

# GLOBAL FOREST RESOURCES ASSESSMENT 2015

## COUNTRY REPORT

# **Nepal**

Rome, 2014

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

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

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### Introductory Text

Forestry is an extensive land use system in Nepal. The forest and trees provide a vast array of goods and services to human beings. Forest and tree resources provide the basic commodities such as fuel wood, timber and fodder to the people and serve as an important ecological function such as biodiversity conservation, erosion control, and carbon- dioxide consumption. Agriculture is the mainstay of economy in the country as agriculture and forestry together has 31% contribution in total gross domestic product of the country. Nearly two-third of the country's total population depends on agriculture profession for sustaining their livelihoods.

The rate of forest depletion was significantly high up to nineties due to political, socioeconomic and administrative reasons. The last National Forest Inventory (NFI) was carried out in early nineties in Nepal. According to that inventory, forest and shrub together cover about 5.83 million ha, which is 39.6% of the total land area of the country. The rate of forest area decreasing was 1.7% per annum during 1978/79 to 1994, whereas rate of forest and shrub depleting rate was 0.5% per annum during the same period.

Community Forestry (CF) policy has been implemented from the early eighties and started to handover all the accessible national forests to the local people for their management and use. The 90's was the decade of community forestry in Nepal and the policy and programme also extended to the whole part of the country. This policy has brought significant positive change to restore denuded mountain landscape. A study from 20 Terai districts (southern most districts) revealed that the rate of forest cover changed was at an annual rate of 0.06% during the period of 1990/91 to 2000/2001. Macro level studies and visual interpretations revealed that Nepal's forest coverage and condition has significantly improved due to the Community Forestry (CF) intervention. Contexts have been dramatically changed inside and outside the forest. National level Forest

Resource Assessment (FRA) is ongoing since 2010 which is generating fresh and accurate forest resource information.

As Nepal's FRA is going on, complete national data of forest resources is yet to be generated. The forest area for FRA2015 table is only based on systematically distributed point analysis. The systematically distributed points have been visually interpreted on recent Google Earth imagery. FRA Nepal will publish its final data by 2014. Due to the lack of complete assessment many fields in the table below are n.a. (not available) or incomplete. This means the data generation process is underway and most probably it will be completed by the December of 2014. After completion of ongoing FRA final data will be generated and updated accordingly.

Desk Study?

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

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

Documents for this question:

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

### 1.1 Categories and definitions

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

### 1.2 National data

#### 1.2.1 Data sources

References to sources of information	Variables	Years	Additional comments
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1	DFRS, 1999. Forest Resources of Nepal (1987-1998). Department of Forest Research and Survey, Ministry of Forest And Soil Conservation, Kathmandu, Nepal	Area of forest and shrub	1994	NFI from 1988 to 1998.
2	HMGN/ADB/FINNIDA, 1988. Master Plan for the Forestry Sector in Nepal. Ministry of Forest and Soil Conservation, Kathmandu, Nepal.	Area of forest and shrub	1985-86	Based on Land Resources Mapping Data of 1978/79
3	WECS, 1988. District, Regional and national Forest Cover Class Summaries of the Area, Fuelwood Yield and Wood Volume for the Kingdom of Nepal. Water and Energy Commission Secretariat, His Majesty's Government of Nepal.	Area of forest and shrub	1985-86	Based on Land Resources Mapping Data of 1978/79
4	FAO. 2005. Global Forest Resources Assessment 2005 Main Report FAO Italy Rome.	Global Forestry Statistics	2005	N/A
5	MFSC, The future of Nepal's forest outlook for 2020.	Forestry statistics	2008	N/A

### 1.2.2 Classification and definitions

National class	Definition
Forest	All land with a forest cover, i.e, with trees whose crowns cover more than 10 % of the area, and not used primarily for purposes other than forest. Temporarily clear-cut area that will be planted is also forest area.
Shrub	Same as Forest but well-defined stem can't be found
N/A	N/A
N/A	N/A

### 1.2.3 Original data

The following table presents the national data on forest cover in Nepal. These information are based on The National Forestry Inventory Report prepared by the DFRS.

Categories	Land Cover in 000 ha
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	<b>LRMP</b> <b>1978/79</b>	<b>NRSC</b> <b>1984</b>	<b>MPFS</b> <b>1985/86</b>	<b>NFI</b> <b>1994</b>
<b>Forest</b>	5593	5284*	5504	4268
<b>Shrub</b>	692	-	706	1560
<b>Total</b>	6285		6210	5828

\* include some shrub areas

## **A. Forests**

### **For 1990**

The method of linear interpolation has been used to estimate extent of forest in Nepal in 1990 using 1985 figures from the MPFS (1988) and the DFRS (1999).

### **For 2000**

The FRA 2000 figure is considered to reflect reality on the ground. The FRA 2000 figure were developed through linear extra-polation method using figures from LRMP (1978) along with DFRS (1999) and adding 133,000 ha of plantation area (Validation Sheet for FRA 2000).

### **For 2005**

The figure for 2005 has been linearly forecasted based on FRA 2000 report (which is based on LRMP (1978) and DFRS (1999)) and NFI 1994 i.e. same trend as in FRA 2000 and keeping in mind following facts:

- a. *Trees outside the forest area haven't been included under the category of forest.*
- b. *Forest patches less than 6.25 ha haven't been regarded as forest while interpreting the aerial photographs in carrying out National Forest Inventory, 1994.*
- c. *The shrub area in 2005 may be more close to 1897 (000 ha) estimate than the following computed figure of 2235 (000 ha).*



**For 2010**

Micro level studies, district and regional level resource inventories revealed that forest cover in Nepal is significantly increased due Community Forestry(CF) intervention. However, NFI is not completed yet to update national data. Estimation from the last NFI 1994 data do not represent present context. Therefore, extent of forest in 2010 is Not Available(NA) but for FRA 2010 purposes, same statistics of FRA2005 have been used.

	Extent in “000”ha					
	1978	1985	1994	1990	2000	2005
Extent of Forests in 1990		5504	4268	<b>4817</b>		
Extent of Forests in 2000	5605		4268		3767	3349
Add Plantations and forest patches (6.25 but > 0.5) not seen in Remote Sensing					133	
					<b>3900</b>	
Extent of Forest in 2005	5605		4268		3767	3349
Add Plantations and forest patches (6.25 but > 0.5) not seen in Variables Remote Sensing						287
						<b>3636</b>
<b>Extent of Forest in 2010</b>						<b>n.a</b>
Extent of Shrubs in 1990		706	1560	<b>1180</b>		
Extent of Shrubs in 2000	692		1560		1886	2157
Less (Plantations and forest patches ) and add shrub patches (<6.25 but > 0.5 ha) not in Remote Sensing					-133	78
					<b>1753</b>	<b>2235</b>

<b>Total (Forest and Shrub)</b>				<b>5997</b>	<b>5653</b>	<b>5871</b>

### 1.3 Analysis and processing of national data

#### 1.3.1 Adjustment

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#### 1.3.2 Estimation and forecasting

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#### 1.3.3 Reclassification

Extent of forest data are NA for 2010. The reason for this is that there is no new category for 2010 but categories mentioned in the table were used for FRA2005.

National Land-Use	Percentage of a National Class belonging to a FRA Class			
	Forest	Other Wooded land	Other land with Tree Cover	Other land
Forest	100	-	-	-
Shrub	-	100	-	-
Others	-	-	-	100

### 1.4 Data

Table 1a

Categories	Area (000 hectares)				
	1990	2000	2005	2010	2015













	Forest	4817	3900	3636	3636	3636
	Other wooded land	1180	1753	1897	1897	1897
	Other land	8303	8682	8802	8802	8802
	... of which with tree cover	N/A	N/A	N/A	N/A	N/A
	Inland water bodies	418	383	383	383	383
	TOTAL	14718.00	14718.00	14718.00	14718.00	14718.00

Table 1b

Categories		Annual forest establishment / loss (000 hectares per year)				...of which of introduced species (000 hectares per year)			
		1990	2000	2005	2010	1990	2000	2005	2010
	Forest expansion	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
	... of which afforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which natural expansion of forest	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which human induced	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Reforestation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... of which artificial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

## Tiers

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

## Tier criteria

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

Category	Comments related to data definitions etc	Comments on the reported trends
Forest	National Forest Inventory (NFI) has not been carried out from the last 1994. Positive impacts have been seen due to Community Forestry (CF) intervention and increasing of protected area system. Department of Forest Research and Survey (DFRS) has designed to complete NFI by 2013.	Reporting of FRA2005 was based on 1994 data and questions have been raised about the reliability. Extrapolations and estimations by using outdated data lead toward the great mistake. Thus, same statistics of FRA2005 have been used and after completion of NFI, data will be updated.
Other wooded land	Previous data are outdated and no new data have been available.	DFRS has planned to accomplish new NFI up to 2013. Updated data will be submitted later.
Other land	N/A	N/A
Other land with tree cover	Inventory of the trees outside forest under the category of 'other lands with trees' of FRA has not yet been carried out in Nepal. Most of the trees grown on land categories other than the forest are found in scattered and linear form.	Data are not available. But this category will be included in forthcoming NFI process
Inland water bodies	The figure of the Inland Water Bodies has been adopted from the FAO STATISTICS for all the three years.	N/A
Forest expansion	N/A	N/A
Deforestation	N/A	N/A
Reforestation	N/A	N/A

#### Other general comments to the table

NFI is in the process. Nepal will be able to report reliable forest and forestry data after completion the NFI FRA2015. Formulation of project document has been completed to conduct National Forest Monitoring and Assessment (NFMA) in Nepal.

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

Documents for this question:

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

### 2.1 Categories and definitions

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

### 2.2 National data

#### 2.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	GoN, 2002. Nepal Biodiversity Strategy. Ministry of Forests and Soil Conservation, Kathmandu, Nepal.	Characteristics	2002	HMGN/MFSC. 2002. Nepal Biodiversity Strategy. Ministry of Forests and Soil Conservation, Kathmandu, Nepal.

2	DFRS, 1999. Forest Resources of Nepal (1987-1998). Department of Forest Research and Survey, Ministry of Forest And Soil Conservation, Kathmandu, Nepal	Characteristics	1994	DFRS, 1999. Forest Resources of Nepal (1987-1998). Department of Forest Research and Survey, Ministry of Forest And Soil Conservation, Kathmandu, Nepal
3	HMGN/ADB/FINNIDA, 1988. Master Plan for the Forestry Sector in Nepal. Ministry of Forest and Soil Conservation, Kathmandu, Nepal.	Plantations	1985-86	HMGN/ADB/FINNIDA, 1988. Master Plan for the Forestry Sector in Nepal. Ministry of Forest and Soil Conservation, Kathmandu, Nepal.
4	N/A	N/A	N/A	N/A

### 2.2.2 Classification and definitions

National class	Definition
National Park	Area set aside for the conservation and management of the natural environment, including the ecological, biological and geomorphology associations of aesthetic importance.
Wildlife Reserve	An area established for the conservation and management of plants and wildlife and their habitat.
Hunting Reserve	An area set aside for the conservation and management of wildlife to provide opportunities for legal recreational hunting
Conservation Area	An area managed according to an integrated plan for the conservation of the natural environment and sustainable use of the natural resources contained within it.
Buffer Zone	A designated area surrounding a national parks or a reserve within which the use of forest products by local people is regulated to ensure sustainability.

### 2.2.3 Original data

<b>A. Protected Areas of the country: From Question 6</b>				
Forest cover in the NP, WR, HR and CA is estimated on the basis of table 3.2.3 of the FRA 2010 (see Question 6 FRA2015).				
	1990	2000	2005	2010
Forest in protected areas	391	548	526	526

Other wooded land in protected areas	98	246	274	275
Total	489	794	800	801

## B. Forest Plantation

Purpose of plantation	Area in 000 ha	
	1986	1999
Industrial, Fuelwood and Pole Plantations		
Watershed Development Plantation		41.8
Total		9.5
	<b>47.3</b>	<b>51.3</b>

## 2.3 Analysis and processing of national data

### 2.3.1 Adjustment

2000 primary forest data have been used for 1990, as the figure for 1990 was probably underestimated. Other naturally regenerated forest in 1990 have been adjusted accordingly to match with the total of forest area reported.

### 2.3.2 Estimation and forecasting

Primary forests have been considered the same as in 2005.

No estimations have been done for 2010 and same figures have been repeated due to lack of updated figures.

2000 primary forest data have been used for 1990, as the figure for 1990 was probably underestimated.

### 2.3.3 Reclassification

Forest in protected areas has been considered as primary forest.

Forest plantations have been reclassified as planted forest and the rest has been considered other naturally regenerated forest.

## 2.4 Data

Table 2a







Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Primary forest	548	548	526	526	526
	Other naturally regenerated forest	4229	3310	3067	3067	3067
	... of which of introduced species	N/A	427	407	407	407
	... of which naturalized	N/A	N/A	N/A	N/A	N/A
	Planted forest	40	42	43	43	43
	... of which of introduced species	9	10	10	10	10
TOTAL		4817.00	3900.00	3636.00	3636.00	3636.00

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)	0	0	0	0	0
... of which planted	N/A	N/A	N/A	N/A	N/A

### Tiers

Category	Tier for status	Tier for reported trend
Primary forest	Tier 1	Tier 1



Other naturally regenerated forest	Tier 1	Tier 1
Planted forest	Tier 2	Tier 1
Mangroves	Tier 3	Tier 3

### Tier Criteria

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

### 2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	Forests in the Conservation or Protected areas. 2000 primary forest data have been used for 1990, as the figure for 1990 was probably underestimated and the trend was incorrect. Other naturally regenerated forest in 1990 have been adjusted accordingly to match with the total of forest area reported.	N/A
Other naturally regenerating forest	All the forest except protected and planted forests.	N/A
Planted forest	N/A	N/A
Mangroves	N/A	N/A

#### Other general comments to the table

There are no national definitions and record in FRA classes like primary, modified natural, semi-natural, productive plantation and protective plantation. Following assumptions have been made and related definitions and data are being provided for the purposes of this Question. A. Primary Forest: The forest area in National Parks, Wildlife Reserves and Hunting Reserves have been placed under this category of FRA 2010. B. Other naturally regenerated forest: The rest of the forest areas of the country (excluding plantations) have been placed under this category of FRA 2010 Class. C. Planted Forests: All plantation for industrial round wood, fuelwood and poles have been placed under this category of FRA 2010 and all plantations raised for watershed development have been placed under this category of FRA 2010.

### 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	DFRS, 1999. Forest Resources of Nepal (1987-1998). Department of Forest Research and Survey, Ministry of Forest And Soil Conservation, Kathmandu, Nepal	Growing Stock, Biomass	1994	Department of Forest Research and Survey (DFRS) is the only government designated forest research and survey organization in Nepal that works in close collaboration with various national stakeholders and international agencies. The Forest Survey Division of the Department generates valuable statistics and information necessary to plan overall forestry development at national, regional and district level. Regarding the growing stock, the first inventory on a national level took place in the 1960s. Inventory results were presented for the Terai and adjoining regions in 1967 and for the Hills in 1973. The Master plan for forestry sector updated the figures for 1986 in 1988. The latest national forest inventory was completed in 1994 and report was published in 1999.
2	HMG/ADB/FINNIDA, 1988. Master Plan for the Forestry Sector in Nepal. Ministry of Forest and Soil Conservation, Kathmandu, Nepal.	Growing Stock, Biomass	1985/1986	N/A
3	WECS, 1988. District, Regional and national Forest Cover Class Summaries of the Area, Fuelwood Yield and Wood Volume for the Kingdom of Nepal. Water and Energy Commission Secretariat, His Majesty's Government of Nepal.	Growing Stock, Biomass	1985/1986	N/A
4	Harmon, M. E; O.N Krankina, M. Yatskov and E. Matthew. 2001. Predicting Broad- Scale Carbon Stock of Woody Detritus from Plot-Level Data. Pp 533-552 In: Lal, R., J.Kimble, B.A. Steward, Assessment Method for Soil Carbon, CRC press, New York.	Dead wood biomass	2001	N/A
5	FRA 2010 Guidelines on Country reporting	N/A	N/A	Carbon conversion factor 0.47

## 3.2.2 Classification and definitions

National class	Definition
Growing Stock	The gross volume to a 10 cm top diameter outside bark (ob) of standing trees of greater than 10 cm diameter at breast height (dbh)Explanation: the volume over bark of all living trees more than 10 cm diameter at breast height (or above buttressed if these are higher). Includes the stem from ground level or stump height up to a top diameter of 10 cm excluding branches, twigs, stumps and roots.
Biomass	Air dry weight of stems, branches and leaves (kg)
N/A	No national definitions available for carbon stock data
N/A	N/A

## 3.2.3 Original data

<b>Growing stock</b>				
	Unit	1960	1985/86	1994
Forest	Forest Area under consideration/ Inventory in million ha	2.5	5.416	2.179
	Growing stock of trees up to 10 cm diameter at breast height in million cum of	212	522	387.5
	Growing stock /ha	85	96.36	177.8

Source: HMG/ADB/FINNIDA, 1988; DFRS, 1999

The National Forest Inventory of 1960 and 1994 has provided the information on relative percentage of growing stock (GS) by tree species. Based only on the share of growing stock of the tree species, the relative ranking (first being the highest share in growing stock) of ten most common tree species are as follows:

**Table: Ranking of Major Tree Species by Growing Stock**

SN	Scientific Name	Common Name	Local name	Percent Share in GS of 1960	Percent Share in GS of 1960
1.	<i>Shorea robusta</i>	Sal	Sal, Sakhuwa	31.0	28.2
2.	<i>Quercus spp</i>	Oak	<i>Khasru</i>	n.a.	9.3
3.	<i>Terminalia alata</i>	Indian laurel	Asna, Saj	8.2	7.6
4.	<i>Pinus roxburghii</i>	Chir pine	Khote salla	6.9	6.3
5.	<i>Abies spectabilis</i>	Silver fir	Talis patra	9.5	4.4
6.	<i>Rhododendron spp</i>	Rhododendron	<i>Lali gurans</i>	n.a.	4.3
7.	<i>Alnus nepalensis</i>	Alder	Uttis	n.a.	2.9
8.	<i>Schima wallichii</i>		<i>Chilaune</i>	n.a.	2.0
9.	<i>Tsuga dumosa</i>	Hemlock	Thingure sall	2.4	1.9
10.	<i>Adina cordifolia</i>		Karma, Haldu	n.a.	1.8

Source: DFRS, 1999.

### Biomass stock

Category	Biomass in million tons (air dry)	
	1985/86	1994
Forests	628 Over 5.417 million ha	429 over 2.179 million ha

Source: HMG/ADB/FINNIDA, 1988; DFRS, 1999

### 3.3 Analysis and processing of national data

### 3.3.1 Adjustment

#### Carbon stock

The default global carbon fraction of 0.47 has been applied to the biomass figures.

### 3.3.2 Estimation and forecasting

#### Growing stock

The growing stock for 1990, 2000 and 2005 has been derived from the forest area presented in Question 1. The national figure of average stem volume (ob) of 96.36 m<sup>3</sup>/ha for 1985/86 has been considered to low to be used for the purposes of this table and for this reason the figure of 177.8 m<sup>3</sup>/ha for 1994 has been used estimating growing stock in forests for 1990, 2000, 2005 and 2010 (DFRS, 1999). Regarding the growing stock in OWL (shrub land) the average stem volume of shrub (OWL) 30 cu.m/ha has been taken from the WECS, 1988.

**Table: Total Growing Stock of Forest and Shrub land**

Category	Growing stock in million cu.m ob		
	1990	2000	2005
Forest	856	694	647
OWL	35	53	67
<b>Total</b>	891	747	704

(Source: HMGN/ADB/FINNIDA, 1988; WECS, 1988, Department of Forest Research and Survey, 1999)

For the growing stock composition, it is assumed that the relative share of growing stock of the tree species will continue to remain same in years 1990, 2000 and 2005 as it was in 1994.

#### Biomass stock

A. Above ground biomass

To estimate biomass, the growing stock to biomass conversion factors of 1994 has been used for estimating biomass for 1990, 2000, 2005 and 2010 for forest areas. The same factors have been used estimating biomass in OWL for 1990, 2000, 2005 and 2010.

<b>Biomass in Forests</b>	<b>1994</b>
Area (million ha) covered by Biomass figures	2.179
Biomass Stock million tonnes	429
Growing Stock million m <sup>3</sup> (> 10 cm dbh)	388
Growing Stock to Biomass factor	1.11
Biomass per ha	196.88

This leads to the following figures for above ground biomass

	<b>1990</b>	<b>2000</b>	<b>2005</b>
Growing stock to Biomass Factor	1.11	1.11	1.11
Growing Stock in forests in million m <sup>3</sup>	856	694	647
Above Ground Biomass in Forests in million tonnes	950	770	718
Growing Stock in OWL in million m <sup>3</sup>	35	53	57
Above Ground Biomass in OWL in million tonnes	42	58	63
<b>Total</b>	<b>599</b>	<b>828</b>	<b>781</b>

#### B. Below Ground Biomass

The default root shoot ratios of 0.24 for Broad leaved and 0.46 for conifers has been adopted from the GPG 2003. The arithmetic average (0.35) of these two figures has been applied to 1990, 2000 and 2005 data. This leads to the following figures of below ground biomass.

<b>Below Ground Biomass</b>	<b>1990</b>	<b>2000</b>	<b>2005</b>
Below Ground Biomass in Forest in million tonnes	195	269	251
Below Ground Biomass in OWL in million tonnes	15	20	22

<b>Biomass in Forests in million tonnes</b>	<b>1990</b>	<b>2000</b>	<b>2005</b>
Above ground biomass in Forests	950	770	718
Below ground Biomass in Forests	332	269	251
Total Live Biomass in Forests	1283	1039	969

<b>Biomass in OWL in million tonnes</b>	<b>1990</b>	<b>2000</b>	<b>2005</b>
Above ground biomass in OWL	42	58	63
Below ground Biomass in OWL	15	20	22
Total Live Biomass in OWL	57	79	85



## 3.3.3 Reclassification

<b>Biomass stock</b>		
<b>Category</b>	<b>Percentage allocation of a national class to a FRA class</b>	
	<b>Above ground tree biomass</b>	<b>Below ground tree biomass</b>
Above ground biomass	100	
Below ground biomass		100

## 3.4 Data

Table 3a




<b>Category</b>		<b>Growing stock volume (million m<sup>3</sup> over bark)</b>									
		<b>Forest</b>					<b>Other wooded land</b>				
		<b>1990</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>1990</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>
	Total growing stock	856	694	647	647	647	35	53	67	67	67
	... of which coniferous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	... 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

<b>Category/Species name</b>			<b>Growing stock in forest (million cubic meters)</b>			
<b>Rank</b>	<b>Scientific name</b>	<b>Common name</b>	<b>1990</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>
1 st	Shorea robusta	Sal, Sakhuwa	241	195.6	182.4	182.4
2 nd	Quercus spp	Khasru	80	64.5	60.1	60.1
3 rd	Terminalia alata	Asna, Saj	65	52.7	49.1	49.1
4 th	Pinus roxburghii	Khote salla	54	43.7	40.7	40.7

5 th	Abies spectabilis	Talis patra	38	30.5	28.4	28.4
6 th	Rhododendron spp	Lali gurans	37	29.8	27.8	27.8
7 th	Alnus nepalensis	Uttis	25	20.1	18.7	18.7
8 th	Schima wallichii	Chilaune	17	13.9	13	13
9 th	Tsuga dumosa	Thingure sall	16	13.2	12.3	12.3
10 th	Adina cordifolia	Karma, Haldu	15	12.5	11.7	11.7
Remaining			268	217.5	202.8	202.8
TOTAL			856.00	694.00	647.00	647.00

**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)	10cm	
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	10cm	
Minimum diameter (cm) of branches included in growing stock (W)	n.a.	
Volume refers to above ground (AG) or above stump (AS)	AG	

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

Table 3c

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

Table 3d











Category		Biomass (million metric tonnes oven-dry weight)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Above ground biomass	950	770	718	718	718	42	58	63	63	63
	Below ground biomass	332	269	251	251	251	15	20	22	22	22
	Dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		1282.00	1039.00	969.00	969.00	969.00	57.00	78.00	85.00	85.00	85.00

Table 3e

Category		Carbon (Million metric tonnes)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Carbon in above ground biomass	446	385	359	359	359	21	29	32	32	32
	Carbon in below ground biomass	156	135	126	126	126	7	10	11	11	11
	<i>Subtotal Living biomass</i>	602	520	484	484	484	28	39	43	43	43
	Carbon in dead wood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Carbon in litter	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	N/A	N/A
	<i>Subtotal Dead wood and litter</i>	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	N/A	N/A
	Soil carbon	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		605.45	523.45	488.45	488.45	488.45	31.45	42.45	46.45	43.00	43.00

## Tiers

Variable/category	Tier for status	Tier for trend
-------------------	-----------------	----------------

Total growing stock	Tier 2	Tier 1
Net annual increment	Tier 2	Tier 1
Above ground biomass	Tier 2	Tier 1
Below ground biomass	Tier 2	Tier 1
Dead wood	N/A	N/A
Carbon in above-ground biomass	Tier 2	Tier 1
Carbon in below ground biomass	Tier 2	Tier 1
Carbon in dead wood and litter	Tier 2	Tier 1
Soil carbon	N/A	N/A

## Tier criteria

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

### 3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
Total growing stock	National Forest Inventory Report 1999 has not mentioned the average stem volume (ob) per hectare of the shrub land and therefore this figure is taken from WECS, 1988.	No estimation and interpretation can be done from the early nineties data
Growing stock of broadleaved coniferous	N/A	No estimation and interpretation can be done from the early nineties data
Growing stock composition	N/A	No estimation and interpretation can be done from the early nineties data
Net annual increment	N/A	N/A
Above-ground biomass	The National Forest Inventory 1990s and MPFS 1988 provide biomass estimate including leaf, branch and stem components.	N/A
Below-ground biomass	N/A	N/A
Dead wood	N/A	N/A
Carbon in above-ground biomass	N/A	N/A
Carbon in below-ground biomass	N/A	N/A
Carbon in dead wood	N/A	N/A
Carbon in litter	N/A	N/A
Soil carbon	Reported soil depth for carbon estimates n.a.	N/A

#### Other general comments to the table

N/A

## 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	GoN, 1995. Forest Act 1993 and Forest Regulation 1995. Ministry of Forest and Soil Conservation, Kathmandu, Nepal	Legal Definitions	1993 1995	N/A
2	Government of Nepal 2007. The three year interim Plan (2007-2010). Government of Nepal. National Planning Commission, Nepal	Area of Community. Forest and PAs	2007	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

## 4.2.2 Classification and definitions

National class	Definition
Production Forest	Forests which is primarily used for the production of timber, fuelwood and non timber forest product
Leasehold Forest	Forests leased to any institution established under current law, industry or community, for the production of forest products, agro-forestry, tourism or farming of insects and wildlife in a manner conducive to the conservation and development of forests.
N/A	N/A
N/A	N/A

## 4.2.3 Original data

## 4.3 Analysis and processing of national data

### 4.3.1 Adjustment

### 4.3.2 Estimation and forecasting

### 4.3.3 Reclassification

## 4.4 Data

Table 4a



Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	109	206	185	380	550
	Multiple use forest	71	456	533	848	1500

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
------	-----------------	-------------	--	---------------

1 st	Resin	Pinusroxburghii	3212.8	7
2 nd	Khair (Catechu)	Acaciacatechu	1934.7	3
3 rd	Fibre	Daphne spp	644.3	5
4 th	Fibre	Girardinia diversifolia	208.2	5
5 th	N/A	N/A	N/A	N/A
6 th	N/A	N/A	N/A	N/A
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			6000.00	

2010	
Name of local currency	Nepali Rupees

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



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

Table 4c Pre-filled data from FAOSTAT

Year	FRA 2015 category (1000 m <sup>3</sup> u.b.)	
	Total wood removals	...of which woodfuel
1990	12966.9	12396.87
1991	12966.4	12346.38
1992	13011.3	12391.32
1993	13102.3	12482.33
1994	13033.9	12413.87
1995	13101.4	12481.35
1996	13119.5	12499.47
1997	13191	12570.99
1998	13853.5	12593.48
1999	13938.5	12678.5
2000	14022.7	12762.68
2001	14004.2	12744.22
2002	13987.9	12727.93
2003	13973.8	12713.79
2004	13961.8	12701.77
2005	13951.8	12691.84
2006	13914.3	12654.35
2007	13879	12619

2008	13845.8	12585.8
2009	13814.7	12554.72
2010	13785.7	12525.69
2011	13723.55	12463.55

## Tiers

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

## 4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	Forest resource inventory has not been done to designate production forest.	National inventory should be designed accordingly to meet the data need.
Multiple use forest	Community forest areas also include the area of forest, shrub land and pasture land.	N/A
Total wood removals	N/A	N/A
Commercial value of NWFP	N/A	N/A

## Other general comments to the table

The trend in forest and shrub lands is based on ratio of the forest and the shrub in Question 1 and hence may not capture actual condition on the ground.

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

Documents for this question:

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

### 5.1 Categories and definitions

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

### 5.2 National data

#### 5.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments

1	GoN, 1995. Forest Act 1993 and Forest Regulation 1995. Ministry of Forest and Soil Conservation, Kathmandu, Nepal	Legal Definitions	1993 1995	N/A
2	MSC, 2002. Nepal Biodiversity Strategy. Ministry of Forests and Soil Conservation, Kathmandu, Nepal.	Community, Lease hold, Production, PAs, Protection Forest.	1988 to 2002	N/A
3	Government of Nepal 2007. The three year interim Plan (2007-2010). Government of Nepal. National Planning Commission, Nepal	Area of Community. Forest and PAs	2007	N/A
4	N/A	N/A	N/A	N/A

### 5.2.2 Classification and definitions

National class	Definition
Protected Forest	A national forest declared by His Majesty's Government as the protected forest considering it to be of special environmental, scientific or cultural importance.
Community Forest	A national forest handed over to an user group for its development, conservation and utilization for the collective interest.
Protected Areas	A geographically defined area that is regulated and managed to achieve a specific conservation objective.
N/A	N/A

### 5.2.3 Original data

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## 5.3 Analysis and processing of national data

### 5.3.1 Adjustment

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### 5.3.2 Estimation and forecasting

<b>B. Area other than Protected Areas</b>
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It has been assumed that forest area figures presented in 5.2.2.B represent “forest and Shrub” as defined by FRA. Further, it has been assumed that relative percent of “forests” and “Shrub” (OWL) cover in each of the categories is same as in over all percentage of “forests” as in Question 1.

### Protection Forests

The area of “protection forests” in 2002 has been assumed for 1990, 2000 and 2005. Same figures have been used for 2010.



National Category	Forest Area in 000 ha			
	1990	2000	2005	2010
Protection forest	571	491	440	440






### 5.3.3 Reclassification

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## 5.4 Data

Table 5a

Categories		Forest area (1000 hectares)				
		1990	2000	2005	2010	2015
	Protection of soil and water	571	491	440	440	650
	... of which production of clean water	N/A	N/A	N/A	N/A	N/A

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

**Other**

N/A

Table 5b

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

## Tiers

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

## Tier criteria

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

## 5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	Soil and water conservation activities have been conducted in 55 districts covering an area of 15-25 Square kilometres in each district.	Forest regime in hilly regions has been contributing on Soil and Water Conservation.
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	The area includes forest inside protected areas and some religious forests.	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
--------------------------	-----	-----

<b>Other general comments to the table</b>
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N/A
-----



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

Documents for this question:

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

### 6.1 Categories and definitions

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

### 6.2 National data

#### 6.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	GoN, 1995. Forest Act 1993 and Forest Regulation 1995. Ministry of Forest and Soil Conservation, Kathmandu, Nepal	Legal Definitions	Legal Definitions	1993-1995
2	MSC, 2002. Nepal Biodiversity Strategy. Ministry of Forests and Soil Conservation, Kathmandu, Nepal.	Community, Lease hold, Production, PAs, Protection Forest.	Community, Lease hold, Production, PAs, Protection Forest.	1988 to 2002
3	Government of Nepal 2007. The three year interim Plan (2007-2010). Government of Nepal. National Planning Commission, Nepal	Area of Community. Forest and PAs	Area of Community. Forest and PAs	2007
4	N/A	N/A	N/A	N/A

#### 6.2.2 Classification and definitions

National class	Definition
Protected Forest	A national forest declared by His Majesty's Government as the protected forest considering it to be of special environmental, scientific or cultural importance.
Community Forest	A national forest handed over to an user group for its development, conservation and utilization for the collective interest.
Protected Areas	A geographically defined area that is regulated and managed to achieve a specific conservation objective.

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

### 6.2.3 Original data

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## 6.3 Analysis and processing of national data

### 6.3.1 Adjustment

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### 6.3.2 Estimation and forecasting

<p><b>Protected Areas</b></p> <p>In the year 1990, the PAs covered 1095 (000 ha) since a Park with an area of 150 (000 ha), three conservation areas spanning 1132 (000 ha) and the buffer areas covering 305 (000 ha) around the six national parks were added to PAs after 1990.</p> <p>Assuming that that the PA has the same relative percent of “forest” and “shrub” cover as in Question 1 for the year 1990 leads to the figure of 391(000) ha. of “forests” and 98 (000) ha. rest under Shrub land PA in 1990.</p> <p><b>1990</b></p> <p>Forest area: 4 817 (000ha) 80% total</p> <p>Other wooded land area: 1 180 (000ha) 20% total</p> <p>Total: 5 997 (000ha)</p> <p>Total protected forest and other wooded land area: 489 (000ha)</p> <p>Total protected forest area: <math>489 (000ha) \times 0.80 = \mathbf{391} (000ha)</math></p> <p>Total protected other wooded land area: <math>489 (000ha) \times 0.2 = \mathbf{98} (000ha)</math></p> <p><b>2000</b></p> <p>In the year 2000, the PA covered 2683 (000 ha) since only one Shivapuri National Park 14400ha ) was added to the PA network between. Assuming that that the PA has the same relative percent forest and shrub as in Question 1 for the year 2000 leads to the figure of 548(000 ha) of “forests” and 246 (000) ha. of “Shrub”.</p> <p>Forest area: 3 900 (000ha) 69% total</p> <p>Other wooded land area: 1 753 (000ha) 31% total</p> <p>Total: 5 653 (000ha)</p> <p>Total protected forest and other wooded land area: 794 (000ha)</p>
---

Total protected forest area:  $794 (000\text{ha}) \times 0.69 = \mathbf{548 (000\text{ha})}$

Total protected other wooded land area:  $794 (000\text{ha}) \times 0.31 = \mathbf{246 (000\text{ha})}$

The area of PAs in 2005 has been assumed to be same as in 2002. The information on forest cover is available for only 1695 (000 ha). The percent of “forest and shrub cover” derived from this data has been applied to each category (NR, WR, HR and CA) of PA. Further, assuming that the PAs have the same relative percent “forest” and “shrub” as in Question 1 for the year 2005 leads to the figure of 526 (000 ha) of “forests” and 274(000) ha of “Shrub”.

Due to a lack of updated figures same protected areas as of 2008 has been considered valid for 2010 and to the 801 (000ha) of protected forest and shrubs has been applied the same percentage of forest and other wooded land from Question 1 to obtain 526 (000 ha) of protected forest and 275 (000 ha) of protected other wooded land.

It is assumed that all the buffer zone were established after 1990 and with 0.737 million people living inside them, these areas do not meet definition of “forests”.

	1990	2000	2005	2010
Forest in protected areas	391	548	526	526
Other wooded land in protected areas	98	246	274	275
Total	489	794	800	801



### 6.3.3 Reclassification

See 4.3.3.

## 6.4 Data

Table 6

Categories	Forest area (000 hectares)
------------	----------------------------

		1990	2000	2005	2010	2015
	Conservation of biodiversity	391	548	526	526	590
	Forest area within protected areas	391	548	526	526	590

## Tiers

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

## Tier criteria

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

## 6.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Conservation of biodiversity	Forests of buffer zone and core areas have been included. "Need to include forest areas of BZ"	The area of conservation seems to decrease due to estimation procedures that multiply the relative percentage of forest and other wooded land as from Question 1. The sum of protected forest and protected other wooded land has a positive trend.
Forest area within protected areas	Protected areas are well defined in Nepal and no problem for data reporting	However, forest area is no separated within the protected.

## Other general comments to the table

The trend in forest and shrub lands is based on ratio of the forest and the shrub in Question 1 and hence may not capture actual condition on the ground.

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

Documents for this question:

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

### 7.1 Categories and definitions

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

### 7.2 National data

#### 7.2.1 Data sources

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

#### 7.2.2 Classification and definitions

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

#### 7.2.3 Original data

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### 7.3 Analysis and processing of national data

#### 7.3.1 Adjustment

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### 7.3.2 Estimation and forecasting

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### 7.3.3 Reclassification

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## 7.4 Data

Table 7

Scientific name of woody invasive species	Forest area affected (000 ha)	
	2005	2010
1.	N/A	N/A
2.	N/A	N/A
3.	N/A	N/A
4.	N/A	N/A
5.	N/A	N/A
6.	N/A	N/A
7.	N/A	N/A
8.	N/A	N/A
9.	N/A	N/A
10.	N/A	N/A
Total	N/A	N/A

Tiers

Category	Tier for status	Tier for reported trend
Invasive species	N/A	N/A

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

## 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

No data are available.

## 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	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

#### 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

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## 8.3 Analysis and processing of national data

### 8.3.1 Adjustment

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### 8.3.2 Estimation and forecasting

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### 8.3.3 Reclassification

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## 8.4 Data

Table 8a

Category		000 ha, number of fires									
		2003		2004		2005		2006		2007	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	25.83	N/A	48.31	N/A	58.08	N/A	39.12	N/A	18.8	N/A
	... of which forest area burned	5.87	N/A	6.66	N/A	26.75	N/A	6.25	N/A	4.24	N/A
Category		2008		2009		2010		2011		2012	
		000 ha	#	000 ha	#	000 ha	#	000 ha	#	000 ha	#
	Total land area burned	40.62	N/A	79.24	N/A	33.04	N/A	39.26	N/A	69.55	N/A
	... of which forest area burned	10.82	N/A	16.02	N/A	1.17	N/A	1.98	N/A	13.55	N/A

Table 8b

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

Outbreak category
1 Insects
2 Diseases
3 Severe weather events

## Tiers

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

## Tier criteria

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

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

Category	Comments related to data definitions etc	Comments on the reported trend
Burned area	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	546.65

Tiers

Category	Tier for reported trend
Reduction in canopy cover	Tier 2

Tier criteria

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

Comments

Category	Comments related to data definitions etc
Reduction in canopy cover	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	GoN, 1995. Forest Act 1993 and Forest Regulation 1995. Ministry of Forest and Soil Conservation, Kathmandu, Nepal	Legal Definitions	1993-1995	N/A
2	MSC, 2002. Nepal Biodiversity Strategy. Ministry of Forests and Soil Conservation, Kathmandu, Nepal.	Community, Lease hold, Production, PAs, Protection Forest.	1988 to 2002	N/A
3	Government of Nepal 2007. The three year interim Plan (2007-2010). Government of Nepal. National Planning Commission, Nepal	Community. Forest and PAs	2007	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
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### 10.2.3 Original data

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## 10.3 Data

Table 10

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

## 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	GoN, 1995. Forest Act 1993 and Forest Regulation 1995. Ministry of Forest and Soil Conservation, Kathmandu, Nepal	1993 1995	N/A
2	MSC, 2002. Nepal Biodiversity Strategy. Ministry of Forests and Soil Conservation, Kathmandu, Nepal.	1988 to 2002	N/A
3	Government of Nepal 2007. The three year interim Plan (2007-2010). Government of Nepal. National Planning Commission, Nepal	2007	N/A
4	N/A	N/A	N/A

Table 11

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

### 11.3 Comments

Category	Comments related to data definitions etc
National stakeholder platform	Parliamentary Committee for Natural Resources

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 ( <i>sub-category</i> )	Forest area that is designated by law or regulation to be retained as forest and may not be converted to other land use.

### 12.2 National data

#### 12.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Government of Nepal 2007. The three year interim Plan (2007-2010). Government of Nepal. National Planning Commission, Nepal	Area	2007	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

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## 12.3 Analysis and processing of national data

### 12.3.1 Adjustment

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### 12.3.2 Estimation and forecasting



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### 12.3.3 Reclassification

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## 12.4 Data

Table 12

Categories		Forest area 2010 (000 ha)
	Forest area intended to be in permanent forest land use	3636
	... of which permanent forest estate	

### Tiers

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

### Tier Criteria

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

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

### 12.5 Comments

Category	Comments related to data definitions etc
Forest area intended to be in permanent forest land use	Intended permanent forest area is around 40% of the total land area of Nepal.
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	Forest Resource Assessment Nepal, Project Document, 2010	Forest Inventory	2010	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

##### 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	2014	no	yes	yes	yes	no	yes
Other field assessments	N/A	N/A	no	no	no	no	no	no
Updates to other sources	N/A	N/A	no	no	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)	no
4 None	no

**Other type of forest reporting**

N/A

**13.4 Comments**

Category	Comments
Forest Inventory	The National Forest Assessment Project is underway. The inventory system is Stratified Multiphase Cluster Sampling, with permanent sample plots and remotely sensed data.
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 ( <i>sub-category</i> )	Forest management plan mainly focused on production
...of which for conservation ( <i>sub-category</i> )	Forest management plan mainly focused on conservation
Monitoring of forest management plans	Government monitoring of forest management plan implementation conducted through field visits or audits of forest management plan performance

### 14.2 National data

#### 14.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	GoN, 1995. Forest Act 1993 and Forest Regulation 1995. Ministry of Forest and Soil Conservation, Kathmandu, Nepal	Legal Definitions	1993-1995	N/A
2	MSC, 2002. Nepal Biodiversity Strategy. Ministry of Forests and Soil Conservation, Kathmandu, Nepal.	Community, Lease hold, Production, PAs, Protection Forest.	1988 to 2002	N/A
3	Government of Nepal 2007. The three year interim Plan (2007-2010). Government of Nepal. National Planning Commission, Nepal	Area of Community. Forest and PAs	2007	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	1500
... of which for production	N/A

... of which for conservation	N/A
-------------------------------	-----

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	0
---	---

## Tiers

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

## Tier criteria

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

## 14.4 Comments

Category	Comments
Forest area with management plan	Forest management models which have already management plan in place i.e. CF, CFM, LHF etc. See questions 4-5-6 for more specific data.
Forest area under sustainable forest management	Forest management guided by approved management plans, which includes community forests, leasehold forests, collaborative forests and protected area forests.
N/A	N/A

## Other general comments

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

Documents for this question:

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

### 15.1 Categories and definitions

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

Table 15

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

Tiers

Category	Tier for status
Type of stakeholder inputs	Tier 2

Tier criteria

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

### 15.2 Comments

Category	Comments
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
	FSC	0	0	0	0	0	14.15	14.15
	PEFC	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	14.09	14.09	14.15	14.15	14.15	14.15	
	PEFC	0	0	0	0	0	0	
	Other	0	0	0	0	0	0	

Table 16b

Domestic forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	1.Name	0	0	0	0	0	0	0
	2.Name	0	0	0	0	0	0	0
	3.Name	0	0	0	0	0	0	0

		2007	2008	2009	2010	2011	2012	
	1.Name	0	0	0	0	0	0	
	2.Name	0	0	0	0	0	0	
	3.Name	0	0	0	0	0	0	

## Tier criteria

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

## Tiers

Category	Tier for status
<b>International</b> forest management certification	Tier 2
<b>Domestic</b> forest management certification	Tier 3

## 16.3 Comments

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

## Other general comments

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

Documents for this question:

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

### 17.1 Categories and definitions

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

### 17.2 National data

#### 17.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	MFSC, the future of Nepal's forest outlook for 2020	Forest revenue	2008	The revenue does not include the revenue collected by the community Forests user groups
2	Department of Forests, official record	Revenue collection	2002, and 2005	The revenue does not include the revenue collected by the community Forests user groups which is even higher than the government revenue.
3	Department of national Park and Wildlife Conservation, Official account	Revenue	2002 And 2005	N/A
4	Community Forest User Group of Nepal (FECOFUN), National data base	Revenue earned from community Forests	2002 and 2005	N/A

### 17.3 Data

Table 17

Category	Revenues / expenditures (000 local currency)		
	2000	2005	2010
Forest revenue	734000	603000	850000

Public expenditure on forestry	1544501	1936024	4000000
	2000	2005	2010
Name of Local Currency	Nepali rupees (NRs)	N/A	N/A

#### 17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	National definition Revenue collected by government agencies and community based user groups from community forests The forest revenue mentioned was collected by government organizations from selling forest products (i.e. timber, NWFPs etc ) and forest services (i.e. ecotourism and other). However, there were more than 12000 community forest user groups over the country collected than two times more revenue than the government organization by managing community forest.
Public expenditure on forestry	Operational expenditure The revenue collected by communities from community forests management used by them which is not reflecting here. Transfer payments Out of total revenue collected by the government from protected areas, up to 50% will go back to the buffer zone.
Other general comments	N/A

Other general comments

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

Documents for this question:

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

### 18.1 Categories and definitions

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

### 18.2 National data

## 18.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	GoN, 1995. Forest Act 1993 and Forest Regulation 1995. Ministry of Forests and Soil Conservation, Kathmandu, Nepal	Official and legal definitions	1993 1995	N/A
2	GoN and MFSC. 2002. Nepal Biodiversity Strategy. Ministry of Forests and Soil Conservation.	Area of ownership	2000	N/A
3	GoN, National Park and Wild life Conservation Act 1973 with fourth amendment 1994	Categories of Protected areas	N/A	N/A
4	MFSC, the future of Nepal's forest outlook for 2020	Forest ownership related data	2008	N/A

## 18.2.2 Classification and definitions

National class	Definition
National Forest	All forests excluding private forest within Nepal, whether marked and unmarked with forest boundaries and the terms shall also includes waste or uncultivated lands or unregistered lands surrounded by the forest or situated near the adjoining forest as well as paths, ponds, lakes, rivers or streams and riverine lands within the forest.
Government managed forest	A national forest to be managed by GoN.
Protected Forest	A national forest declared by GoN as the protected forest considering it to be of special environmental, scientific or cultural importance.
Community Forest	A national forest handed over to an user group for its development, conservation and utilization for the collective interest.
Leasehold Forest	A national forest handed over to any institution established on the prevailing laws, industry based on forest products or community for the purposes of conservation and development of forest.
Religious Forest	A national forest handed over to any religious body, group or community for its development, conservation and utilization.
Private Forest	A forest planted, nurtured or conserved in any private land own by an individual pursuant to prevailing law.
Protected Areas System	Include National Park, Wildlife Reserve, Hunting Reserve; Buffer Zone, Conservation Areas and Strict Nature Reserve which are geographically defined area regulated and managed to achieve specific conservation objectives

### 18.2.3 Original data

New data for many categories have not been available. However, same data used for FRA2005 have been depicted.

The HMGN/NFSC, 2002 in Table 3.9 of the FRA 2010 indicates that about 2090.82 ha area is under private ownership in 2000 but it is not clear whether it has crown cover of more than 10 percent to qualify as “forest” under FRA. Data on private forest were taken from government record for 2005. The remaining area is all national forest and owned by the government of Nepal. Information on private forests “before this date” is not available.

## 18.3 Analysis and processing of national data

### 18.3.1 Adjustment






### 18.3.2 Estimation and forecasting




Since original data are so old and they do not represent the present context. Thus, no estimations have been made from outdated data. There is a provision to register private forest in the government system. However, those records do not represent countrywide available private forests.

### 18.3.3 Reclassification

## 18.4 Data

Table 18a

Categories		Forest area (1000 hectares)			
		1990	2000	2005	2010
	Public ownership	4817	3898	3634	3634
	... of which owned by the state at national scale	N/A	N/A	N/A	N/A
	... of which owned by the state at the sub-national government scale	N/A	N/A	N/A	N/A
	Private ownership	0	2	2.3	2.3
	... of which owned by individuals	N/A	N/A	N/A	N/A

	... of which owned by private business entities and institutions	N/A	N/A	N/A	N/A
	... of which owned by local, tribal and indigenous communities	N/A	N/A	N/A	N/A
	Unknown ownership	0	0	0	0
TOTAL		4817.00	3900.00	3636.30	3636.30

## Tiers

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

## Tier criteria

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

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Public Administration	4317	3133	2412	1925
Individuals	0	0	0	2.4
Private companies	0	15	22	20.4
Communities	500	750	1200	1665.4
Other	0	0	0	20.8
TOTAL	4817.00	3898.00	3634.00	3634.00



Category	Tier for reported trend	Tier for status
Public Administration	Tier 1	Tier 2
Individuals	Tier 1	Tier 2
Private companies	Tier 1	Tier 2
Communities	Tier 1	Tier 2
Other	Tier 1	Tier 1

### 18.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Public ownership	The past forest inventory reports have not categorized the forest on the basis of ownership. 2005 data have been repeated for 2010.	All the forest and shrub area presented in the inventory reports come under the public ownership category.
Private ownership	Privately owned forest area is taken from the Annual report of department of Forest. 2005 data have been repeated for 2010.	In 1990 figures on private forests were not available so the total forest area as coming from table one has been considered as publicly owned even if it may include some private forests which were not recorded. Data reported are on the basis of area and numbers of private forests have been registered in the district forest offices.
Unknown ownership	No forest category falls under this ownership.	Not reported yet.
Management rights	Under the public ownership, there are different management rights. National forest can be handed over to the local communities in the management contact. 2005 data have been repeated for 2010.	Community based forestry is strong in Nepal. Community forestry Data have been reported since 1990. The area managed under CF is collected from the record of Department of Forest (DoF).

#### Other general comments to the table

In Nepal forest with public ownership has different management tenures. However, given table does not address on that issues.

## 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	DoF, 2004. Hamro Ban (Fiscal Year 2002/03). Department of Forests, Kathmandu, Nepal	Employment Statistics	2004	N/A
2	DPR, 2004. Annual Report (Fiscal Year 2059/60). Department of Plant Resources, Kathmandu, Nepal	Employment Statistics	2004	N/A
3	DFRS, 2004. Annual Report (Fiscal Year 2060/61). Department of Forest Research and Survey, Kathmandu, Nepal.	Employment Statistics	2004	N/A
4	MoFSC, 2003. Human Resources Strategy Report (draft version). Ministry of Forest and Soil Conservation, Nepal.	HRD policy document	2003	N/A
5	Personal Communication to The Timber Corporation of Nepal, Forest Product Development Board, Department of National Parks and Wildlife Conservation, Department of Soil Conservation and Watershed Management, Herbs Production and Processing Company Limited.	Employment statistics	2004	N/A

6	HMGN/ADB/FINNIDA, 1988. Master Plan for the Forestry Sector in Nepal. Human Resources Development Plan. Ministry of Forest and Soil Conservation, Kathmandu, Nepal.	HRD policy	1985-86	N/A
7	MFSC, The future of Nepal's forest outlook for 2020.	Employment	2008	N/A
8	LFP/ERI 2011, Employment in Nepal's Forest Sector	Employment	2011	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

The Master plan for Forestry Sector provides following estimates of employment in 1990.

Category	Employment (000 person years)
Government Employment – Regular Staff	13
Employment - Forestry Operations	
Forest Establishment	30.4
Soil Conservation and Watershed	5.9
Timber Harvesting	95.3
Sub Total	131.6
<b>TOTAL</b>	<b>144.6</b>

### Reclassification into FRA 2010 categories

The estimate of employment for the year 1990 has been taken from Master Plan for the Forestry Sector of Nepal, 1988. The employment under Government has been apportioned to deliver “services” based on the ratio of the conservation area.. Similarly employment relating to soil conservation and watershed has been apportioned to provide the “services”. The remaining employment through Government and other employment has been apportioned for forestry purpose. This information coupled with information on forest area provides following estimates of per hectare employment through “provision of services” and “provision of goods”. However, it does not include the local employment generation due to community based forestry programs and private sector.

<b>Category</b>	<b>Conservation</b>	<b>Rest</b>	<b>Total</b>
Forested Area (000 ha) in 1990	391	4426	4817
Employment /ha in 1990	0.01779	0.031099	0.048888

Using above estimated has lead to the following estimates of total employment.



<b>Employment Categories</b>	<b>Employment (1000 person-years)</b>		
	<b>1990</b>	<b>2000</b>	<b>2005</b>
Provision of goods	137.6	96.1	87.3
Provision of services	7.0	14.4	13.8
Unspecified forestry activities			
<b>TOTAL</b>	<b>144.6</b>	<b>110,5</b>	<b>101.1</b>

Employment generation was decreasing during the Maoist insurgency period (1996-2006) when forestry activities were slowed down due to the deteriorating law and order situation.

Since original data are so old and they do not represent the present context. Thus, no estimations have been made from outdated data. There is a provision to register private forest in the government system. However, those records do not represent countrywide available private forests.

**19.3 Data**

Table 19

Category		Employment (000 years FTE)			
		1990	2000	2005	2010
	Employment in forestry	137.6	96.1	105	144.2
	... of which female	N/A	N/A	N/A	33.5

**19.4 Comments**

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	N/A	N/A

**Other general comments to the table**

The employment figure under the category of primary production of goods excludes the employment in fuelwood and fodder collection, which is mainly voluntary.

## 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)	50	USD	2010

### 20.3 Comments

Category	Comments
Gross value added from forestry (at basic prices)	The value includes all the forestry product contribution coming from Government managed and community managed forests .

Other general comments

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

Documents for this question:

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

### 21.1 Categories and definitions

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

### 21.2 National data

#### 21.2.1 Data sources

	References to sources of information	Variables	Years	Additional comments
1	Government of Nepal 2007. The three year interim Plan (2007-2010). Government of Nepal. National Planning Commission, Nepal	Area	2007	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	N/A	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

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