the data provided here are conservative, assuming the historical trends of low deforestation to be continued in the future.

Suriname is in its early readiness phase for REDD+ and considers it a planning tool for sustainable development.

1.3.3 Reclassification

A cloud correction was carried out on the original results displayed in 1.2.3, by distributing the area covered with clouds over the other classes, considering the proportions of these classes.

Thereafter a reclassification was carried out:

For the 2000 basemap:

National classes	FRA Categories			Total
	Forest	Other land	Inland water body	
Forest	100%			100%
Shifting cultivation	100%			100%
Non-forest		100%		100%
Inland water body			100%	100%

Based on the results of the deforestation monitoring between 2000 and 2009, the changes in the forest cover were determined. These changes are caused by land loss (on land with forest cover that turned into hydrography due to coastal dynamics) and human induced deforestation.

Coastal dynamics causes the effective country area to change. Nevertheless the data was adjusted to maintain the official country area.

1.4 Data

Table 1a













Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
	Forest	15430	15391	15371	15351	15332
	Other wooded land	0	0	0	0	0
	Other land	636	675	695	715	734
	... of which with tree cover	N/A	N/A	N/A	N/A	N/A
	Inland water bodies	316	316	316	316	316
	TOTAL	16382.00	16382.00	16382.00	16382.00	16382.00

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	0	0	0	0
	... of which afforestation	0	0	0	0	0	0	0	0
	... of which natural expansion of forest	N/A	N/A	N/A	N/A	0	0	0	0
	Deforestation	N/A	3.9	3.9	3.9	N/A	N/A	N/A	N/A
	... of which human induced	N/A	3.4	3.4	3.4	N/A	N/A	N/A	N/A
	Reforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which artificial	0	0	0	0	0	0	0	0

Tiers

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

Tier criteria

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

1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends

Forest	The definition of forest used in this Forest Resource Assessment has not yet been formally approved . Nevertheless it is used for monitoring purposes (amongst others for the pilot national forest inventory, and the monitoring of the forest cover with satellite images)	NA
Other wooded land	No data is available on the exact coverage of other wooded land, but this class is not assumed to be significant. Therefore a zero value is filled in Table 1a.	NA
Other land	NA	NA
Other land with tree cover	NA	NA
Inland water bodies	There are seven main rivers in the country, originating in the hilly to mountainous interior convey about 4,800 m ³ /s fresh water annually into the Atlantic Ocean, which is about 30% of the annual rainfall. There is also one hydropower lake with a surface of 150,000 ha. The area of inland water bodies is significantly different as the one indicated by the UNstat. This might be caused by the inclusion of two projected hydropower lakes, which have not yet been constructed. No official data is available yet on the area of inland water bodies, but it is estimated to be ca. 316,100 ha instead of 782,000 ha.	NA
Forest expansion	NA	NA
Deforestation	The conversion of forest to other land use or the longterm reduction of the tree canopy cover below the minimum 30 percent threshold.	NA
Reforestation	NA	NA

Other general comments to the table

Clouds and clouds shadows (see original data 1.2.3) on the satellite images are classified as clouds which means no data. It was therefore not possible to define if those areas are forested or not in this first phase. Through expert opinion and experience in the field the data could be defined. Land acquisition takes place naturally in the coastal area due to the sedimentation in the coastal area. This is a dynamic process and the form of coastal area is due to changes. The numbers presented here are outputs of the two forest cover maps. In 2014 we will validate the maps and publish official deforestation numbers. This might cause the abovementioned numbers to differ slightly in our next reporting for FRA 2020.

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 <i>outside</i> 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	National Forest Policy of Suriname	Policy	2003	National Forest Policy of Suriname, this document indicates the policy on which the development of the total forest sector is based.
2	Preliminary vegetation classification map	Vegetation class	1998	This map was produced by CELOS/Narena, and is regularly updated.

3	Control and monitoring activities of the SBB	Timber harvesting activities, harvested areas	2000-2008	The timber harvesting activities are recorded and processed in the SBB database with GIS and GPS. LogTracking system (LogPro) developed and used by the SBB.
4	Suriname, Second National Communication to the United Nations Framework Convention on Climate Change	GHG-emissions	2013	Long term national planning is indicated in this document, with the indication of increase/decline of the forest area and there effect on the GHG emmissions.
5	The Forest Cover Monitoring Unit (FCMU) of Suriname, located at the Foundation for Forest Management and Production Control (SBB).	Forest Area	2000-2009	This unit has been established within an Amazon Cooperation Treaty Organization (ACTO) initiated project; Monitoring deforestation, logging and land use change in the Pan Amazonian forest. ACTO: The Amazon Cooperation Treaty Organization, is an international organization aimed at the promotion of sustainable development of the Amazone Basin. Its member states are Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela.

2.2.2 Classification and definitions

National class	Definition
Shifting cultivation	A traditional land use of the forest by forest based communities, whereby the forest is temporarily converted to non-forest, whereafter within a period of 15 years it regenerates to forest. This land cover type is classified as forest. Here it will be classified as naturally regenerated forest.
N/A	N/A
N/A	N/A
N/A	N/A

2.2.3 Original data

Around 13,000 ha of plantations have been established in the period 1954-1977, with both pine and broadleaf species.

The area of other naturally regenerated forests has been estimated from production data (see below), as well as from the monitoring results of the FCMU within the Foundation for Forest Management and Production Control (SBB), where two maps for respectively 2000 and 2009 were compiled. The remainder of the natural forests are considered primary as the human impact is very low.

2.3 Analysis and processing of national data

2.3.1 Adjustment

2.3.2 Estimation and forecasting

Due to the manner on which logging activities are practiced in Suriname (selective logging), it is not necessary to do artificial generation (forest planting) within the production forest. The forest utilization is very low (an average of 7 m³ per ha), and the rehabilitation of the logged areas are based on natural regeneration.

To estimate the area affected by logging, the real area logged between 2008-2012 was extracted from the GIS database of the Foundation for Forest Management and Production Control (SBB). Based on these areas and the production for those years, an average productivity rate per ha was calculated. This rate was then used to estimate the area affected before 2008.

Year	Production (m3)	Area (ha)
1990	115,898	15,584
1991	106,506	14,321
1992	121,801	16,378
1993	98,077	13,188
1994	100,593	13,526
1995	108,763	14,624
1996	213,622	28,724
1997	182,576	24,549
1998	145,070	19,506
1999	93,915	12,628
2000	176,461	23,727

2001	162,308	21,824
2002	153,812	20,682
2003	155,461	20,904
2004	159,412	21,435
2005	180,891	24,323
2006	193,056	25,959
2007	166,365	22,370
2008	197,394	16,327
2009	206,975	29,395
2010	246,158	40,388
2011	365,715	56,160
2012	435,549	79,957

From the year 2008 the areas are extracted from the GIS database of SBB. From 1998 the figures have been estimated based on the GIS data of the SBB while before 1998 the areas were estimated only based on field activities and expert opinions.

It should be noted that this might cause a slight overestimation, because several areas might have been logged multiple times between 1990 and 2012.

Based on Landsat images, doing a visual interpretation on a scale of 1:10,000, and a Minimum Mapping Unit of 1 ha, a total area affected by shifting cultivation of 169,225 ha was found for 2000 and 194,025 ha for 2009. This information still has to be validated and might need some adjustments in the future.

An old agriculture plantation map was overlaid with the forest cover data of 2000. The forest cover within this area can be seen as naturally regenerated forest, as these agriculture plantations were abandoned about 100 years ago. The forest had enough time to regenerate, but still signs of human activity are visible. In total 288,841 ha of forest could be found on these former plantations.

The mining areas (gold and bauxite) are being rehabilitated by tree planting. In the recent years about 1,150 ha of the mining areas have been rehabilitated.

Furthermore a pilot project is executed within the coastal area by the planting of 1.3 ha of mangrove for coastal protection. A positive effect of this project is that it will lead to natural regeneration of the mangrove forest in the surrounding area.

2.3.3 Reclassification

Based on the area logged, and the prognoses of 15% growth for the coming two years, the following results can be found:

	Area subjected to logging (ha)
1990-1999	173,028
2000-2009	226,945
2010-2015	410,375

2.4 Data

Table 2a







Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Primary forest	14986	14742	14590	14422	14019
	Other naturally regenerated forest	431	636	768	916	1300
	... of which of introduced species	0	0	0	0	0
	... of which naturalized	0	0	0	0	0
	Planted forest	13	13	13	13	13
	... of which of introduced species	7	7	7	7	7
TOTAL		15430.00	15391.00	15371.00	15351.00	15332.00

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
224	0	N/A	271	0	N/A	384	0	N/A

Table 2c

Categories	Area (000 hectares)
------------	---------------------

	1990	2000	2005	2010	2015
Mangroves (forest and OWL)	114.8	114.6	114.6	114.4	114.2
... of which planted	0	0	0	0.0013	0.0013

Tiers

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

Tier Criteria

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

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	This might be an overestimation because areas logged before 1990 were not included. On the other hand, there might be an overlapping between the different types of other naturally regenerating forests.	NA
Other naturally regenerating forest	This comprises: previous agricultural plantations, shifting cultivation areas and logged areas within the concessions. There might also occur forest degradation in areas along gold mining fields, but no area data is available.	The trend is determined based on an average productivity, measured in a GIS-system and based on extensive field data.
Planted forest	NA	NA

Mangroves	<p>Different sources refer to a different area of mangrove forest: - Forest cover monitoring map: ca. 40000 ha (for 2010) - Global Forest resources assessment 2005: thematic study on Mangroves Surinam: Mangrove area extent in 2005 is 114 400 ha - Spalding, M., Kainuma, M. and Collins, L. 2010. World atlas of mangroves. Earthscan, London, UK.: 50978 ha - Expert estimation: ca. 100 000 ha The number used here is the one from the thematic study on Mangroves Suriname, also because this number corresponds the most with the expert estimation we've got. In the future, research needs to be done to allow a more accurate reporting on this topic.</p>	<p>One pilot project was carried out, to rehabilitate 1.3 ha of mangrove forest, along the coastline of the district of Coronie.</p>
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Other general comments to the table

NA

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	De Milde (1974): Forestry Development- Surinam Forest Inventory. Technical report 6.	Growing stock, Forest types.	1974	A forest inventory carried out in three representative northern regions of Suriname by the FAO.
2	SBB yearly statistics.	Timber, production, Export, Import.	2000 - 2012	A yearly report is produced by SBB with detail figures of timber production, timber export and timber import.
3	Greenhouse Gas Emission inventory for Suriname.	Biomass stock.	NA	NA

4	Poels (1987) Soil water and nutrients in a forest ecosystem in Surinam.	NA	1987	NA
5	K. Tjon (1998): Monitoring Tropical Rainforest in Suriname; Internal Memorandum NARENA/CELOS	Biomass among the different forest types.	1998	Restricted study area.
6	Crabbe S. et al. (2012): Technical report: Results of Forest Carbon Assessment and Monitoring (FCAM) project Suriname.	Above ground biomass and carbon stocks- , litter, soil organic carbon.	2012	Data mainly collected in the easier accessible forestry belt.
7	Arets. E. et al. (2012) Towards a carbon balance for Suriname.	Aboveground biomass, allometric equations.	2011	Collection of data of different forest inventory plots.

3.2.2 Classification and definitions

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

3.2.3 Original data

Growing stock:

To calculate the growing stock, data from the following inventories were used:

- FAO inventory carried out in the 1970s for 3 large areas: Fallawatra (115,200 ha), Kabalebo (134,400 ha) and Nassau (115,200 ha). During this inventory, 9120 circular plots of 0.04 ha each were visited, following a 3 stage random sampling design.
- The data collected in 2010-2011 during the project Forest Carbon Assessment and Monitoring (FCAM) in Suriname. During this project 36 plots were established, spread east-west over the forestry belt. The plots were organized in 12 transects composed of 3 plots of 0.5 ha (50*100m) each.
- The data collected during various researches and presented in the report "Towards a Carbon Balance for Suriname" (see 3.2.1)

The results of the FAO inventory:

	Fallawatra	Nassau	Kabalebo

Area assessed (ha)	115.2	115.2	134.4
Growing stock (m3/ha)	236	246	213

Results of various forest inventory plots:

	Area (ha) assessed	AGB in trees (ton/ha)
FCAM project	18	240
Jonkers (1987)	3	391
Banki et al	39	373
Ruyschaert	4	359.25
Plot Mapane	1.6	211.3

Above ground biomass

During the FCAM project, data about the biomass stored in lianas and undergrowth was collected in addition to data for trees. Since the other mentioned inventories have no information about these components, only tree data was included in the FRA2015 table.

Dead wood

During the FCAM project data on standing dead wood larger than 5cm has been collected for 36 plots of 0.5 ha each. Lying dead wood was recorded as litter. An average value of 2.9 ton per ha has been found in these plots.

Litter

During the FCAM project data on lying dead wood and litter was collected for 4 x 36 plots of 3m x 3m each. It was impossible to separate them in dead wood and litter, and it will be presented here as litter.

Soil Organic Carbon

During the FCAM project data on Soil Organic Carbon was collected for 4 x 36 plots. An average of **26.2** ton per ha was found for the Organic Carbon stored in the upper 30 cm of the soil. It should be mentioned that only data for mineral soils was collected.

3.3 Analysis and processing of national data

3.3.1 Adjustment

3.3.2 Estimation and forecasting

Growing stock

The weighted average growing stock of 248.9 m³ per hectare was multiplied with the total forest area according to Question 1. For the plots where only aboveground biomass data was available, this biomass was divided by 0.95, the BCEF for humid tropical natural forest.

Above ground biomass

For the plots where only growing stock data was available, this growing stock was multiplied by 0.95, the BCEF for humid tropical natural forest.

To calculate the trends amongst the different years, the change in forest cover will be used.

To calculate the growing stock for the ten most dominant tree species in Suriname, the data from the FCAM project was used. This gives a first indication, which will be improved after the execution of the National Forest Inventory.

3.3.3 Reclassification

3.4 Data

Table 3a




Category		Growing stock volume (million m ³ over bark)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Total growing stock	3840.164	3830.394	3825.509	3820.624	3815.74	N/A	N/A	N/A	N/A	N/A
	... of which coniferous	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
	... of which broadleaved	3840.164	3830.394	3825.509	3820.624	3815.74	N/A	N/A	N/A	N/A	N/A

Table 3b

Category/Species name	Growing stock in forest (million cubic meters)
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Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	Eschweilera sp.	(U)manbarklak, tete-udu	344.175	343.3	342.862	342.424
2 nd	Eperua falcata	Walaba	311.121	310.329	309.933	309.538
3 rd	Couratari sp.	Ingipipa	133.995	133.654	133.483	133.313
4 th	Qualea rosea	Berg gronfolo	155.989	155.592	155.394	155.195
5 th	Virola melinonii	Hoogland babun	65.813	65.646	65.562	65.479
6 th	Goupia glabra	Kopi	94.468	94.228	94.108	93.988
7 th	Tetragastris altissima	Rode Sali	82.815	82.605	82.499	82.394
8 th	Dicorynia guianensis	Basralocus	67.198	67.027	66.942	66.857
9 th	Piptadenia suaveolens	Pikinmisiki	62.563	62.404	62.324	62.245
10 th	Manilkara bidentata	Bolletrie	68.201	68.028	67.941	67.854
Remaining			2453.824	2447.581	2444.46	2441.339
TOTAL			3840.16	3830.39	3825.51	3820.63

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)	5 cm	NA
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	NA	NA
Minimum diameter (cm) of branches included in growing stock (W)	NA	NA
Volume refers to above ground (AG) or above stump (AS)	AG	NA

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

Table 3c

Category	Net annual increment (m ³ per hectare and year)
	Forest



		1990	2000	2005	2010	2015
CFRQ	Net annual increment	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which coniferous	N/A	N/A	N/A	N/A	N/A
CFRQ	... 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
CFRQ	Above ground biomass	3648.155	3638.874	3634.234	3629.593	3624.953	N/A	N/A	N/A	N/A	N/A
CFRQ	Below ground biomass	487.147	486.052	485.504	484.957	484.409	N/A	N/A	N/A	N/A	N/A
CFRQ	Dead wood	95.201	94.964	94.843	94.722	94.6	N/A	N/A	N/A	N/A	N/A
TOTAL		4230.50	4219.89	4214.58	4209.27	4203.96	.00	.00	.00	.00	.00

Table 3e

Category		Carbon (Million metric tonnes)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
CFRQ	Carbon in above ground biomass	1714.633	1710.27	1708.09	1705.909	1703.728	N/A	N/A	N/A	N/A	N/A
CFRQ	Carbon in below ground biomass	228.959	228.44	228.187	227.93	227.672	N/A	N/A	N/A	N/A	N/A
CFRQ	<i>Subtotal Living biomass</i>	1943.592	1938.715	1936.277	1933.838	1931.4	N/A	N/A	N/A	N/A	N/A
CFRQ	Carbon in dead wood	44.747	44.633	44.576	44.519	44.462	N/A	N/A	N/A	N/A	N/A
CFRQ	Carbon in litter	231.45	230.86	230.566	230.272	229.977	N/A	N/A	N/A	N/A	N/A

	<i>Subtotal Dead wood and litter</i>	276.2	275.493	275.142	274.791	274.44	N/A	N/A	N/A	N/A	N/A
	Soil carbon	404.264	403.236	402.722	402.208	401.693	N/A	N/A	N/A	N/A	N/A
TOTAL		2624.05	2617.44	2614.14	2610.84	2607.53	.00	.00	.00	.00	.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 1	Tier 1
Below ground biomass	Tier 1	Tier 1
Dead wood	Tier 1	Tier 1
Carbon in above-ground biomass	Tier 1	Tier 1
Carbon in below ground biomass	Tier 1	Tier 1
Carbon in dead wood and litter	Tier 1	Tier 1
Soil carbon	Tier 1	Tier 1

Tier criteria

Category	Tier for status	Tier for reported trend
Total growing stock	Tier 3: Data sources Recent 10 years National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI 10 years Domestic volume functions Tier 2: Data sources/registers and statistics modelling or old NFI 10 years or partial field inventory Tier 1: Other data sources	Tier 3: Estimate based on repeated compatible tiers 3 (tier for status) Domestic growth functions Tier 2: Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 tier for status Tier 1: Other
Net annual increment	Tier 3: Scientifically tested national volume and growth functions Tier 2: Selection of volume and growth functions as relevant as possible Tier 1: Other	Tier 3: Confirmation/adjustment of functions used through scientific work Tier 2: Review work done to seek alternative functions Tier: 1 Other

Biomass	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied or other domestic or otherwise nationally relevant biomass studies Tier 2: Application of country specific national or sub-national biomass conversion factors from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Carbon in above ground biomass • Carbon in below ground biomass • Carbon in dead wood and litter • Soil carbon 	Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied Tier 2: Application of country specific national or sub-national biomass conversion factors form from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
Total growing stock	Based on a weighed average of different forest inventory results	only based on change in forest area
Growing stock of broadleaved coniferous	Even though a small area (7000ha) was planted with pinus, we assumed that the whole forest is composed of broadleaved coniferous. (no growing stock for the pinus is known)	only based on change in forest area
Growing stock composition	the available inventory data was listed and sorted by species composition.	only based on change in forest area
Net annual increment	no data available on this topic	no data available on this topic
Above-ground biomass	Calculated based on growing stock, assuming the BCEF to be 0.95	only based on change in forest area
Below-ground biomass	Calculated using the equation of Cairns et al (1997): $\exp(-1.0587+0.8836*\ln(\text{Above ground biomass}))$. Surinamese data was included to establish this equation	only based on change in forest area
Dead wood	Based on FCAM report, assuming an average of 6.17 ton per ha standing dead wood	only based on change in forest area
Carbon in above-ground biomass	Based on Above-Ground biomass, assuming the carbon content to be 47% of the biomass (McGroddy et al, 2004)	only based on change in forest area
Carbon in below-ground biomass	Based on Below-Ground biomass, assuming the carbon content to be 47% of the biomass (McGroddy et al, 2004)	only based on change in forest area

Carbon in dead wood	Based on dead wood mass, assuming the carbon content to be 47% of the biomass (McGroddy et al,2004)	only based on change in forest area
Carbon in litter	Based on FCAM-report, assuming an average carbon in litter value of 15 ton per ha	only based on change in forest area
Soil carbon	Based on FCAM-report, assuming an average soil carbon content of 26.2 ton per ha in the first 30 cm	only based on change in forest area

Other general comments to the table

The data presented for this topic are calculated based on different small scale and regional forest inventories. Currently a pilot project for a National Forest Inventory is carried out, where after we hope to continue with a complete NFI. We hope that this NFI will allow us to provide more statistically sound data for the next reporting. Note: to report on the carbon content in litter, dead wood and soil, we could only use the FCAM report.

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	SBB Data base "LogPro and GIS unit".	Production of roundwood and fuelwood.	1999 - 2012	In 1999, with the assistance of the FAO a log tracking system the so-called "LogPro" has been developed and operationalized. With this system it is possible to follow the flow of all harvested logs from their origin to their destination.
2	General Bureau of Statistics.	Export value of Non Wood Forest Products.	2010	NA
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
NA	NA
N/A	N/A
N/A	N/A
N/A	N/A

4.2.3 Original data

Total roundwood production per assortment 1982 - 2012 (m3)													
	Industrial roundwood									Wood Fuel			
Year	Round wood (Saw- and Veneer log)	Hewn square pole	Fence post	Railway sleeper	Shingle	Sawn wood 1)	Pine pole	Other minor timber product	Sub total	Fuel wood	Charcoal	Sub total	Total
1990	114,784	597	468	30	19				115,898	424		424	116,322
1991	105,177	877	452						106,506	388	104	492	106,998
1992	118,765	1,734	1,291		11				121,801	423		423	122,224
1993	93,122	4,112	821	14	8				98,077	119		119	98,196
1994	96,213	4,014	362		4				100,593	132		132	100,725
1995	104,668	3,213	880		2				108,763	20		20	108,783
1996	202,703	9,345	803			3	768		213,622	35		35	213,657
1997	179,228	1,687	655			3	1,003		182,576	218		218	182,794
1998	141,031	2,524	996			3	516		145,070	90		90	145,160
1999	89,930	1,685	1,044			1,256			93,915	3	8	11	93,926
2000	171,265	2,030	1,550			1,616			176,461		55	55	176,516
2001	155,135	1,804	3,033		2	2,334			162,308		305	305	162,613
2002	145,353	3,972	2,682		36	1,769			153,812	270	76	346	154,158
2003	147,053	3,712	3,290		12	1,394			155,461	2,400	54	2,454	157,915

2004	153,279	1,519	2,137			2,477			159,412	620	23	643	160,055
2005	170,391	648	2,415			7,437			180,891	1,537	122	1,659	182,550
2006	190,119	654	1,591			692			193,056	183	58	241	193,297
2007	154,207	601	2,235			9,322			166,365	178	7	185	166,550
2008	178,576	689	2,021			16,108			197,394	382	70	452	197,846
2009	188,269	1,388	6,524		5	10,789			206,975	405	8	413	207,388
2010	235,830	1,225	3,766		7	5,330			246,158	1,079	140	1,219	247,377
2011	347,566	1,281	3,801		18	13,049			365,715	527	153	680	366,395
2012	415,392	63	3,043		10	17,041			435,549	574	183	757	436,306
1). Sawntwood = Lumber produced with the chainsaw within the log production area in the forest.													

4.3 Analysis and processing of national data

4.3.1 Adjustment

4.3.2 Estimation and forecasting

In a period of 10 years the timber production has been increased from an average of 150,000 m³ round wood per annum to 400,000 m³ round wood per annum. The expectation is that the production will increase further in the coming years because of the demand of timber on the Chinese market. 80% of the total round wood production is processed within the country by the local processing industry.

4.3.3 Reclassification

4.4 Data

Table 4a

Categories	Forest area (000 hectares)
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		1990	2000	2005	2010	2015
	Production forest	354	1686	1996	1965	2000
	Multiple use forest	527	527	644	702	702

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
1 st	Fruits	Cashew nuts and other nuts	1266.45	1
2 nd	Living animals	Snakes, apes, birds	1634.3	9
3 rd	Flowers	Orchides	79.12	6
4 th	Medicinal plants	NA	83.7	3
5 th	NA	NA	N/A	N/A
6 th	NA	NA	N/A	N/A
7 th	NA	NA	N/A	N/A
8 th	NA	NA	N/A	N/A
9 th	NA	NA	N/A	N/A
10 th	NA	NA	N/A	N/A
TOTAL			3063.57	

2010	
Name of local currency	Surinamese dollar (SRD) Exchange rate : US \$ 1.00 = SRD 3.35

Category
Plant products / raw material
1 Food
2 Fodder
3 Raw material for medicine and aromatic products
4 Raw material for colorants and dyes

5 Raw material for utensils handicrafts construction
6 Ornamental plants
7 Exudates
8 Other plant products
Animal products / raw material
9 Living animals
10 Hides skins and trophies
11 Wild honey and beeswax
12 Wild meat
13 Raw material for medicine
14 Raw material for colorants
15 Other edible animal products
16 Other non-edible animal products

Table 4c Pre-filled data from FAOSTAT

Year	FRA 2015 category (1000 m ³ u.b.)	
	Total wood removals	...of which woodfuel
1990	116.32	0.42
1991	106.99	0.49
1992	122.22	0.42
1993	98.19	0.11
1994	100.72	0.13
1995	108.78	0.02
1996	213.65	0.03
1997	182.79	0.21
1998	145.16	0.09
1999	93.92	0.01
2000	176.51	0.05

2001	162.61	0.3
2002	154.15	0.34
2003	157.91	2.45
2004	160.05	0.64
2005	182.55	1.65
2006	193.29	0.24
2007	166.55	0.18
2008	197.84	0.45
2009	207.38	0.41
2010	247.37	1.21
2011	366.3	0.68

Tiers

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

Tier Criteria

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

4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	In the National Forest Policy, the 4.5 million ha east-west running forest belt is defined as production forest, of which an area of 2.5 million ha is issued for forest production. The rationale for this area is mainly based on economic factors such as, accessibility and transport costs. Within the production forest 1.6 million ha of timber concessions, 0.58 million ha of communal forests and 0.3 million ha of exploration licences are issued.	NA

Multiple use forest	Communal forest has been classified as multiple use forest. As mentioned, above 580,000 ha of forest are issued as communal forests, including the communal wood cutting licenses – Houtkapvergunningen (HKV)-which were issued based on the Timber Act 1947. It is allowed to utilize the communal forest for timber production for subsistence use as well for commercial use. The communal forest can also be utilize for the production of NWFP, including hunting, fishing and shifting cultivation.	NA
Total wood removals	The presented data of the Total wood removals is data that has been recorded by the forest management institution SBB. Woodfuel consists the poles of the timber species walaba used for cremation and the recorded charcoal production. Data of the total Woodfuel consumption is not available. Woodfuel extracted for subsistence use for cooking is not recorded. In a period of 10 years the timber production has been increased from an average of 150,000 m3 round wood per annum to 400,000 m3 round wood per annum. 80% of the total round wood production is processed within the country by the local processing industry.	NA
Commercial value of NWFP	NWFP are mainly produced by forest communities for subsistence use and commercial use. It is estimated that yearly a value of US \$ 15 million has been realised with the extraction of NWFP. The subsistence use and locale trade of these products are not being recorded. Export of NWFP are being recorded. In 2010 Cashew nuts and others nuts with the value of SRD 2,532,900 has been exported . It is expected that 50% of this product came from the forest and 50% was cultivated. Of the NWFP Orchides a export value of SRD 395,600 has been recorded in 2010. It is expected that 20% of this product came from the forest and 80% was cultivated .	NA

Other general comments to the table

NA

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	The Forest Cover Monitoring Unit of Suriname, located at the Foundation for Forest Management and Production Control (SBB).	Geographic location of the forest cover.	2000 2009	This unit has been established within a project initiated by the Amazon Cooperation Treaty Organization (ACTO); Monitoring deforestation, logging and land use change in the Pan Amazonian forest.
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

5.2.2 Classification and definitions

National class	Definition
Multiple Use Management Areas (MUMA)	These MUMAS are located in the estuarine zone, and are established, because they are important areas for fish and shrimp species to lay their eggs and are thus vital in keeping out the different fish populations to decreased.
N/A	N/A
N/A	N/A
N/A	N/A

5.2.3 Original data

Table 5a:

The MUMA's play a role in the coastal stabilization. Some original data:

	Multiple-use management areas (MuMA's):	Total area (ha)	Established
1.	Bigi Pan	67,900	1987
2.	Noord Coronie	27,200	2001
3.	Noord Saramacca	88,400	2001
4.	Noord Commewijne / Marowijne	61,500	2002

The MUMA's are composed of water and land (forest/non-forest. Therefore the extend of the MUMA's was laid over the forest cover maps, which allowed us to calculate the forest area within their extend. The results are displayed in Table 5a.

Table 5b:

There is no existing map showing the area designated for recreational use. Therefore we could just include a list of the existing recreational places, but we can not connect these places to an area.

1	Powakka
2	Blakawatra
3	Gunsie
4	Baboenhol
5	Anaula Nature Resort
6	Ara pahu eiland
7	Awarradam
8	Berg & Dal
9	Blanche Marie Watervallen
10	Danpaati
11	Jaw Jaw
12	Kabalebo
13	Kasikasima
14	Paradis eiland
15	Tebu Top
16	Wonotobo
17	Bakaa boto
18	Kwamalasamutu
19	Tukunari eiland
20	Sarabang

21	Gusterie
22	Berde brug
23	JSOOC
24	Tafelberg
25	Ston eiland
26	Apiapaati
27	Palumeu
28	Raleighvallen - Voltzberg
29	Overbridge
30	Gongrijpbos
31	Parabello
32	Tonka eiland
33	Bigipan
34	Galibi Nature Reserve
35	Colakreek
35	Jodensavanne
36	Ananistrand
37	Marinalex
38	Carolinakreek
39	Berlijn
40	Whitebeach
41	Bronsberg Nature Park
42	STINAT STINASU Nature Trail

5.3 Analysis and processing of national data








5.3.1 Adjustment

5.3.2 Estimation and forecasting

5.3.3 Reclassification

5.4 Data

Table 5a

Categories		Forest area (1000 hectares)				
		1990	2000	2005	2010	2015
	Protection of soil and water	16.8	16.8	144.371	143.17	141.969
	... of which production of clean water	0	0	0	0	0
	... of which coastal stabilization	16.8	16.8	144.371	143.17	141.969
	... of which desertification control	0	0	0	0	0
	... of which avalanche control	0	0	0	0	0
	... of which erosion, flood protection or reducing flood risk	0	0	0	0	0
	... of which other (please specify in comments below the table)	0	0	0	0	0

Other

N/A

Table 5b

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015
Ecosystem services, cultural or spiritual values	N/A	N/A	N/A	N/A	N/A
...of which public recreation	N/A	N/A	N/A	N/A	N/A
...of which carbon storage or sequestration	0	0	0	0	0
...of which spiritual or cultural services	N/A	N/A	N/A	N/A	N/A
...of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A

Tiers

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

Tier criteria

Category	Tier for status	Tier for reported trend
Protection of soil and water	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations or legislation relating to soil and water protection. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

<ul style="list-style-type: none"> • Cultural or spiritual values • Public recreation • Spiritual or cultural services • Other 	<p>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</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other</p>
--	---	--

5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	NA	NA
Production of clean water	NA	NA
Coastal stabilization	Only the forest area in the Multiple Use Management Areas (MUMA's), is included here.	Based on the deforestation taking place within the extend of the MUMA's between 2000 and 2009. Also based on the establishment of three new MUMA's. (2001 and 2002)
Desertification control	The risks for desertification are very low, therefore no special areas have been designated to control this.	NA
Avalanche control	The risks for avalanches are very low, therefore no special areas have been designated to control this.	NA
Erosion, flood protection or reducing flood risk	On a national scale, no areas are designated for this purpose. But for soil and waterquality protection it's obliged to indicate areas within the logging concessions where it's prohibited to do logging activities. To protect waterstreams a buffer zone has to be respected: - 30 m on both banks of rivers - 20 m on both banks of creeks - 20 m on shore of lakes, swamps and marsh. The buffer zones will prevent soil erosion, degradation of waterquality and other negative effects on the soil due to forest exploitation.	NA
Other protective functions	NA	NA
Ecosystem services, cultural or spiritual values	NA	NA
Public recreation	Several public recreation areas are established in the forested areas. These are as well governmental as private initiatives. No information is available on the extend of these areas.	NA
Carbon storage or sequestration	No areas are designated for carbon storage and sequestration.	NA

Spiritual or cultural services	Especially in the surrounding of forest based villages and settlements, sacral areas can be found.	NA
Other ecosystem services	NA	NA

Other general comments to the table

NA

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	National Forest Policy of Suriname.	Designation of forest land.	2003	The forest policy has been formulated in a participatory process with all relevant stakeholders. The development of the total forest sector is based on this policy document.
2	Nature Conservation Act 1954 (G.B. 1954 no 26).	Establishment of protected areas.	1954	Rules and guidelines, Management plans for the protected areas.
3	Forest Management Act 1992 (S.B 1992 no 80).	Designation of forest land.	1992	Forest classification.
4	SBB Data base "LogPro and GIS unit" Forest use rights Map.	Data including issued concessions and other timber harvesting rights.	1999-2012	Since 1999 a log tracking system the so-called "Log Pro" has been developed with the assistance of FAO. With this system it is possible to follow all the felled logs from the origin to the destination. The forest use rights map is frequently updated by the GIS unit (as long as it is necessary) and is available for the broad public.

6.2.2 Classification and definitions

National class	Definition
NA	NA

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

6.2.3 Original data

See 4.2.3.

6.3 Analysis and processing of national data

6.3.1 Adjustment

6.3.2 Estimation and forecasting

See 4.3.2.

6.3.3 Reclassification



Conservation of biodiversity : forest area within the nature reserves

Forest area within protected areas: forest area within the nature reserves+ forest area within MUMA's + forest area within Brownsweg Nature Park

The Forest area was determined in GIS were the extend of resp. Nature reserves, MUMA's and the Nature Park was overlaid with the forest cover layer of 2000 and 2009.

6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Conservation of biodiversity	1764.8	1764.6	1764.5	1764.4	1764.3
	Forest area within protected areas	1794.3	1793.8	1893.1	1891.7	1890.3

Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	Tier 2	Tier 1
Forest area within protected areas	Tier 2	Tier 1

Tier criteria

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

6.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Conservation of biodiversity	Forest area extracted from the forest cover data 2000, overlaid with the Nature reserves.	An assumption was made that no forest in nature reserves was deforested in this period.
Forest area within protected areas	Sum of the forest areas in the nature reserves, the multiple use management areas (MUMA's), Brownsberg Nature Park and special protected forest.	Bigipan MUMA with a forest cover of ca.16,800 ha in 2000 was allocated in 1987, while the other MUMA's were allocated in 2002-2003. The forest area in the MUMA's can not be assumed to be constant, because lots of human activities take place within the MUMA's. In 2012 two special protected areas were established for scientific purposes, with a total area of ca. 3,000 ha

Other general comments to the table

NA

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	Expert opinion	NA	NA	NA
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
NA	NA
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

Untill now no assesement has been done within forest inventories or other kind of surveys regarding woody invasive species.

Observation and expert opinion shows that there are no signs of invasive woody species in the tropical forest of Suriname. There is no indication that within 5 to 10 years there will be significant impact of invasive woody species affecting the tropical forest of Suriname.

7.3.3 Reclassification

7.4 Data

Table 7

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

Tiers

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

Tier Criteria

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

7.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Invasive species	NA	NA

Other general comments to the table

NA

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	Fire Information and Resource System.	Fire point locations, burned area based on MODIS data.	2003-2012	NA
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

8.2.2 Classification and definitions

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

8.2.3 Original data

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	0.48	933	9.79	677	0.27	391	8.25	478	0.21	301
	... of which forest area burned	0.13	384	0.44	223	0.1	166	0.19	207	0.04	127
Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	0.77	239	7.31	N/A	0.17	433	0.15	359	0.25	N/A
	... of which forest area burned	0.15	62	0.21	N/A	0.15	195	0.04	107	0.02	N/A

Table 8b

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

Outbreak category

- | |
|-------------------------|
| 1 Insects |
| 2 Diseases |
| 3 Severe weather events |

Tiers

Category	Tier for status	Tier for trend
Area affected by fire	Tier 2	Tier 2
<ul style="list-style-type: none"> Insects Diseases Severe weather events 	Tier 1	Tier 1

Tier criteria

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

8.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Burned area	As the minimum burned area to be registered is about 230m x 230m, smaller fires are difficult to detect with this method. Nevertheless these fires are recorded in the number of fires.	NA
Insects	No outbreaks of insect plagues in the forest are known and/or are reported.	NA
Diseases	No outbreaks of diseases in the forest are known and/or are reported.	NA
Severe weather events	Forest can be affected by storms, drought (especially mangrove forest), but no data are available about the area that is affected.	NA

Other general comments to the table

Most fires are detected in the savanna, close to villages and settlements and along the rivers (shifting cultivation). Additionally, in the most western situated district, Nickerie, with an active paddy cultivation area of ca. 50,000 ha, twice a year hay burning activities take place.

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	876

Tiers

Category	Tier for reported trend
Reduction in canopy cover	Tier 2

Tier criteria

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

Comments

Category	Comments related to data definitions etc
Reduction in canopy cover	Doing this exercise, we looked at areas with a canopy cover equal to or higher than 30% in years 2000 and 2010. For these areas we extracted the areas where the reduction in canopy cover is 20% or more.

Other general comments

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

Documents for this question:

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

10.1 Categories and definitions

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

10.2 National data

10.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	National Forest Policy of Suriname.	Forest policy.	2003	The forest policy has been formulated in a participatory process with all relevant stakeholders. The development of the total forest sector is based on this policy document.
2	Interim Strategic Action Plan for the Forest sector in Suriname, 2009 -2013.	Forest action plan	2009	In this plan the national forest policy is translated into specific actions, with the indications of priority actions.
3	Forest Management Act 1992 (S.B. 1992 no 80), Nature Conservation Act 1954 (G.B. 1954 no 26) and Game Act 1954 (G.B. 1954 no 25).	Legislation to support Sustainable Management of the Forest.	1992	Is the legal framework on which the management of the forest is based.
4	N/A	N/A	N/A	N/A

10.2.2 Classification and definitions

National class	Definition
NA	NA
N/A	N/A

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	yes

10.4 Comments

Variable / category	Comments related to data definitions etc
Policies supporting sustainable forest management	Suriname has formulated her first National Forest Policy document in 2003. To implement the forest policy, in 2009 a interim strategic action plan has been formulated, with the indication of priority action which will lead to strengthen SFM in the country and the further development of the total forest sector. The policy and the action plan are relevant at national level but it has also influence on sub-national level.

<p>Legislation and regulations supporting sustainable forest management</p>	<p>National legislation: Physical planning of Suriname: Planning Act. Forestry: The Forest Management Act (S.B. 1992 no. 80), with her 15 subsidiary legislation, for the regulations of sustainable forest management. Timber Import and Export: Timber Export Act (G.B. 1950 no. 1, as amended by S.B. 1980 no. 145) .With the subsidiary legislation: Tariff timber grading (S.B. 1996 no. 70).Timber and Timber products that are exported have to be produced from sustainable managed forest. Forest exploitation on state land let out on hereditary lease (erfpacht) or land lease (grondhuur): State land Grants Decree (article 20), Agrarian Act (article 11). In cases where there is violation of SFM: Code of Criminal Procedure, Criminal/penal code, Decree on Economic Delicts. Nature Conservation: Regulation for protected forest/flora and fauna, Nature Conservation Act 1954 (G.B. 1954 no. 26), with subsidiary legislation Nature Conservation Resolution 1961, 1966, 1969, 1972, 1986, 1998. Game Act 1954 (G.B. 1954 no. 25, as amended by S.B. 1997 no. 33). Regulation for protected forest/flora and fauna. Ministerial decrees for area's as muma 's.</p>
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Other general comments

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

Documents for this question:

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

11.1 Categories and definitions

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

11.2 National data

11.2.1 Data sources

	References to sources of information	Years	Additional comments
1	List of participants of the meetings and workshops organized by the Ministry of RGB, including SBB	2013	NA
2	Membership lists of the coordinating bodies	2012	NA
3	Statute of the SBB	1998	NA
4	N/A	N/A	N/A

Table 11

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

Category	Comments related to data definitions etc
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National stakeholder platform	<p>The private sector, indigenous- and maroon people have separate respective coordinating bodies for collective participation in forestry related discussions with the government. Some of the coordinating bodies within the forest sector are: The ABE, is the loggers association. ASHU is the union of the sawmillers. PHS, platform of the timber sector in Suriname, is a umbrella organization of the timber sector with representatief of aswell the ABE, ASHU and other employers and entrepreneurs organisations active in the timber sector. VSG, is the union of the Saramakaanse maroon tribe. VIDS, is the union of the endigenous village heads. The Ministry responsible for forestry has a well identified stakeholders group that are being consulted regularly regarding SFM policy formulation, planning and implementation. In the past there was a consultative body for the forest sector, appointed through a ministerial decree by the Minister responsible for forestry. The chair of this body was the permanent secretary of the Ministry responsible for forestry and representatives of the private sector, Ministry of Trade and Industry, Ministry of Finance were members. At this moment this body is not operational. The Minister responsible for forestry has taken action to reactivate it. Within this body SFM policy formulation, planning and implementation can be discussed with the stakeholder's representatives. Through the board of the SBB, the forest management institution, there are possibilities for the public-, private sector and indigenous- and maroon people to participate in policy making processes.</p>
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Other general comments

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12. What is the forest area intended to be in permanent forest land use and how has it changed over time?

Documents for this question:

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

12.1 Categories and definitions

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

12.2 National data

12.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forest Management Act 1992 (S.B. 1992 no 80).	Designation of forest land.	1992	Forest classification.
2	Indicative Forest Classification Map.	Forest classification.	2001	The Classification of the forest must be done through a bylaw. The law is in preparation.
3	SBB Data base "LogPro" Forest use rights Map.	Data including issued concessions and other timber harvesting rights.	1999-2012	Since 1999 a log tracking system "Log Pro" has been developed with the assistance of FAO. With this system it is possible to follow felled logs from the origin to the destination. The forest use rights map is frequently updated (as long as it is necessary) and available for everyone.
4	National Forest Policy.	Designation of forest land.	2003	The forest policy has been formulated in a participatory process with all relevant stakeholders.

12.2.2 Classification and definitions

National class	Definition
NA	NA

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

12.2.3 Original data

See 4.2.3.

12.3 Analysis and processing of national data

12.3.1 Adjustment



12.3.2 Estimation and forecasting

See 4.3.2

12.3.3 Reclassification

12.4 Data

Table 12

Categories		Forest area 2010 (000 ha)
	Forest area intended to be in permanent forest land use	7210
	... of which permanent forest estate	7210

Tiers

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

Tier Criteria

Category	Tier for status
----------	-----------------

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

12.5 Comments

Category	Comments related to data definitions etc
Forest area intended to be in permanent forest land use	Includes all formally established protected forest areas and all forest concessions and formally designated community forest, but forests to be maintained provisionally have been excluded. 2.19 million hectares of land were designated for protection and conservation, and those are composed of 1.89 million ha of forest.
Permanent forest estate	Because most forest are stateland, we can assume this class to be equal to the above mentioned class.

Other general comments

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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	The Observation Room of Suriname, located at the Foundation for Forest Management and Production Control.	Forest area.	2000-2009	The observation room was established in 2012, within the ACTO project mentioned before. Its objective is delivering updated information on deforestation (area covered with forest), land use, forest degradation etc. The unit is now initiating its work, by making two forest cover maps, one for 2000 and one for 2009. Consequently a more updated map for 2013 will be produced.
2	The GIS-unit of the SBB.	Location where logging take place, skid trails, concession boundaries, etc.	2000-2013	The SBB has a very detailed monitoring of the timber production, and especially the geographical location of the logging activities.
3	Pilot project for a National Forest Inventory.	Preliminary dataset of aerial images and field parameters,	2013	To establish a relation between the aerial images and biomass/ timber stock, field data is currently collected in permanent sample units.
4	Technical report: Results of Forest Carbon Assessment and Monitoring project Suriname.	Above ground biomass, SOC, dead wood and litter.	2011	Together with other institutions, the SBB has established 36 permanent sample plots spread over the forestry belt. These plots can be remeasured in the future.

5	Plots established to evaluate the Celos Management System.	Data on the impact of different silvicultural treatments and harvesting techniques on the forest of Suriname.	N/A	NA
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13.2.2 Classification and definitions

National class	Definition
NA	NA
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	2013	yes	yes	yes	yes	yes	yes
Other field assessments	5	2013	yes	no	no	no	no	no
Updates to other sources	N/A	N/A	no	no				
Expert estimate	N/A	N/A						

Table 13b

Type of forest reporting used at national scale	Check boxes that apply
1 Criteria and Indicators reporting	yes
2 Periodic national state of the forest report	yes
3 Other (please document)	no
4 None	no

Other type of forest reporting

NA

13.4 Comments

Category	Comments
NA	NA
N/A	N/A
N/A	N/A

Other general comments

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

Documents for this question:

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

14.1 Categories and definitions

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

14.2 National data

14.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forest Management Act (S.B. 1992 no 80).	Designation of forest land.	1992	Forest classification.
2	SBB Data base "LogPro" Forest use rights Map.	Data including issued concessions and other timber harvesting rights.	1999-2012	Since 1999 a log tracking system "LogPro" has been developed with the assistance of FAO. With this system it is possible to know, where and when a tree has been felled, the logs have been transported and when it was exported etc. The forest use rights map is frequently updated (as long as it is necessary) and available for everyone.
3	National Forest Policy of Suriname.	Designation of forest land.	2003	The forest policy has been formulated in a participatory process with all relevant stakeholders.
4	Data base of Forest Service/ Nature Conservation Division.	Data issued Protected Areas.	2013	Existence of management plans for the protected areas.

14.3 Data

Table 14a

Forest plan type	Forest area 2010 (000 ha)
------------------	---------------------------

Forest area with management plan	3260.349
... of which for production	1186.849
... of which for conservation	2073.5

Table 14b

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

Table 14c

Percent of area under forest management plan that is monitored annually	1
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Tiers

Category	Tier for status
Forest area with management plan	Tier 2
Percent of area under forest management plan that is monitored annually	Tier 1

Tier criteria

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

14.4 Comments

Category	Comments
Soil and water management	For soil and waterquality protection it's obliged to indicate areas within the concession where it's prohibited to do logging activities. To protect waterstreams buffer zone has to be create: - 30 m on both banks of rivers - 20 m on both banks of creeks - 20 m on shore of lakes, swamps and morass. The buffer zones will prevent soil erosion, degradation of waterquality and other negative effects on the soil due to forest exploitation.

<p>High conservation value forest delineation</p>	<p>A total area of ca. 275,000 ha is FSC certified. Within these concessions they are obliged to have biodiversity reserves. In total there are 5,720 ha of biodiversity reserves within the certified concessions. Within the production forest 2 areas, the Kabo forest area and the Mapane forest area, with a total of 3,323 ha are established as special protected forest. Special protected forests are areas with the status of permanent maintained forests due to their location, composition of flora and fauna and the esthetic value, particular scientific, educational cultural or recreational function</p>
<p>Social considerations / community involvement</p>	<p>The forest management act indicates that in the process of the issuance of license for forest utilization, the legal authority must respect as much as possible the common laws of the forest communities. This is implemented in practice as follows. Every concession application when there is an indication that the applied area is near a forest community, the Minister responsible for forest asks advice to the Minister that is responsible for community development. The economic and cultural zones of the communities are excluded from the area to be granted as concession. After approval of the applied concession, the company has to take into consideration the development of the surrounding communities. The infrastructure is maintained and members of the communities are as much as possible employed. Possibly negative effects of logging to the communities are minimized, and safety, hunting & fishing, drinking water, agriculture, collection of non timber forest products, cultural areas (sacred sites, burial grounds) are guaranteed.</p>

Other general comments

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

Documents for this question:

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

15.1 Categories and definitions

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

Table 15

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

Tiers

Category	Tier for status
Type of stakeholder inputs	Tier 3

Tier criteria

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

15.2 Comments

Category	Comments
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All 3 categories	<p>There are well identified stakeholders groups that are being consulted regularly through workshops and consultative meetings regarding SFM policy formulation, planning and implementation. For instance, in the national forest policy formulation process, the formulation of the Interim strategic Action Plan for the forest sector 2009 - 2013, the revision of the forest charges, revision of the forest legislation, formulation of the Code of Practice for sustainable timber harvesting, this type of interactive decision making processes has been conducted. In the past there was a consultative body for the forest sector, appointed through a ministerial decree by the Minister responsible for forestry. The chair of this body was the permanent secretary of the Ministry responsible for forestry and representatives of the private sector, Ministry of Trade and Industry, Ministry of Finance were members. At this moment this body is not operational, the Minister responsible for forestry has taken action to reactivate it. Within this body SFM policy formulation, planning and implementation can be discussed with the stakeholder's representatives. The private sector, indigenous- and maroon people have separate respective coordinating bodies for collective participation in forestry related discussions with the government. Through the board of the SBB there are possibilities for the public-, private sector and indigenous- and maroon people to participate in policy making processes.</p>
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	0
	PEFC	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	0	65.27	65.27	89.12	23.86	89.12	
	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
	NA	0	0	0	0	0	0	0
	NA	0	0	0	0	0	0	0

		2007	2008	2009	2010	2011	2012	
	N/A	0	0	0	0	0	0	
	NA	0	0	0	0	0	0	
	NA	0	0	0	0	0	0	

Tier criteria

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

Tiers

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

16.3 Comments

Category	Comments related to data definitions etc
Certified forest area using an international forest management certification scheme	NA
Domestic forest management certification	There are no domestic forest management certification scheme.

Other general comments

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

Documents for this question:

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

17.1 Categories and definitions

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

17.2 National data

17.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Budgets of the Ministry responsible for forest.	Expenditure.	2010	NA
2	Yearly financial report of SBB.	Forest revenues.	2000-2010	NA
3	Report from the Nature Conservation Division of the Forest Service.	Value of the exported Wildlife.	1997-2000, 2004-2007	NA
4	Export figures of NWFP from the Ministry of Trade.	value of exported NWFP.	2006 - 2007	NA

17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	232348.8	3223.4	8467
Public expenditure on forestry	N/A	N/A	5324
	2000	2005	2010

Name of Local Currency	Surinamese Dollar (SRD) : Exchange rate US\$ 1 = SRD 2.80	N/A	N/A
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17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	The most important forest revenues are; 1. Area fees on timber exploration licence and timber concession. 2. Retribution on the felled timber. 3. Grading fee for export timber. 4. Export tax on non- and semi- processed timber. Due to the increase of the timber production the forest revenue is increasing. All the collected revenues are deposited to the public treasury.
Public expenditure on forestry	Public expenditure on forestry are all the money allocated from the national budget for the investment and exploitation cost of governmental forest institutions. This includes forest and nature management institutions, research institutions and training & education institutions.
Other general comments	NA

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	SBB Data base, GIS unit.	The timber harvesting rights.	1999 - 2012	All the timber cutting rights and the protected areas.
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

18.2.2 Classification and definitions

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

18.2.3 Original data

Estimated forest area of Suriname by type of tenure as of 1985 is as follows	
National classification	Area in ha (x 1000)
	1985
Private ownership	50
Allodial property	37
Lease hold	47
Land lease	27
Others	60

There is a great possibility that in the past decade the total area of the land tenure: Private ownership, Allodial property, Lease hold, Land lease and others is increased but no data are available at this moment.

Forests on private land do not cover more than a total area of 50,000 ha. The Constitution does not provide for tribal rights of land use. However, the indigenous and maroon people claim these rights. The Government recognizes the urgency of this matter, what has been indicated in the National Forest Policy 2003 and the Interim Strategic Action Plan 2009 for the Forest Sector. Among others a Presidential Committee has been established which contributes also in accelerating the process of structural and constructive consultation with the interior people on this matter

18.3 Analysis and processing of national data

18.3.1 Adjustment

18.3.2 Estimation and forecasting

18.3.3 Reclassification






FRA Classification	National classification	Area in ha (x 1000)
Private ownership	Private ownership	50
	Allodial property	37
Public ownership	State land	
	Lease hold	47
	Land lease	27
	Others	60
Other ownership		




Reclassification of forest management rights:

FRA Classification	National classification
Public administration	- LBB-reserves - Nature reserves - Stateland - MUMA's
Individuals	Incidental cutting licenses and concessions issued to natural persons
Private corporations and institutions	Incidental cutting licenses and concessions issued to legal persons
Communities	Communal forest
Other	A holder of a land lease or lease hold rights can, if there is no overlapping with actual forest management rights, dispose of the wood within the boundaries of their terrain.

18.4 Data

Table 18a

Categories		Forest area (1000 hectares)			
		1990	2000	2005	2010
	Public ownership	15343	15304	15284	15264
	... of which owned by the state at national scale	15343	15304	15284	15264
	... of which owned by the state at the sub-national government scale	0	0	0	0
	Private ownership	87	87	87	87
	... of which owned by individuals	N/A	N/A	N/A	N/A

	... of which owned by private business entities and institutions	N/A	N/A	N/A	N/A
	... of which owned by local, tribal and indigenous communities	0	0	0	0
	Unknown ownership	0	0	0	0
TOTAL		15430.00	15391.00	15371.00	15351.00

Tiers

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

Tier criteria

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

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Public Administration	14481	12728.41	13135.2	12971
Individuals	0	352.3	387.4	235
Private companies	354	1715.3	1239.4	1478
Communities	508	508	522	580
Other	0	0	0	0
TOTAL	15343.00	15304.01	15284.00	15264.00

Category	Tier for reported trend	Tier for status
Public Administration	Tier 1	Tier 1
Individuals	Tier 3	Tier 3
Private companies	Tier 3	Tier 3
Communities	Tier 3	Tier 3
Other	Tier 1	Tier 1

18.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Public ownership	NA	NA
Private ownership	NA	NA
Unknown ownership	NA	NA
Management rights	NA	NA

Other general comments to the table

NA

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 Service (LBB); Forest Industry Survey 1989.	Employment in logging, log transport, timber processing and non-wood forest product.	1989	The source of FRA 1990 is based on a 100% survey executed in 1989 of the employment in the forest sector, including logging, log transport and timber processing. Employment data for the production of non-wood forest product is a estimation.
2	Forest Service (LBB)/ FAO; Wood Processing Industry Survey within the FAO Forestry project GCP/SUR/001/NET, 1999.	Employment in logging, log transport, timber processing and non-wood forest product.	1999	The source of FRA 2000 is based on a Wood processing industry survey within a FAO forestry project GCP/SUR/001/NET, executed in 1999. Employment data of the processing industry is based on this survey. Employment data of other activities as logging, log transport the production of non-wood forest products are based on estimations.
3	SBB, personal communication with the planning department.	Employment in logging, log transport, timber processing and non-wood forest product.	2005	Based on the wood production and economic activities in the forest sector and a random survey and interviews.
4	SBB assessment	Employment in logging, log transport, timber processing and non-wood forest product.	2009	Based on the wood production and economic activities in the forest sector and a random survey and interviews.

19.2.2 Classification and definitions

National class	Definition
Primary production of goods	Employment in activities related to primary production of goods, like industrial round wood, wood fuel and non-wood forest products.
N/A	N/A
N/A	N/A
N/A	N/A

19.2.3 Original data

Employment figures for Primary production of goods are constructed as follow:

In 1990, 2600 people were working in the primary production of goods, of which 2,400 in the industrial round wood and fuel wood production which was recorded in 1989. While it was estimated that the production of non-wood forest products provided employment to another 200 people.

In 2000, 3,000 people were working in the primary production of goods, of which 2,800 in the industrial round wood and fuel wood production which was recorded in 1999. While it was estimated that the production of non-wood forest products provided employment to another 200 people. The figures of provision of services and unspecified forestry activities are estimations.


In 2005, 5,000 people were working in the primary production of goods, of which 4,750 in the industrial round wood and feul wood production which was recorded in 2003. While it was estimated that the production of non-wood forest products provided employment to another 250 people.


Estimation and forecasting

Recently the gold mining sector is booming, because of the increased gold price on the international market. Labors from other sectors, including the forest sector are shifting to the gold sector, as well as labors for the mining companies as free lance gold miners. To fill the gape logging companies are employing foreign labors.

19.3 Data

Table 19

Category		Employment (000 years FTE)			
		1990	2000	2005	2010
	Employment in forestry	2.4	2.8	4.75	5.5

	... of which female	N/A	N/A	N/A	0.01
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19.4 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	People directly employed in forestry are laborers for forest planing, inventory and logging activities.	The employment figures reported for the years 1990, 2000 and 2005 are total employed labors in the forest sector, including planning, inventory, logging, log transport and timber processing. The figures of 2010 are labors employed for forest planning, inventory and logging. A significant part of the laborers within the forest sector are members of forest based communities. Recently it is noticed that the forest sector employes also foreign laborers. The total number of employed with in the forest sector in 2010 was 5,500.

Other general comments to the table

NA

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)	109	Suriname dollar (SRD)	2011

20.3 Comments

Category	Comments
N/A	The presented figure includes logging, timber transport, timber processing and export of timber products. Non wood forest products and other forest products are not included. In 2011 the contribution of these mentioned activities was 1.7% to the GDP. When non wood forest products and fire wood are included it is estimated that the contribution of the forest sector to the GDP will increase until 2%. The timber production and production of other forest products are increasing and the prediction is that it will increase steadily in the coming years. The nominal figure of the contribution of forestry to the GDP is increasing, but due to the increased production of gold and the increased gold price on the world market the real contribution is declined.

Other general comments

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

Documents for this question:

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

21.1 Categories and definitions

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

21.2 National data

21.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Development plan 2012 - 2016.	National planning.	2012 - 2016	NA
2	Suriname, Second National Communication to the United Nations Framework Convention on Climate Change.	Change of forest area.	2013	NA
3	Results of the ACTO initiated project "Monitoring deforestation, logging and land use change in the Pan Amazonian forest.	Forest Cover Change.	2013	Within this project a deforestation map 2000-2009 has been produced where it was estimated that the deforestation rate is 4000 ha/year.
4	Expert opinion.	Deforestation rate.	N/A	There is a possibility that natural regeneration as well as reforestation might take place which may decrease the absolute deforestation area. This is not considered in these tables.

21.3 Data

Table 21a

Category	Forest area (000 ha)	
	2020	2030
Government target/aspiration for forest area	15312	15272

Table 21b

Category	Forest area (000 ha)
	2013
Forests earmarked for conversion	95

21.4 Comments

Category	Comments
Government target/aspiration for forest area	The predicted forest area in 2020 and 2030 are based on the historical deforestation rate and a Busseniss as usual scenario. As Suriname is in the early stage of its development it might be expected that for the national development more forest area will be deforested.
Forests earmarked for conversion	Based on the project idea's and projects initiated by the government an indication can be given of the surface of the planned conversion forest areas. The following projects/project idea's can lead to deforestation: 1. The expansion of the existing road network with the predicted deforestation of an area of about 2,000 ha. 2. The establishment a sugar cane plantation within a marsh forest of about 1,500 ha. 3. The establishment of oil palm plantation within a total forest area of 90,000 ha. 4. The expansion of the existing paddy cultivation area with 30,000 ha, within swamp forest. 5. The implementation of cattle, sheep and goat breeding projects in the interior on an area of 10,000 ha. 6. The implementation of large scale gold- and bauxite mining projects will lead to deforestation of 3,050 ha of forest.

Other general comments

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