GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

Viet Nam

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.

The content and the views expressed in this report are the responsibility of the entity submitting the report to FAO. FAO may not be held responsible for the use which may be made of the information contained in this report.

TABLE OF CONTENTS

Report preparation and contact persons

Contact persons

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

Name (FAMILY NAME, first name)	Institution/address	Email	Tables
Nguyen Danh Thanh Hai	Forest Protection Department. Vietnam Forest Administration (VNFOREST), Ministry of Agriculture and Rural Development.	hai@kiemlam.org.vn	N/A
Hieu Minh	Vietnam Forest Administration (VNFOREST), Ministry of Agriculture and Rural Development	hieuminh08@gmail.com	N/A
Hoang Viet Anh	Vietnam Academy of Forest Science	hoangvietanh@gmail.com	N/A
N/A	N/A	N/A	N/A

Introductory Text

Place an introductory text on the content of this report

Vietnam has been carrying out National Forest Inventory, Assessment and Monitoring of Forest Resources Change Program since 1991. This Program aims to establish forest resource map based on ETM, SPOT images, field checks and data from primary permanent sample plots. This Program is reviewed each 5 years. The results of Program will be used for National Forest Development Strategy and Planning as well as National Forest Development Policies.

However, data of the Program does not cover all needed information for FRA 2010. Therefore, additional sources are used to collect data for FRA 2010 such as: Forestry Inventory and Planning Institute (FIPI), Department of Forestry (DoF), Forestry Protection Department (FPD), Forestry Support Sector Program (FSSP) and others.

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 *(sub-category)*	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 *(sub-category)*	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 *(sub-category)*	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 *(sub-category)*	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 *(sub-category)*	Re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.

1.2 National data

1.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Database of Forest Inventory and Planning Institute (FIPI) and Ministry of Agriculture and Rural Development (MARD)	N/A	1992	N/A

2	Database of Forest Inventory and Planning Institute (FIPI) and MARD	N/A	1995	N/A
3	Database of Forest Inventory and Planning Institute (FIPI) and MARD	N/A	2000	N/A
4	Database of Protection Forest department (PFD) and FIPI	N/A	2002	N/A
5	Database of Protection Forest Department (PFD) and FIPI	N/A	2003	N/A
6	National program for surveying, evaluating the changes of forest resources	N/A	2005	N/A
7	National program for surveying, evaluating the changes of forest resources	N/A	2010	N/A
8	Database of Protection Forest Department (PFD)	N/A	2004	N/A
9	National plan for forest protection and development 2011 - 2020	2015 trend prediction	2010	N/A

1.2.2 Classification and definitions

National class	Definition
Forest	A site of at least 0.5 ha, with trees higher than 3 m and the canopy cover 0.3 or the growing stock over than 30m3/ha. It includes forest plantations. - Bamboo of such a mentioned canopy and at least 5000 stem/ha.
Unused land Land Type I C	The IC means
Afforestation	Same as 2015 definition.
Reforestation	Re-establishment of forest through planting and/or deliberate seeding on land classified as forest. (Same to FAO definition in 2010)
Natural expansion of forest	Expansion of forests through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture). (Same to FAO definition in 2010 and in 2015)

1.2.3 Original data

The general statistics office of Vietnam (http://www.gso.gov.vn /) provides following national statistics for the year 2012.

All country	33095.1

Agriculture land	26280.5
Agriculture production land	10151.1
Annual crop	6401.3
Rice	4092.8
Grass land for grazing	45.5
Other annual crop	2263.0
Perennial crop	3749.7
Forestry land	15373.1
Production forest	7406.6
Protection forest (soil and water protection)	5827.3
Special use forest	2139.2
Aquaculture land	712.0
Salt production land	17.9
Other agriculture land	26.5
None agriculture land	3740.6
Residential land	690.9
Urban residential land	141.3
Rural residential land	549.6
Special used land	1846.8
Office and official building land	19.6
Military land	331.0
None-agriculture production land	267.3
Public used land	1228.9
Religious land	14.9
Cementary land	101.0
Special use water body	1082.9

Other none-agriculture land	4.1
Un-used land	3074.0
Flat un-used land	235.8
Hilly un-used land	2549.0
Rocky mountain un-used land	289.2

Forest area in 2005 data from Forset Protection Department

Forset type	2005	By forest function		
		Protection	Special use	Production
Total Area	33019611	0	0	0
I. Forested land	12616699.7	6172061.94	1958320.24	4486317.52
A. Natural forest	10283173.2	5302651.79	1874828.5	3105692.91
1. Woody forest	8113580.35	4148209.1	1498289.28	2467081.97
2. Bamboo foret	783667.26	341889.33	83500.02	358277.91
3. Mixed woody + bamboo forest	684957.54	314706.82	119118.17	251132.55
4. Mangrove	63263.49	40458.43	11009.85	11795.21
5. Rocky mountain forest	637704.51	457388.11	162911.18	17405.22
B. Plantation forest	2333526.48	869410.15	83491.74	1380624.59
1. Plantation forest with volume	825485.13	317187.58	32208.27	476089.28
2. Young plantation forest without volume	1209882.45	468992.63	48132.91	692756.91
3. Bamboo	86911.43	11133.16	235.31	75542.96
4. Industrial tree (cashew, rubber, other)	211247.47	72096.78	2915.25	136235.44
II. Bare land	6411989.85	3377416.69	417715.8	2616857.36

1. Ia (bare land with only grass)	1968270.06	980905.34	119843.96	867520.76
2. Ib (bare land with shrub)	2071765.87	1041230.27	134433.96	896101.64
3. Ic (bareland with shrub + scatter woody tree)	1790787.81	944022.63	142922.28	703842.9
4. rocky mountain without forets	344575.58	240359.81	16187.76	88028.01
5. Sand dune, swamp	236590.53	170898.64	4327.84	61364.05
III. Other land	13990921.5	0	0	0

The general statistics office of Vietnam (http://www.gso.gov.vn /) provides following national statistics for the year 2007.

Land Use in 2007		Total area in 000 ha
Agricultural land		**9,407**
	Annual crops land	5,978
	Miscellaneous gardens	623
	Perennial crops land	2,213
	Weed land for animal raising	40
	Water surface land for fishing	553
Forestry land covered by trees		**12,051**
Specially used land		**1,615.9**
Homesteadland		**451.3**
Unused land and river, spring, mountain		**9,405**

	Unused flat land	536
	Unused mountainous land	7,137
	Unused water surface land	150
	River and spring	749
	Non tree rock mountain	618
	Other unused land	215
WHOLE COUNTRY		**32,930**

FRA Category	Forest area in "000"ha						
	1990	**1995**	**2000**	**2002**	**2003**	**2005**	**2007**
Natural forest	8,396	8,252	9,675	9,879	10,004	10283	10,284
Plantation forest	745	1,050	1,638	1,914	2,090	2,334	2,553
Total forest	**9,141**	**9,302**	**11,315**	**11,793**	**12,094**	**12,617**	**12 837**
Rubber Plantations	222	278	412	429	436	460	550
Other Wooded land	na	na	1,816	2,166	2,082	1,791	1,524
Other Land with trees	na	na	na	na	na	na	n.a.

Source of data year 2005, 2007: Forest Protection Department, Forestry Program No.32, data of rubber plantation is collected by Center for Information and Statistics of Ministry of Agriculture and Rural Development.

Forest expansion, reforestation

There is no data of plantation of each species. The following is main species for plantations:

TT	Common name	Scientific name

1	Lát Mexico	Cedrela odorata
2	Lát hoa	Chukrasia tabularia A.Juss
3	Trám trắng	Canarium album (Lour.) Raeusch
4	Keo lai	Acacia mangium x Acacia. Auriculiformis
5	Keo tai tượng	Acacia mangium Wild
6	Keo lá tràm	Acacia auriculiformis
7	Keo lưỡi liềm	Acasia crassicarpa A.Cunn. ex Benth
8	Bạch đàn Urophylla	Eucalyptus. urophylla S.T.Blake
9	Bạch đàn Camall	Eucalyptus camaldulensis Dehanh
10	Phi lao	Casuarina equesetifolia Forst et Forst f
11	Xà cừ	Khaya senegalensis (Desr) A.Fuss
12	Hoè	Sophora Japonica L
13	Trẩu	Vernicia montana
14	Xoan ta	Melia azedarach
15	Tếch	Tectona grandis
16	Mỡ	Mangletia conifera Dandy
17	Bồ đề	Styrax tonkinensis (Pierre) Craib ex Hardw
18	Chè đắng	Ilex kaushue S.Y.Hu
19	Tông dù	Toona sinensis (A.Juss) M.Roem
20	Tre điềm trúc	Dendracalamus ohlami Kengf
21	Luồng	Dendrocalamus membranceus Munro
22	Trúc sào	Phyllostachys pubescens Majiel ex.H.de lehaie

23	Quế	Cinnamomum casia (L.) J.Presl
24	Thông mã vĩ	Pinus masoniana Lamb
25	Thông nhựa	Pinus merkusii Jungh.et.de Vries
26	Thông caribê	Pinus caribaea Morelet
27	Thông 3 lá	Pinus kesiya Royle ex Gordon
28	Sa mộc	Cinnamomum casia (L.) J.Presl
29	Hồi	Illicium verum Hook.f
30	Sồi phảng (dẻ bốp, cồng)	Lipthocarpus fissus Champ. ex benth
31	Huỷnh	Tarrietia javanica Blume
32	Dó trầm	Aquilarria crassna Pierre ex lecomte
33	Bông gòn	Ceiba pentandra (L.) Gaertn
34	Dầu rái	Dipterocapus alatus Roxb.Ex.G.Don
35	Sao đen	Hopera odorata Roxb
36	Giổi xanh	Michelia meriocris Dandy
37	Bơì lời đỏ	Litsea glutinosa (Lowr.) C.B.Rob
38	Xoan mộc	Toona suremi Blume Merr
39	Đước	Rhizophora apiculata Blume
40	Tràm cừ	Melaleuca cajuputi Powell
41	Tràm Lơca	Melaleuca leucadendra L

1.3 Analysis and processing of national data

1.3.1 Adjustment

Forest area

FRA Category	Forest area in "000"ha						
	1990	1995	2000	2005	2010	2011	2012
Natural forest	8,396	8,252	9,675	10,283	10,305	10,285	10,424
Plantation forest	745	1,050	1,638	2,334	3,083	3,230	3,438
Rubber Plantations	222	278	412	460	740	802	911
Other Wooded land			1,816	1,791			
Other land	21 644	21 427	17 466	16 139	16 395	16 139	16 096
Other Land with trees	na	na	na	na	na	na	n.d.a.
Inland water body	1,924	1924	924	1,924	1,924	1,924	1,924
Total Area of Country	32,931	32,931	32,931	32,931	32,931	32,931	32,931

Source of data year 2005: Forest Protection Department, Forestry Program No.32, data of rubber plantation is collected by Center for Information and Statistics of Ministry of Agriculture and Rural Development.

Calibration is carried out in order to ensure that the total land area/country area match the official UN statistics in FAOSTAT.

FAOSTAT figures for 2005:

Land area: 31 007 (000ha)

Inland water: 1 924 (000ha)

Country area: 32 931 (000ha)

The difference between the total country area and the sum of forest, other wooded land and inland water has been considered as other land.

1.3.2 Estimation and forecasting

Forest area

Only forecasting has been done to develop figures for Forest (natural forest, forest plantation) for 2010 since the original figures for 1990, 2000, 2005 and 2007 are available. The rubber plantation in year 2010 (630 ha) is come from the rubber development plan.

To use the long time series data in case of natural forests and forest plantation the regression method has been used.

FRA Category	Forest area in "000"ha			
	2015	**2000**	**2005**	**2010**
Natural forest	10,654	9,675	10,283	10,305
Plantation forest	3,239	1,638	2,334	3,083
Rubber Plantations	800	412	460	740
Other Wooded land	NA	1,816	1,791	
Other land	21 644	17 466	16 139	16,087
Other Land with trees	n.d.a.	n.d.a.	n.d.a.	n.d.a.
Inland water body	1924	1924	1924	1924
Total Area of Country	32,931	32,931	32,931	32,931

Other wooded land and other land

Other wooded land has been recalculated based on Vietnam original data for 2000, 2005 and 2007.

The other land has beed deducted accordingly (the figure is close to the original data provided above).

		Vietnam original data		

	1990	2000	2005	2007	2010	2015
Other Wooded land	1841	1816	1791	1524	1124	456

1.3.3 Reclassification

Forest area

National land use classes	Percentage of a national class belonging to FRA class			
	Forest	**Other wooded land**	**Other land with tree**	**Other land**
Natural Forest	100			
Plantation Forest	100			
Rubber Plantation	100			
Other wooded land		100		

1.4 Data

Table 1a

Categories		Area (000 hectares)				
		1990	**2000**	**2005**	**2010**	**2015**
CFRQ	Forest	9363	11727	13077	14128	14773
CFRQ	Other wooded land	1841	1816	1791	1124	456
CFRQ	Other land	21166	17563	16139	15755	15778
CFRQ	... of which with tree cover	N/A	N/A	N/A	N/A	N/A
CFRQ	Inland water bodies	554	1818	2114.2	2088.7	2088.7
	TOTAL	32924.00	32924.00	33121.20	33095.70	33095.70

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
CFRQ	Forest expansion	37.98	175.084	682.157	304.473	N/A	N/A	N/A	N/A
CFRQ	... of which afforestation	32.26	118.245	138.92	197.571	N/A	N/A	N/A	N/A
CFRQ	... of which natural expansion of forest	5.72	56.839	543.237	106.902	N/A	N/A	N/A	N/A
CFRQ	Deforestation	N/A	N/A	N/A	3.942	N/A	N/A	N/A	N/A
CFRQ	... of which human induced	N/A	N/A	N/A	3.942	N/A	N/A	N/A	N/A
CFRQ	Reforestation	116.72	209.54	327.785	37	N/A	N/A	N/A	N/A
CFRQ	... of which artificial	N/A	N/A	N/A	37	N/A	N/A	N/A	N/A

Tiers

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

Tier criteria

Category	Tier for status	Tier for reported trend
• 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 country report has added area of rubber in the area of forest for the purposes of reporting to FRA only.	Data of year year 2010 is calculated based on its interrelation for: (i) Forest và (ii) Other wooded land). Trend prediction for 2015 is based on "National plan for forest protection and development 2011 - 2020"

Other wooded land	N/A	Decline in OWL is due to conversion of many OWL areas into forest plantation or estate crops
Other land	For reporting to FRA purposes only, the country report has adopted the FAOSTAT figures and has adjusted all the differences in area of "Other land".	N/A
Other land with tree cover	N/A	N/A
Inland water bodies	N/A	Increase in inland water body figures between 1990, 2000,2005, 2010 is due to creation of many new hydro-power dams in Vietnam. Between 1990 to 2010 there are more than 50 hydro-power plants were put into operation
Forest expansion	The same to FRA 2010	Data of natural expansion has changed so much because Vietnam launched the 5 million ha of reforestation programme. Natural expansion forest is one component in the programme. The farmers get forestry land and they want to improve natural forest by natural regeneration.
Deforestation	N/A	N/A
Reforestation	Data is calculated from plantation Wood removals and average yield per ha.	We have no data for reforestation every year. Area of reforestation are included in afforestation. But from other source, reforestation can calculated for reforestation: Most of plantation are belonged to households or forest companies. After cutting on plantation area which are plated in the same year or next year because the land is suitable for planting. these areas are planted in priority. From harvesting wood on plantation and average yield per ha of plantation we calculate the area of cutting. This area is reforestation per year.

Other general comments to the table
Vietnam has launched the program of forest resources inventory and monitoring every 5 year. Earlier the data of forest was published by the government at interval of 5 years but from 2002 data the data is ratified and published every year. The forestry officer of each commune yearly sends the data to higher level, which is finally aggregated at the national level. The Forest inventory and planning institute (FIPI) directly collects and analyses the data through its Forest Resources Inventory Assessment and Monitoring Program (FRIAM). The data from Protection Forest Department (PFD) is the statistics collected from local level up to national level.

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 <u>outside</u> its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).
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 *(sub-category)*	Other naturally regenerated forest where the trees are predominantly of introduced species.
...of which naturalized *(sub-sub category)*	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 *(sub-category)*	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 *(sub-category)*	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	Data base of FIPI and MARD	Characteristics	1992	N/A
2	Data base of FIPI and MARD	Characteristics	1995	N/A
3	Data base of FIPI and MARD	Characteristics	2000	N/A
4	Database of PFD and FIPI	Characteristics	2002	N/A

5	Database of PFD and FIPI	Characteristics	2003	N/A
6	Database of PFD and FIPI	Characteristics	2005	N/A
7	Database of PFD and FIPI	Characteristics	2010	N/A

2.2.2 Classification and definitions

National class	Definition
Rich Forest	Forest of native species, where there are no clearly visible indications of human activities, the ecological processes are not significantly disturbed and they contain high standing volume (the forest type IV or IIIB).
Impact natural forest	Forest of naturally regenerated native species where there are clearly visible indications of human activities.
Semi-natural	Forest of native species, established through planting, seeding or assisted natural regeneration. But in Vietnam it is not separate semi-natural from impact Natural forest . So that semi-natural forest is included in impact Natural forest.
Productive plantation	Forest of introduced species and in some cases native species established through planting or seeding mainly for production of wood or non-wood goods.
Protective plantation	Forest of native or introduced species, established through planting or seeding mainly for provision of services. Forest of native species which is established on bio-diversity open land is included protective plantation in the national reporting table.

2.2.3 Original data

National Category	Sub-Category	Area in "000" ha.				
		1990	1995	2000	2005	2010
Natural forest						
	Rich forest	384	289	187	85	CK4
	Other forest types	8,012	7,963	9,488	10,198	CK4
	Total	**8,396**	**8,252**	**9,675**	**10,283**	**CK4**
Plantation excluding rubber						
	Production	442	623	972	KTRA	KTRA

	Protection	272	384	599	KTRA	KTRA
	Bio-diversity	31	43	67	KTRA	KTRA
		745	**1,050**	**1,638**	**2,648**	**KTRA**
Rubber		**222**	**278**	**412**	**460**	740

2.3 Analysis and processing of national data

2.3.1 Adjustment

2.3.2 Estimation and forecasting

A. Rich Forests

The rich forest area in 2005 has been forecasted with the help of linear extra-polation using data of two last points in time (1995 and 2000) since regression is not advisable with only three points in time.

The area of Rich forest in 2010 = CK4 (000 ha)

The area of reach forest in 2015 = ????????? (000 ha)

B. Other forest types

The area of other forest types for 2005 is simply the area of natural forests in 2005 (Table 1) after excluding the above area of rich forests in 2005.

The area of "Other forest types" in natural forests in 2010 = CK4 (Total of Natural forest area)

− CK4 (Rich forest area)= ???????? (000 ha)

The area of "Other forest types" in natural forests in 2015 = ???????? (Total of Natural forest area)

− ??????? (Rich forest area)= ????????? (000 ha)

C. Area of Plantations

To capture the latest trend in relative categories (Productive, Productive and biodiversity conservation) of plantations the ratio among different categories of plantations in 2003 have been applied to the total area of forest plantation (excluding rubber) forecasted for 2005 in Table 1 and the same has been done for 2010.

FRA Category	Forest area in "000"ha							
	1,990	1,995	2,000	2,002	2,003	2,005	2,007	2,010
Natural forest	8,396	8,252	9,675	9,879	10,004	10,283	10,284	10,305
Plantation forest	745	1,050	1,638	1,914	2,090	2,334	2,553	3,083
Rubber Plantations	222	278	412	429	436	460	550	740
Total forest	**9,363**	**9,580**	**11,725**	**12,222**	**12,530**	**13,077**	**13,387**	**14,128**

Category of Plantation	2003	%	Area in 2005 (000 ha)	Area in 2010 (000 ha)
Production Plantations	1,238	59	1 382	2276
Protection Plantations	760	36	849	614
Bio-diversity Plantations	92	4	103	80
Total	**2,090**		**2334**	**2960**

Category	1990	2000	2005	2010

Rich forest	384	187	85	80
Other forest types	8012	9488	10198	10260
Production Plantations	442	972	1383	1707
Protection Plantations	272	599	849	1048
Bio-diversity Plantations	31	67	103	127
Rubber Plantations	222	412	460	630
Total	**9,363**	**11,725**	**13,077**	**13,798**

2.3.3 Reclassification

National Category	**FRA 2005 Category**		
	Primary	**Other Naturally regenerated forest**	**Planted forest**
Rich forest	100		
Other forest types		100	
Production Plantations			100
Protection Plantations			100
Bio-diversity Plantations			100
Rubber Plantations			100

2.4 Data

Table 2a

Categories		Forest area (000 hectares)				
		1990	**2000**	**2005**	**2010**	**2015**
CFRQ	Primary forest	384	187	85	83	83

CFRQ	Other naturally regenerated forest	8012	9488	10283	10222	11027
CFRQ	... of which of introduced species	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which naturalized	N/A	N/A	N/A	N/A	N/A
CFRQ	Planted forest	967	2052	2709	3823	3663
CFRQ	... of which of introduced species	N/A	N/A	N/A	N/A	N/A
TOTAL		9363.00	11727.00	13077.00	14128.00	14773.00

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

Table 2c

Categories	Area (000 hectares)				
	1990	2000	2005	2010	2015
Mangroves (forest and OWL)	73	70.684	62.073	261.74	270
... of which planted	N/A	N/A	N/A	207.835	N/A

Tiers

Category	Tier for status	Tier for reported trend
Primary forest	Tier 3	Tier 2
Other naturally regenerated forest	Tier 3	Tier 2
Planted forest	Tier 3	Tier 2
Mangroves	Tier 3	Tier 2

Tier Criteria

Category	Tier for status	Tier for reported trend

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

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	There is data of primary forest converted to other in total but no specific for categories as referring on table 2b	N/A
Other naturally regenerating forest	N/A	N/A
Planted forest	N/A	N/A
Mangroves	Data for 1990 were calculated from Landsat TM and ground survey. Data for 2000 were calculated from Landsat TM, 2005 and 2010 from SPOT 5. Data for 2010 is including plantation Mangrove which was not accounted before in FRA 2010. That is why the value of 2010 is increased.	Data from 1990 to 2005 do not include Mangroves plantation.

Other general comments to the table
N/A

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

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

3.1 Categories and definitions

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

3.2 National data

3.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forest Inventory and Planning Institute and MARD	Growing stock	1989	N/A
2	Forest Inventory and Planning Institute and MARD	Growing stock	1995	N/A
3	Forest Inventory and Planning Institute and MARD	Growing stock	1999	N/A
4	FRA 2010 guidelines	default values for AG-Biomass and BG-Biomass; default values for carbon	N/A	Annex 5

5	Forest Inventory and Planning Institute and MARD	Growing stock	2005	N/A
6	Forest Inventory and Planning Institute and MARD	Growing stock	2010	N/A

3.2.2 Classification and definitions

National class	Definition
Growing stock	Volume over bark of all living trees more than 8 cm in diameter at breast height (1.3 m). Includes the stem from ground level or stump height up to a top of the tree.
N/A	As required by FAO, forest growing stock should be calculated for volume with bark. Vietnam definition on the mentioned entities is mainly similar to FAO proposal, however stock is not calculated for the land with trees with stock. According to Vietnam definition, the stock only accounts for forest with stock at least of 30m3/ha and upward. Some of the regulated stock thresholds for calculation can bee seen below
Growing stock	It is the over bark standing volume of (standing) trees with diameter of 10 cm and more at the breast height (dbh) or above the buttress (if higher than breast height). Explanation: It includes the stump above the ground surface with minimum diameter of 10 cm. It includes volume of merchantable branches up to a diameter of 5 cm
N/A	No information on national classification and definitions relevant to the biomass and carbon stock is available

3.2.3 Original data

Growing stock

The FIPI carried out a complete national forest inventory in 1989 but only for the natural forests and submitted to government for publication. From 1991 – 1995, FIPI implemented the program on assessment and monitoring the change of forest resources. The program assessed the state of forest on 5-year cycle. It provided data in 1995. The FIPI carried out another complete national forest inventory in 1999 and that covered both the natural forest and the plantations.

Following table contains national data on over bark growing stock reflecting stem volume including volume of merchantable branches up to a diameter of 5 cm.

Unit: area: ,000ha; Volume: ,000m^3

Categories	1989	1995	1999

	Area	Growing stock	Area	Growing stock	Area	Growing stock
Natural Forest	8,396	638,096	8,252	627,152	9,676	754,728
Plantation Forest	745	n.a.	1,050	22,050	1,639	31,141
Total	**9,141**	**n.a.**	**9,302**	**649,202**	**11,315**	**785,869**

The species wise details of growing stock are not available prior to 1995.

Biomass stock

Since no original data on biomass is available, estimates have been carried out following FRA 2010 Guidelines and using IPCC default values for conversion from growing stock to biomass.

Carbon stock

The default value of 0,47 has been used to estimate carbon.

3.3 Analysis and processing of national data

3.3.1 Adjustment

3.3.2 Estimation and forecasting

Growing stock

A. Growing Stock in Forests

The inventory figures of 1989 and 1999 are being assumed for 1990 and 2000 respectively. The per hectare growing stock in forests in 2005 is assumed same as in 2000 (78 m ^{3} / ha). This per hectare figure has been multiplied by the area of forest in Table 1 to forecast growing stock in forest in 2005.

Categories	Growing Stock (000 m3) in Forests		
	CK4	2000	2005
Growing stock (000 m3)	638,096	754,728	802,157

Area (000 ha)	8,396	9,675	10,283
Growing stock/ha (m3/ha)	76	78	78

According to counted data, it is about 74 m3/ha of Growing stock/ha in year 2005. It would be no change in the Growing stock/ha of forest in year 2010. We know that 74m3/ha is not maximum standing volume. It means that the growing stock/ha is increased about 1.5-2% per year. After 5 years the growing stock/ha must be higher. But after 5 years natural forest is added a big area by natural regeneration. These areas are generally low of growing stock. Two process make growing stock not changed so much.

Categories	Growing Stock (000 m3) in Forests ???????????			
	1990	**2000**	**2005**	**2010**
Growing stock (000 m3)	638,096	754,650	760,942	761,164
Area (000 ha)	8,396	9,675	10,283	10,286
Growing stock/ha (m3/ha)	76	78	74	74

B. Growing Stock in Forest Plantations (excluding Rubber)

The 1999 growing stock in forest plantations is being assumed for 2000. The per hectare growing stock in plantation in 1995 is being assumed for 1990 and that in 2000 for 2005 as well. The growing stock in forest plantations (excluding rubber) in 1990 and 2005 has been calculated by using the per hectare growing stock figures assumed above and the area reported in Table 1.

Categories	Growing Stock (000 m3) in Forest Plantations??????????				
	1995	**2000**	**1990**	**2005**	**2010**
Growing stock (000 m3)	22,050	31,122	15,645	44 346	54,749
Area (000 ha)	1050	1,638	745	2 334	2,882
average growing stock (m3/ha)	21	19	21	19	19

Growing stock of forest plantation is low because they are recently established.

According to counted data, it is about 23 m3/ha of Growing stock/ha in year 2005 of plantation. It would be no change in the Growing stock/ha of plantation in year 2010.

Categories	Growing Stock (000 m3) in Forest Plantations				
	1,995	**2,000**	**1,990**	**2,005**	**2,010**
Growing stock (000 m3)	22,050	31,122	15,645	53,682	66,286
Area (000 ha)	1,050	1,638	745	2,334	2,882
average growing stock (m3/ha)	21	19	21	23	23

C. Growing Stock in Rubber Plantations

No figures are available to estimate growing stock in rubber plantations. Therefore per hectare growing stock figures of forest plantations have been assumed for Rubber plantations.

Growing stock in rubbert plantation recalculated using data from Question 1.

Reference Year					
Categories	1990	2000	2005	2010	2015
Growing stock/ ha in forest (m3/ ha)	21	19	23	23	23
Rubber plantations Area (000 ha)	**222**	**412**	**460**	**740**	**911**
Rubber wood GS (000 m3)	**4,662**	**7,828**	**10,580**	**17020**	**20953**

The data for 1999 of species-wise growing stock has been assumed for 2000 and it has been sorted to identify top 10 species in terms growing stock for the year 2000. The species wise details of growing stock are not available prior to 1995. Therefore, the growing stock for 1990 has been apportioned in same species-wise ration as in 2000 assuming that the percentage species composition of the growing stock in 2000 also holds good for 1990.

	1,990	**2,000**	**2,005**	**2,010**

Natural forest	638,096	754,728	802,157	802,352
Plantations	15645	31122	44346	54,749
Rubber plant	4,662	7,828	8,740	13,015
Total growing stock	**658,403**	**793,678**	**855,243**	**870,115**

Categories	Growing Stock (000 m3) Forest excl. Rubber				
	1990	2000	2005	2010	
Natural forest	638,096	754,650	760,942	761,164	
Plantations	15,645	31,122	53,682	66,286	
Total growing stock excl. rubber plantations	653,741	785,772	814,624	827,450	
GS/ha	72	69	65	61.8053481	

Growing Stock	1990	2000	2005	2010	2015
Forest	653741	785772	814624	827450	856,746
Rubber plant	4,662	7,828	10,580	17,020	20,953
Total growing stock	658403	793600	825204	844470	877,699

Biomass stock

For Above ground biomass the following factors have been used:

Conifers: 0.9

Broadleaved: 2

For below ground biomass the coefficient of 0.275 has been adopted.

3.3.3 Reclassification

Growing stock		
National Classification	**Percentage of a National Class to a FRA Class**	
	Growing Stock	**Commercial Growing Stock**
Growing stock	100	

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**
CFRQ	Total growing stock	658	794	825	844	878	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which coniferous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which broadleaved	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3b

Category/Species name			Growing stock in forest (million cubic meters)			
Rank	**Scientific name**	**Common name**	**1990**	**2000**	**2005**	**2010**
1 st	Lagerstromia calyculata	Bằng lăng	19	21	22	24
2 nd	Lythocarpus ducampii	Dẻ đỏ	18	20	21	22.1
3 rd	Vatica odorata var. brevipetiolata	Táu mật	14	16	17	18.5
4 th	Shorea obtusa	Cà chắc	14	15	16	17.5

5 th	Lithocarpus deabatus	Dẻ trắng	13	14	15	16.8
6 th	Schima khasiana	Vối thuốc	12	13	13	14.2
7 th	Quercus spp	Sồi quang	12	13	13	14.6
8 th	Syzygium wightianum	Trâm trắng	12	13	13	14.2
9 th	Madhuca pasquieri	Sến mật	10	11	12	13.1
10 th	Nephelium melliferum	Trường vải	10	11	11	12
Remaining			524	647	672	677
TOTAL			658.00	794.00	825.00	844.00

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

Item	Value	Complementary information
Minimum diameter (cm) at breast height of trees included in growing stock (X)	8 cm	Tree with minimum diameter of 8 cm at breast height (1.3 m) is included in calculation of growing stock
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	5 cm	Minimum diameter of 5 cm at the top end of stem for calculation of growing stock
Minimum diameter (cm) of branches included in growing stock (W)	N/A	In Vietnam, branches are not calculated for growing stock
Volume refers to above ground (AG) or above stump (AS)	AG	In Vietnam, volume refers to "above ground"

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	3	3	3	3	4
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	1297	1546	1608	1645	1710	N/A	36.2	128.2	66.9	62.4
CFRQ	Below ground biomass	356	425	442	452	470	N/A	9.7	34.6	18	16.8
CFRQ	Dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		1653.00	1971.00	2050.00	2097.00	2180.00	.00	45.90	162.80	84.90	79.20

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	610	727	756	773	804	N/A	18	64	33.4	31.2
CFRQ	Carbon in below ground biomass	168	200	208	213	221	N/A	4.86	17.28	9	8.4
CFRQ	*Subtotal Living biomass*	777	927	963	986	1025	N/A	N/A	N/A	N/A	N/A
CFRQ	Carbon in dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CFRQ	Carbon in litter	49	61	68	72	N/A	N/A	N/A	N/A	N/A	N/A
CFRQ	*Subtotal Dead wood and litter*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CFRQ	Soil carbon	440	551	615	651	651	N/A	N/A	N/A	N/A	N/A
TOTAL		1267.00	1539.00	1647.00	1709.00	1676.00	.00	22.86	81.28	42.40	39.60

Tiers

Variable/category	Tier for status	Tier for trend
Total growing stock	Tier 3	Tier 2
Net annual increment	Tier 2	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

• 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	N/A	N/A
Growing stock of broadleaved coniferous	Vietnam do not separate growing stock of conifer and broad leaf. However the area of conifer forest is relatively small	N/A
Growing stock composition	Vietnam do not separate growing stock of conifer and broad leaf.	The 1990 figures are based on intra-species composition of 2000
Net annual increment	N/A	N/A
Above-ground biomass	Coefficient of coniferous: 0.9 Coefficient of broadleaved: 2.0	N/A
Below-ground biomass	Coefficient 0.275	N/A
Dead wood	Data not available	N/A
Carbon in above-ground biomass	N/A	N/A
Carbon in below-ground biomass	BGB = 0.27 * AGB	N/A
Carbon in dead wood	Data not avaiable	N/A
Carbon in litter	Coefficient 5.2 t/ha	N/A
Soil carbon	Coefficient 47 t/ha	N/A

Other general comments to the table
For 2010 and 2015, the above ground biomass and biomass carbon is calculated using country specific data for growing stock of each forest type.

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	Database of Forest Inventory and Planning Institute and MARD	N/A	1992	N/A
2	Database of Forest Inventory and Planning Institute and MARD	N/A	1995	N/A
3	Database of Forest Inventory and Planning Institute and MARD	N/A	2000	N/A
4	Database of Forest Inventory and Planning Institute and MARD	N/A	2002	N/A
5	Database of Forest Inventory and Planning Institute and MARD	N/A	2003	N/A

| 6 | Database of Forest Inventory and Planning Institute and MARD | N/A | 2005 | N/A |
| 7 | Database of Forest Inventory and Planning Institute and MARD | N/A | 2007 | N/A |

4.2.2 Classification and definitions

National class	Definition
Production function	Forest / Other wooded land designated for production and extraction of forest goods, including both wood and non-wood forest products.
Social services function	Forest / Other wooded land designated for the provision of social services, which composes of conservation of bio-diversity
Multiple purpose function	Forest / Other wooded land designated to any combination of: production of goods, protection of soil and water, conservation of biodiversity and provision of social services and where none of these alone can be considered as being significantly more important than the others.
No or unknown function	Forest / Other wooded land for which a specific function has not been designated or where designated function is unknown.

4.2.3 Original data

Categories	Area by the year in "000" ha						
	1990	1995	2000	2002	2003	2005	2007
Production forests	5,485	4,925	4,241	4,452	4,552	4,486	5,780
Protection forests	2,925	3,479	5,502	5,614	5,699	6,172	4,979
Bio-diversity	731	898	1,570	1,727	1,843	1,959	2,078
Total without Rubber	**9,141**	**9,302**	**11,313**	**11,793**	**12,094**	**12,617**	**12,837**
Rubber Area	222	278	412	429	436	460	550
Production with Rubber	5,707	5,203	4,653	4,881	4,988	4,946	6,330

Total'Forest with'Rubber	9,363	9,580	11,725	12,222	12,530	13,077	13,387

Source: Forest Protection Department, Forest Program No.32

4.3 Analysis and processing of national data

4.3.1 Adjustment

4.3.2 Estimation and forecasting

The figures are available for 1990 and 2005 and hence there is not need to conduct estimation for these years. The forecasting for 2010 has been done with the help of ratio among different categories of designation in 2007 since the regression estimate do not provide right trend for production areas because pre and past 2005 data indicate have apposite trend.

2007

Production: 47% of total forest

Protection: 37% of total forest

Biodiversity conservation: 16% of total forest

Category	Area in 2010 ("000" ha)
Production forest including rubber	6524
Protection of water/soil	5131
Bio-diversity conservation	2142
Total	13797

4.3.3 Reclassification

National Class	Percentage of a National Class to a FRA Classes of Primary Function					
	Production For./OWL	**Protection For./OWL**	**Conservation of Biodiversity**	**Social Service**	**Multiple Function**	**Unknown Function.**
	%	**%**	**%**	**%**	**%**	**%**
Production	100					
Protection		100				
Conservation			100			
Multiple Pur.					100	

4.4 Data

Table 4a

Categories		Forest area (000 hectares)				
		1990	**2000**	**2005**	**2010**	**2015**
CFRQ	Production forest	5707	4653	4946	6373	6870
CFRQ	Multiple use forest	0	0	0	0	0

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
1 st	Bamboo and bamboo shot	Dendrocalamus membranaceus Munro (Lu#ng), Bambusa balcooa (L# ô), Bambusa fax (Lour.) (n#a)	N/A	5
2 nd	Honey	N/A	N/A	1
3 rd	Rattan	Calamus bousigonii Becc. ; Calamus tetradactylus Hance	N/A	5

4 th	Cinnamon	Cinnamomum cassia Presl	N/A	3
5 th	Star anise	Illicium verum	N/A	4
6 th	Resin	Pinus merkusii	N/A	3
7 th	N/A	N/A	N/A	N/A
8 th	N/A	N/A	N/A	N/A
9 th	N/A	N/A	N/A	N/A
10 th	N/A	N/A	N/A	N/A
TOTAL			.00	

2010	
Name of local currency	Vietnam dong (VND)

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 beewax
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	31203.43	26534.43
1991	31554.37	26708.37
1992	31216.3	26752.3
1993	31163.06	26814.06
1994	31215.01	26828.01
1995	31595.3	26793.3
1996	31641.13	26764.13
1997	31324.71	26767.71
1998	31032.97	26706.97
1999	30220.32	26695.32
2000	30868.55	26685.55
2001	30798.19	26615.19
2002	30729.5	26546.5
2003	26437	21500
2004	26487	21250
2005	26004	21250
2006	26121	21250
2007	27450	22000
2008	27850	22000
2009	27850	22000
2010	28200	21500

2011	27100	20400

Tiers

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

Tier Criteria

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

4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	N/A	Based on national development plan
Multiple use forest	Vietnam do not have the category of multiple use forest. Vietnam have only 3 type for forest management function: production forest, watershed protection forest, and special use forest (national park and nature reserve)	N/A
Total wood removals	N/A	N/A
Commercial value of NWFP	N/A	N/A

Other general comments to the table
N/A

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

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

5.1 Categories and definitions

Category	Definition
Protection of soil and water	Forest area designated or managed for protection of soil and water
...of which production of clean water (sub-category)	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 (sub-category)	Forest area primarily designated or managed for coastal stabilization.
...of which desertification control (sub-category)	Forest area primarily designated or managed for desertification control.
...of which avalanche control (sub-category)	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 (sub-category)	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 (sub-category)	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 (sub-category)	Forest area designated or managed for public recreation.
...of which carbon storage or sequestration (sub-category)	Forest area designated or managed for carbon storage or sequestration.
...of which spiritual or cultural services (sub-category)	Forest area designated or managed for spiritual or cultural services.
...of which other (sub-category)	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	National Forest Inventory 2005	Protection forest	2005	N/A

2	National Forest Inventory 2010	Protection forest	2010	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
Protection forest	Protection forests are maintained to protect water streams and soils, prevent soil erosion and mitigate natural disasters.
N/A	N/A
N/A	N/A
N/A	N/A

5.2.3 Original data

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
	CFRQ	Protection of soil and water	7000	5614	6172	4846	5200
	CFRQ	... of which production of clean water	N/A	N/A	N/A	N/A	N/A

CFRQ	... of which coastal stabilization	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which desertification control	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which avalanche control	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which erosion, flood protection or reducing flood risk	N/A	N/A	N/A	N/A	N/A
CFRQ	... of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A

Other
N/A

Table 5b

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

Tiers

Category	Tier for reported trend	Tier for status
Protection of soil and water	Tier 2	Tier 3
Ecosystem services, cultural or spiritual values	Tier 2	Tier 2

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
• Cultural or spiritual values • Public recreation • Spiritual or cultural services • Other	Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other	**Tier 3** : Estimate based on repeated compatible tiers 3 (tier for status) **Tier 2** : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) **Tier 1** : Other

5.5 Comments

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

Other general comments to the table
In Vietnam protection forest is a general class that include all forest designated for protection of watershed, soil erosion, flooding and coastal protection. At the lower level there might be further classification of protection forest to such sub-category. However at national level data is reporting only as one class: protection forest. Therefore in table 5a we only report one general class: protection forest for soil and water

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	Database of Forest Inventory and Planning Institute and MARD	N/A	1992	N/A
2	Database of Forest Inventory and Planning Institute and MARD	N/A	1995	N/A
3	Database of Forest Inventory and Planning Institute and MARD	N/A	2000	N/A
4	Database of Protection Forest Department and FIPI	N/A	2002	N/A
5	Database of Protection Forest Department and FIPI	N/A	2003	N/A
6	FIPI and PFD submit to MARD and publishing	N/A	2005	N/A
7	FIPI and PFD submit to MARD and publishing	N/A	2007	N/A

6.2.2 Classification and definitions

National class	Definition
Protection	Forest / Other wooded land designated for protection of soil and water. Logging is not allowed. Its compose of watershed, control soil erosion, tidal along costal, fixation moving sand duns, reduce pollution nearby the plant or factories

Production	Production forests have the main purpose of supplying timber and non-timber forest products (NTFPs), but in addition provide environmental protection.
Special use forest	The main role of special-use forests is nature conservation, protection of historical and cultural site, and tourism.
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

> See 4.3.3.

6.4 Data

Table 6

Categories		Forest area (000 hectares)				
		1990	**2000**	**2005**	**2010**	**2015**
CFRQ	Conservation of biodiversity	731	1570	1959	2002	2040
CFRQ	Forest area within protected areas	731	1570	1959	2002	2040

Tiers

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

Tier criteria

Category	Tier for status	Tier for reported trend
• 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	Special use forest in Vietnam include 3 type of forest: 1) national park + nature reserve; 2) Tourism and spiritual forest; 3) Research forest. Therefore the "Conservation of biodiversity" data in table 6 is calculated as: Total area of Special use forest subtract the area of tourism and research forest	N/A
Forest area within protected areas	No data avaiable	N/A

Other general comments to the table
N/A

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

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

7.1 Categories and definitions

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

7.2 National data

7.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Circular 22/2011/TT-BTNMT by Ministry of Environment and Natural Resources, issued on 01 July 2011, on Criteria to identify invasive species and promulgate the list of exiting invasive species	Invasive species	2011	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

7.2.2 Classification and definitions

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

7.2.3 Original data

Goverment Circular on invasive species here:

http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?
class_id=1&mode=detail&document_id=170254

7.3 Analysis and processing of national data

7.3.1 Adjustment

7.3.2 Estimation and forecasting

7.3.3 Reclassification

7.4 Data

Table 7

Scientific name of woody invasive species	Forest area affected (000 ha)	
	2005	2010
Mimosa pigra (Trinh nữ thân gỗ, mai dương)	N/A	N/A
Leucaena leucocephala (Keo giậu, keo dậu)	N/A	N/A
Lantana camara (Cây ngũ sắc ,bông ổi)	N/A	N/A
Melaleuca quinquenervia (Cây tràm quinquenervia)	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
Total	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend

| Invasive species | Tier 1 | Tier 1 |

Tier Criteria

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

7.5 Comments

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

Other general comments to the table
There is no data available on area affected by invasive species, therefore we only reporting name of invasive species.

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	National Forest monitoring 2010. Forest Protection Department. Vietnam Forest Administration (VNFOREST). Ministry of Agriculture and Rural Development. 2010	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

8.2.2 Classification and definitions

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

N/A	N/A

8.2.3 Original data

Forest change 2010

Decision 1828 /QĐ-BNN-TCLN date 11/Aug /2011)

									Unit: ha	
Category	Code	Total change	Affore-station	Logging	Forest fire	Insect, disease	Defore-station	Change of land category	Natural regene-ration	Other
Forested land	1000	129,537	197,571	(49,635)	(4,549)	(39)	(3,942)	(46,519)	106,902	(70,251)
A. Natural forest	1100	(33,775)	(37,504)	(1,892)	(1,892)	-	(1,447)	(29,088)	106,901	(68,853)
1. Woody forest	1110	(8,686)	(22,996)	(1,534)	(1,394)	-	(712)	(19,080)	93,664	(56,632)
2.Bamboo forest	1120	(49,252)	(7,074)	(98)	(60)	-	(180)	(2,558)	394	(39,676)
3. Mixed woody + bamboo	1130	28,103	(7,554)	(260)	(79)	-	(311)	(5,118)	13,791	27,635
4. Mangrove	1140	(518)	120	-	-	-	-	(11)	2	(629)
5. Limestone forest	1150	(3,423)	-	-	(359)	-	(243)	(2,320)	(950)	450
B. Plantation	1200	163,312	235,075	(47,743)	(2,657)	(39)	(2,495)	(17,431)	-	(1,398)
1. Plantation forest with volume	1210	195,451	-	(46,765)	(1,419)	(16)	(1,095)	(15,147)	144,123	115,769
2. Plantation forset without volume	1220	(53,045)	216,952	-	(920)	(23)	(1,400)	(784)	(144,123)	(122,747)

	1230										
3. Bamboo		(4,879)	50	(9)	(1)	-	-	(13)		(4,907)
4. Industrial material tree	1240	(18,427)	15,890	(969)	(36)	-	-	(256)		(33,056)
5. Mangrove	1250	44,213	2,183	-	(282)	-	-	(1,231)	-	43,543

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	#
CFRQ	Total land area burned	175.71	N/A	396.91	N/A	235.54	1148	120.24	496	257.98	773
CFRQ	... of which forest area burned	76.65	N/A	75.33	N/A	79.93	N/A	29.07	N/A	108.67	N/A

	Category	2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
CFRQ	Total land area burned	60.74	277	115.41	337	216.6	897	46.99	241	75.15	385

CFRQ	... of which forest area burned	18.78	N/A	47.28	N/A	66.44	N/A	14.03	N/A	28.91	N/A

Table 8b

Outbreak category	Description/name	Year(s) of latest outbreak	Area damaged (000 hectares)
N/A	N/A	1998	2.5
Insects	n/a	2010	0.039
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
• Insects • Diseases • Severe weather events	Tier 3	Tier 2

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
• 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	N/A	N/A
Insects	N/A	N/A
Diseases	N/A	N/A
Severe weather events	N/A	N/A

Other general comments to the table
N/A

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	6045.46

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	N/A

Other general comments

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	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

10.2.2 Classification and definitions

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

10.2.3 Original data

10.3 Data

Table 10

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

10.4 Comments

Variable / category	Comments related to data definitions etc
Policies supporting sustainable forest management	N/A
Legislation and regulations supporting sustainable forest management	N/A

Other general comments

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	N/A	N/A	N/A
2	N/A	N/A	N/A
3	N/A	N/A	N/A
4	N/A	N/A	N/A

Table 11

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

11.3 Comments

Category	Comments related to data definitions etc
National stakeholder platform	[tbd]

Other general comments

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 *(sub-category)*	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	Decision 1828 /QĐ-BNN-TCLN Dated 11/8/2011 by MARD	N/A	2011	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

12.2.2 Classification and definitions

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

12.2.3 Original data

12.3 Analysis and processing of national data

12.3.1 Adjustment

12.3.2 Estimation and forecasting

12.3.3 Reclassification

12.4 Data
Table 12

Categories		Forest area 2010 (000 ha)
CFRQ	Forest area intended to be in permanent forest land use	2002
CFRQ	... of which permanent forest estate	2002

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	N/A
Permanent forest estate	N/A

Other general comments

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	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

13.2.2 Classification and definitions

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

13.3 Data

Table 13a

Category	% of total forest area	Most recent year	Check all boxes that apply					
			Continuous	**Periodic**	**Permanent ground plots**	**Temporary ground plots**	**Aerial/ remote sensing sample based**	**Aerial/ remote sensing full coverage**
Forest inventory	100	2010		yes	yes	yes		yes
Other field assessments	N/A	N/A						
Updates to other sources	100	2013	yes	yes	no	no	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	no
2 Periodic national state of the forest report	yes
3 Other (please document)	yes
4 None	

Other type of forest reporting
Each year MARD releases a report with data on national forest. The report is part of an official decision by MARD so that other ministry can use this data for planning.

13.4 Comments

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

Other general comments

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

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

14.1 Categories and definitions

Category	Definition
Forest area with management plan	Forest area that has a long-term documented management plan, aiming at defined management goals which is periodically revised
...of which for production *(sub-category)*	Forest management plan mainly focused on production
...of which for conservation *(sub-category)*	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	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

14.3 Data

Table 14a

Forest plan type	Forest area 2010 (000 ha)
Forest area with management plan	8375
... of which for production	6373
... of which for conservation	2002

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	27.6

Tiers

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

Tier criteria

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

14.4 Comments

Category	Comments
Forest area with management plan	Production forest have also management plans, but data are not available.
N/A	All forest in Vietnam should haTất cả diện tích rừng của VN đều có kế hoạch quản lý, trong đó toàn bộ rừng DD, PH và phần lớn diện tích rừng sản xuất có kế hoạch quản lý được cấp có thẩm quyền phê duyệt.
N/A	N/A

Other general comments

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

Other general comments

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

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

16.1 Categories and definitions

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

16.2 Data

Table 16a

International forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
CFRQ	FSC	0	0	0	0	0	0	0
CFRQ	PEFC	0	0	0	0	0	0	0
CFRQ	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
CFRQ	FSC	9.9	9.78	9.78	9.78	15.64	41.34	
CFRQ	PEFC	0	0	0	0	0	0	
CFRQ	Other	0	0	0	0	0	0	

Table 16b

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

		2007	2008	2009	2010	2011	2012	
CFRQ		0	0	0	0	0	0	
CFRQ		0	0	0	0	0	0	
CFRQ		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 3

16.3 Comments

Category	Comments related to data definitions etc
Certified forest area using an international forest management certification scheme	N/A
Domestic forest management certification	N/A

Other general comments

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: • Goods : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products. • Services : 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	Ministry of planning and investment 2007	expenditure	2001-2005	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	N/A	N/A	N/A
Public expenditure on forestry	2802000000	3555000000	4000000000

	2000	2005	2010
Name of Local Currency	VND	VND	VND

17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	N/A
Public expenditure on forestry	N/A
Other general comments	N/A

Other general comments

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

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

18.1 Categories and definitions

Category	Definition
Public ownership	Forest owned by the State or administrative units of the public administration or by institutions or corporations owned by the public administration.
...of which owned by the state at national scale (sub-category)	Forest owned by the State at the national scale or administrative units of the public administration or by institutions or corporations owned by the public administration.
...of which owned by the state at the sub-national government scale (sub-category)	Forest owned by the State at the sub-national government scale or administrative units of the public administration or by institutions or corporations owned by the public administration.
Private ownership	Forest owned by individuals, families, communities, private cooperatives corporations and other business entities, private, religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.
...of which individuals (sub-category)	Forest owned by individuals and families.
...of which private business entities and institutions (sub-category)	Forest owned by private corporations cooperatives companies and other business entities as well as private nonprofit organizations such as NGOs nature conservation associations, and private religious and educational institutions etc.
...of which local tribal and indigenous communities (sub-category)	Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area or forest owned by communities of indigenous or tribal people The community members are coowners that share exclusive rights and duties and benefits contribute to the community development.
Unknown ownership	Forest area where ownership is unknown includes areas where ownership is unclear or disputed.

Categories related to management rights of public forests	Definition
Public Administration	The Public Administration (or institutions or corporations owned by the Public Administration) retains management rights and responsibilities within the limits specified by the legislation.
Individuals households	Forest management rights and responsibilities are transferred from the Public Administration to individuals or households through long-term leases or management agreements.
Private companies	Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities private cooperatives, private nonprofit institutions and associations, etc., through long-term leases or management agreements.
Communities	Forest management rights and responsibilities are transferred from the Public Administration to local communities (including indigenous and tribal communities) through long-term leases or management agreements.
Other form of management rights	Forests for which the transfer of management rights does not belong to any of the categories mentioned above.

18.2 National data

18.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Forest inventory and planning institute submit to MARD and publishing	N/A	1990	N/A
2	Forest inventory and planning institute submit to MARD and publishing	N/A	1998	N/A
3	Forest protection department	N/A	2002	N/A
4	Forest protection department	N/A	2003	N/A
5	FIPI and PFD submit to MARD and publishing	N/A	2005	N/A
6	FIPI and PFD submit to MARD and publishing	N/A	2007	N/A

18.2.2 Classification and definitions

National class	Definition
Private ownership	Land owned by individuals, families, villages and communes, private co-operatives, religious and educational institutions, pension or investment funds, and other private institutions.
Public ownership	Land owned by the State (national, state and regional governments) or government-owned institutions or corporations or other public bodies including cities, municipalities or land allocated to army, police …
Other ownership	Not identified
N/A	N/A

18.2.3 Original data

Category FRA 2005	Forest area by the year (1000 hectares)					
	1990	2000	2002	2003	2005	2007
Private ownership	109	2,255	3,023	2,804	3,120	3,110
Public ownership	5,603	6,402	6,622	9,053	9,398	9,586
Others	3,651	3,068	2,577	673	559	691

Source: from FRA 2005 of Vietnam, Forest Protection Department

18.3 Analysis and processing of national data

18.3.1 Adjustment

The above data have been adjusted to get to the total of forest area reported in Question1a. Unknow ownership have been incremented accordingly.

18.3.2 Estimation and forecasting

18.3.3 Reclassification

18.4 Data

Table 18a

Categories		Forest area (1000 hectares)			
		1990	**2000**	**2005**	**2010**
CFRQ	Public ownership	5603	6402	9398	9587
CFRQ	... of which owned by the state at national scale	N/A	N/A	N/A	290
CFRQ	... of which owned by the state at the sub-national government scale	N/A	N/A	N/A	9297
CFRQ	Private ownership	109	2255	3120	3543
CFRQ	... of which owned by individuals	N/A	N/A	N/A	N/A
CFRQ	... of which owned by private business entities and institutions	N/A	N/A	N/A	N/A
CFRQ	... of which owned by local, tribal and indigenous communities	N/A	N/A	N/A	N/A
CFRQ	Unknown ownership	3651	3070	559	998

TOTAL	9363.00	11727.00	13077.00	14128.00

Tiers

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

Tier criteria

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

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Public Administration	N/A	5896	6319	2108
Individuals	N/A	2738	2854	3431
Private companies	N/A	25.6	66.6	2018
Communities	N/A	N/A	55.4	258.2
Other	N/A	2477	103	1771.8
TOTAL	.00	11136.60	9398.00	9587.00

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

Other	Tier 2	Tier 3

18.5 Comments

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

Other general comments to the table
N/A

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	Report of forestry sector	Labour of forestry companies, forest protection and special-use forest	2005	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

19.2.2 Classification and definitions

National class	Definition
Not available	N/A
N/A	N/A
N/A	N/A
N/A	N/A

19.2.3 Original data

Estimation and forecasting

Employment through forest with public ownership

According to report of forestry sector, there are about 20,000 staff working for forest companies, forest protection and special-use forest (about 6 million ha).

Employment through rubber plantation

An estimate of labour time to take care of plantations, to protect it from fire and collect resin etc. was developed and applied over the areas of rubber plantation in 1.3.2 to provide data on annual employment. It is assumed that one employment takes care of 4 ha plantation.

	1990	2000	2005
Rubber Plantation	222 000	412000	460000
Employment per ha	0.25	0.25	0.25
Employment (FTE)	56 000	103 000	115 000

Employment through forest with private ownership

There are 3.12 million ha which is allocated in 2005 to households and communities. One person may manage 30 ha of forest on average. Therefore, there are about 104,000 people working on this allocated land.

	1990	2000	2005
Forest with Private Ownership	109,000	2,255,000	3,120,000
Employment per ha	0.033	0.033	0.033
Employment (FTE)	4 000	75 000	104 000

Rangers: about 7,000 staff.

2010

Rubber plantation 2010: 749000 ha

Employment in Rubber: 749000*0.25 = 187250

Employment in foset with private ownership: 104000

Ranger: 7000

Total : 298000

19.3 Data
Table 19

Category		Employment (000 years FTE)			
		1990	**2000**	**2005**	**2010**
CFRQ	Employment in forestry	80	198	239	298
CFRQ	... of which female	N/A	N/A	N/A	N/A

19.4 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	Staff in forestry companies, forest protection and special-use forest	N/A

Other general comments to the table
N/A

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

Documents for this question:

- Guide for country reporting FRA 2015
- FRA 2015 Terms and Definitions

20.1 Categories and definitions

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

20.2 Data

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

Category	Million	Currency	Year for latest available information
Gross value added from forestry (at basic prices)	1.72831298E7	Dong	2011

20.3 Comments

Category	Comments
N/A	N/A

Other general comments

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	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

21.3 Data

Table 21a

Category	Forest area (000 ha)	
	2020	2030
Government target/aspiration for forest area	15100	N/A

Table 21b

Category	Forest area (000 ha)
	2013
Forests earmarked for conversion	N/A

21.4 Comments

Category	Comments
Government target/aspiration for forest area	N/A

Forests earmarked for conversion	N/A

Other general comments