

**Food and Agriculture Organization of the United Nations,  
Forestry Department**

and



**International Network for Bamboo and Rattan (INBAR)**

**GLOBAL FOREST RESOURCES  
ASSESSMENT UPDATE 2005**

**BANGLADESH  
COUNTRY REPORT  
ON  
BAMBOO RESOURCES**

BEIJING, 9 MAY 2005

BY

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## General Guidelines:

The main purpose of the Country Thematic Report on Bamboo Resources (CTRB) is to develop a Global Bamboo Resources Assessment (GBRA) and to integrate it in the global UN FAO FRA. The approach is to create sub-category on Bamboo in the framework of FRA 2005 ([www.fao.org/forestry/fra](http://www.fao.org/forestry/fra)) to provide supplementary information on bamboo resources. This document provides format for compiling information on Bamboo resources and should be treated as a supplement to the basic documents of FRA 2005 including Specification of National Reporting tables, FRA Working Paper No. 81; Guidelines for Country Reporting, FRA Working Paper No. 82 and Terms and Definitions, FRA Working Paper No. 83.

The country Bamboo Resources Thematic Study Report should clearly and concisely document all data sources that have been selected and used for this reporting process and assign quality rating to the data sources. Comment on any problems encountered in finding relevant data sources. The Report should also indicate if no data sources have been found which meet the requirements. Similarly all the relevant national classification and definitions should be documented clearly and concisely. Comments on any problems or incompatibilities in classification and definitions should also be provided, if necessary. Please email the Bamboo Thematic Report directly to the focal point at INBAR ([mlobovikov@inbar.int](mailto:mlobovikov@inbar.int)) with the copy to FAO ([kailash.govil@fao.org](mailto:kailash.govil@fao.org)) as a part of GFRA.

## General information

<b>Country:</b>	
<b>National Correspondent: (Name and contact information)</b>	
<b>Other professionals involved in the reporting process:</b>	
<b>Date of submission of 1<sup>st</sup> draft:</b>	March 1 2005
<b>Date of submission of 2<sup>nd</sup> draft</b>	April 1 2005
<b>Date of submission of final report</b>	May 1 2005

## 1 Table T1 – Extent of Bamboo Forest

### 1.1 GBRA 2005 Categories and definitions

Category	Definition
Bamboo on forest Land Bamboo on plain land ( village bamboo)	Bamboo on lands defined as "Forest" in FRA 2005. Bamboo cultivated in agricultural land, homesteads, canal bank etc.

### 1.2 National Data on Bamboo Resources

#### 1.2.1 Data sources

References	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. Anon.	M	Area, species, ecology etc	1963	
2. Choudhury, M.U.	M	Area, sps, ecology, stocking	1967 & 19 70	
3. Hammermaster, E.T	M	weight, stock volume etc	1981	
4. Chowdhury, M. R.	M	Area, weight, productivity etc	1984	
5. R. De Milde et al.	H	Area, Types, stock etc	1985	
6. Drigo et al.	H	Area, types, stock etc	1988	
7. FMP ADB/ UNDP/FAO - BGD/83/025	M	Area, types, stock etc	1993	
8. Banik, R.L	M	Area, biology, silviculture , sps diversity etc	1993 & 2000	
9. Haq & Alim	M	Area, Species	1995	
10. Forestry Master Plan (FMP)	M	Area, Stock volume etc	1993	

#### 1.2.2 Classification and definitions

National class	Definition
Forest Bamboo	Bamboo naturally grow on forest lands.
Village Bamboo	Bamboo cultivated on agricultural land, settlement, homesteads, canal bank etc.

#### 1.2.3 Original data

#### Bamboo forest areas of Bangladesh:

Bamboo forest	Past report			Last report		
	Estimated year	Area (ha)	Reference	Estimate year	Area (ha)	1991 ( Area ha)
Sylhet	1963	39252	Choudhury (1970)	1988	13964 (Drigo et al 1988)	13964
Chittagong Hill Tracts : Kassalong R .& Rankhing R.	1961- 63	241631	Forestal (1963)	1984	51056 & 23028= 74084 (De Milde et al. 1985)	48010 & 23032 = 71042 (FMP 1993, p.55)
Sangu & Matamohari R.	1961	31260	Anon. (1961)	1984	24606 (FMP 1993, p72)	24606
Banbarban USF					14791 (FMP1993)	14791
Chittagong		NA			52471 ( FMP 1993, p72)	52471
Cox's bazar	1967	58301	Choudhury (1967)	1984	34499 (De Milde 1985, FMP 1993, p72)	34499
Bamboo in Tea					10,118 ( choudhury 1984)	10,118

Estate (Private)					
<b>Total area of Forest bamboo</b>				<b>224,533</b>	<b>221,491</b>
<b>Total area of Village bamboo</b>				<b>147,368</b> (Haq and Alim 1995)	<b>270,000</b> (FMP 1992)
<b>Total bamboo area</b>				<b>371, 901</b>	<b>491, 491</b>

Choudhury (1984) reported the bamboo areas of Bangladesh in different categories of forests as shown below :

1. Pure bamboo forest areas of national forests : 91,058 hectares (ha)
  2. High forests in the hill forest areas : 60,705 ha
  3. Understorey of plantations : 60,705 ha
  4. Unclassed State Forests and Khas forest : 121,410 ha
  5. Tea estate forests (bamboo forest) : 10,118 ha
  6. Village forests : 53, 179 ha
- Total : 397,175 ha**

Haq and Alim (1995) reported that the area under bamboo in the homesteads ( **village bamboo**) was 364,000 Acre (**147,368.42 ha**). But according to FMP (1992) the area is about **270,000 ha**.

### 1.3 Data for National Reporting Table T1

GBRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Bamboo on forest land	221.491	-	-
Monopodial bamboo area	90.00		
Sympodial bamboo area	131.491		
Sub-Total	<b>221.491</b>		
Bamboo on village grove (plain land bamboo)	<b>270.000</b>		
Grand Total	<b>491.50</b>		

Most of the bamboo species in Bangladesh are Sympodial bamboo. The most prominent bamboo in natural forests, *Melocanna baccifera* (Muli) arising singly in a variety of distance from a common creeping rhizome is not true **monopodial** categories. The species covers more than **91, 058 ha** of natural bamboo forest (Chowdhury,1981).But Banik ( 2000) reported that the area is about **90000 ha**.

According to Tewari (1992 ) the bamboo forest in Bangladesh covers an area of 212,468 ha, according to Ali (1981) the area is 0.6 million ha, and Banik (2000) reported that it is 129, 032 ha. Choudhury (1984) reported that bamboo forest covers an area of 287,338 ha of which 91,058 ha area is purely bamboo forest.

### 1.4 Comments to National Reporting Table T1

Different forest units of Bangladesh have been surveyed and inventoried in different years and under different designs. This creates problem in arranging the information over space and time. Forest bamboo area has decreased due to over exploitation but village bamboo area has increased due to social forestry activities by government and non- government organizations during the last two decades.

## 2 Table T2 – Ownership of Bamboo Forest

### 2.1 GBRA 2005 Categories and definitions

Category	Definition
Private ownership	Land owned by individual families, private cooperatives, corporations, industries, religious and educational institutions, pension or investment funds, and other private institutions.
Public ownership	Land owned by the State ( Forest Department or Department of land Revenue )
Other ownership	Land is owned by the state but has usufruct right of the local people ( marked as Unclassified State Forest)

### 2.2 National Data on Bamboo Resources

#### 2.2.1 Data sources

References	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. Anon.	M	Area, species, ecology etc	1963	
2. Choudhury, M.U.	M	Area, sps, ecology, stocking	1967 & 19 70	
3. Hammermaster, E.T	M	weight, stock volume etc	1981	
4. Chowdhury, M. R.	M	Area, weight, productivity etc	1984	
5. R. De Milde et al.	H	Area, Types, stock etc	1985	
6. Drigo et al.	H	Area, types, stock etc	1988	
7. ADB/ UNDP/FAO - BGD/83/025	M	Area, types, stock etc	1993	
8. Banik, R.L	M	Area, biology, silviculture , sps diversity etc	1993 & 2000	
9. Haq & Alim	M	Area, Species	1995	
10. Forestry Master Plan (FMP)	M	Area, Stock volume etc	1993	

#### 2.2.2 Classification and definitions

National class (Bamboo)	Definition
Private ownership	Land owned by individuals, families, private co-operatives, corporations, industries, religious and educational institutions, tea estates etc.
Public ownership	Land owned by state ( Forest Department and department of land revenue)
Other ownership	Land owned by the state but has usufruct right of the local people ( Unclassified State Forest )

#### 2.2.3 Original data

### 2.3 Data for National Reporting Table T2

GBRA 2005 Categories	Area (1000 ha)	
	1990	2000
Private ownership	Tea Estate bamboo : 10.118 (Choudhury 1984) Homestead : 270.00 (FMP 1993)	
Public ownership ( including USF)	211.373 (FMP 1993)	
<b>Total Forest Area</b>	<b>491.491 = 491.50</b>	

## 2.4 Comments to National Reporting Table T2

Forest loses in the public forests and total land area of private forests (except homesteads) are not conclusively known. There are bamboo forest in the Unclassified State Forest (USF) in the Chittagong Hill Tracts (CHT) in the districts of Bandarban, Rangamati and Khagrachari. The USF land is under the control of District administration but many patches of bamboo forests are managed by local tribes personally or by the community and some areas are also managed by Karnafully Paper Mill. But no conclusive data regarding area, stock, yield, removal per year etc. are available.

## 3 Table T3 – Characteristics of Bamboo Forest

### 3.1 GBRA 2005 Categories and definitions

Category	Definition
Natural bamboo forest	Bamboo area of naturally regenerated native bamboo species.
Plantation	Bamboo area of native or introduced species, established through planting, seeding or assisted natural regeneration.

### 3.2 National data on Bamboo in Forest

#### 3.2.1 Data sources

References	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. Anon.	M	Area, species, ecology etc	1963	
2. Choudhury, M.U.	M	Area, sps, ecology, stocking	1967 & 1970	
3. Hammermaster, E.T	M	weight, stock volume etc	1981	
4. Chowdhury, M. R.	M	Area, weight, productivity etc	1984	
5. R. De Milde et al.	H	Area, Types, stock etc	1985	
6. Drigo et al.	H	Area, types, stock etc	1988	
7. ADB/ UNDP/FAO - BGD/83/025	M	Area, types, stock etc	1993	
8. Banik, R.L	M	Area, biology, silviculture, sps diversity etc	1993 & 2000	
9. Haq & Alim	M	Area, Species	1995	
10. Forestry Master Plan (FMP)	M	Area, Stock volume etc	1993	

#### 3.2.2 Classification and definitions

National class	Definition
Natural bamboo forest	Bamboo area of naturally regenerated native bamboo species.
Plantation in forest land	Bamboo area of native or introduced species, established through planting, seeding or assisted natural regeneration.
Plantation in village (homesteads, canalbank, roadside etc.)	Bamboo area of native species established through planting rhizomes, branch cutting, seedlings etc

#### 3.2.3 Original data

Different bamboo species either as understorey in association with tree species or as pure stand have naturally grown in the semi ever-green and moist deciduous forests of Bangladesh. There is normally no undergrowth in the bamboo forest, but in the more open areas weeds develop to a varying extent.

Seven species of bamboo have been observed to grow naturally in the forest of Bangladesh. Among them, the most dominant species is *Melocanna baccifera* (Muli) covering an area of 90,000 ha, which is 70- 90 percent of the total hill bamboo forests. Other species occur sporadically either in association with *Melocanna baccifera* or in isolation forming small patches of pure vegetation (Banik 1994, 2000).

The forest bamboo areas are dominated by thin-wall bamboo species and village bamboo are dominated by thick-wall bamboo.

The bamboo forests of Bangladesh may be categorized as:

<b>I. Natural bamboo forest ( Hill forest)</b>	<b>:</b>	<b>211, 373 ha</b>
<b>II. Bamboo plantations in tea estates (Hill forest)</b>	<b>:</b>	<b>10, 118 ha</b>
<b>III. Bamboo plantations in village ( Plain land)</b>	<b>:</b>	<b>270,000 ha</b>
<b>Total</b>	<b>:</b>	<b>491,491 ha</b>

I. Natural bamboo forests :

	Kassalong CHT ( R. De Milde et al. 1985 )	Rankhiang CHT ( R. De Milde et al. 1985 )	Cox 's Baz	Sangu- M.Mohari CHT(FMP1992)	CTG. (Banik 2000)	Sylhet Forest (Drigoetal.88)
.Timber type						
1. Timber bamboo	14878 ha	3228 ha				
2. Bamboo timber	23525 ha	6194 ha				
3. Bamboo types 4. plantation	12653 ha	13606 ha	34499 ha	24606 ha	52471 ha	13964
5. Non -forest 6. Non- production & water areas						
7. Bamboo in USF ( Bandarban)			14791 ha ( FMP 1993, Kibria et al 2000 page 30)			
II. Bamboo plantations in Tea Estates			10 118 ha ( Choudhury 1984)			
III. Bamboo plantation in Village :						
1. Homestead			270,000 ha ( FMP 1993)			
2. Other land			NA			

### 3.3 Data for National Reporting Table T3

GBRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Natural bamboo forest	211.373		
Plantation in forest land	10.118		
Plantation in homesteads	270.00		

### 3.4 Comments to National Reporting Table T3

Village forest covers an area of 270,000 ha (FMP 1992) but Haq and Alim (1995) reported that the area under bamboo in homesteads is 364000 Acre ( 147,368.42 hectare). No data available about bamboo clumps cultivated on canal bank, road sides, and other lands in the villages of plain land. The Forest Department has been creating bamboo plantations for about last one decade in the forest areas but no conclusive data is available.

## 4 Table T4 – Bamboo Growing Stock

### 4.1 GBRA 2005 Categories and definitions

Category	Definition
Bamboo Growing stock	Weight (tons) of all bamboo forest more than X cm in diameter at breast height.
Commercial growing stock of Bamboo	The part of the growing stock of bamboo species that are considered as commercial or potentially commercial under current market conditions, and with a diameter at breast height of Z cm or more.
Growing stock of Common bamboo species	Weight (tons) of the most common bamboo species.

## 4.2 National data on Bamboo Resources

### 4.2.1 Data sources

References	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Hammermaster E.T.	M	Species, growing stock, weight	1981	
Choudhury M.R.	M	Area, Yield, Demand & supply	1984	
Forestry Master Plan	M	Ara, stocking, supply, demand etc.	1993	
Drigo, R. et.al	H	Area, stock,	1988	
De Milde et.al.	H	Area, stock.	1985	
De Milde et. al	H	Area, stock	1885	

### 4.2.2 Classification and definitions

Category	Definition
Forest bamboo stock	Bamboo areas of naturally regenerated native bamboo species.
Village bamboo stock	Bamboo areas cultivated in homesteads, canal bank, road side etc.

### 4.2.3 Original data

#### a) Growing stock of bamboo in Bangladesh ( Chowdhury, M.R. 1984) :

Bamboo forest type	Area (ha)	Present Growing stock A.D. Tons in 1984
Pure bamboo forest areas of national forests	91058	600,000
High forests in the hill forest areas	60705	75,000
Understorey of plantations	60,705	50,000
USF & Khas forests	121,410	50,000
Tea estate forests	10,118	25,000
<b>Village forests</b>	<b>53,189</b>	<b>1,784,000</b>
<b>Total Growing Stock</b>	<b>397,175</b>	<b>2,584,000</b>

#### Air-dry weight (tons) for of the most common bamboo species (Hammermaster 1981):

Species	Mature Tons in 1000 of A.D. ( 10% M.C.)
1. <i>Bambusa vulgaris</i>	1230.2
2. <i>Bambusa nutans</i>	226.5
3. <i>Bambusa longis piculata</i>	85.8
4. <i>Bambusa burmanica</i>	97.9
5. <i>Dendrocalamus calostachys</i>	63.9
6. <i>Oxytennanthera nigrociliata</i>	26.0
7. <i>Bambusa tulda</i>	7.1
8. <i>Melocana bambusoides</i>	5.4
9. <i>Dendrocalamus longispathus</i>	11.2
10. Others	21.7
Total :	1775.7

**b) Growing stock of bamboo in Bangladesh ( FMP 1993, Banik 2000, FRA 2000) :**

Catagory	Mature culms ( mill. Nos)	Immature culms ( Mill.nos)	Total ( mill.no.)
<b>Village-bamboo</b>	443.78	611.15	1054.93
<b>Forest bamboo :</b>			
Chittagong Forest Division	15.69	119.82	135.51
Sylhet Forest Division	102. 00	123.35	225.35
Chittagong Hill Tracts	NA	NA	NA
Cox' Bazar Forest Division	NA	NA	NA

**4.3 Data for National Reporting Table T4**

GBRA 2005 Categories	Total weight (tons)		
	1990	2000	2005
Bamboo Growing stock in Village groves	0.803 mill. A.D. ton per year ( Choudhury 1984)		
Bamboo growing stock in natural forest	0.19 mill. A.D. ton per year ( Choudhury 1984)		

Note: if possible, please (1) breakdown by species groups (2) include information on the minimum diameter used as thresholds and (3) provide coefficient of number of culms per a ton of weight

The annual yield of culm timber generally ranges **from 3 - 10 tons, sometimes reaching 30 tons per hectare (Banik, 2000)**. The author reported about bamboo growing stock in numbers in the village grove as follows :

Culm category	1981 (FAO)	1991 (FMP)
Mature culm in the growing stock( mill. no.)	189.84	443. 78
Immature culm in the growing stock ( mill.no.)	558.14	611.15
<b>Total ( million numbers)</b>	<b>747.98</b>	<b>1054.93</b>

**Village forest provides 0.803 million A.D. Ton per year and natural bamboo forests provides 0.19 million A.D. Ton per year ( Choudhury 1984)**. The author also reported that the estimated culm production was 747. 98 million numbers. The total supply of bamboo in Bangladesh is about 722 million. **The contribution of public forest is estimated at 194 million culms and the village forest at about 528 million culms FMP (1992)**. Tewari (1992) reported that the annual yield of bamboo in Bangladesh is 0.8 metric ton per hectare. Banik (2000) reported that total stock of bamboo culms in the village groves were about 1054.93 million numbers in 1991.

#### 4.4 Comments to National Reporting Table T4

During the last 10-15 years village bamboo resources have been increased but most of the forest areas have been degraded to poor density forests. Forests in Chittagong Hill Tracts are the richest in bamboo followed by Sylhet, Chittagong and Cox's Bazar. But authentic data on growing stock in these bamboo forest areas is very limited. Very limited information about bamboo stock in sylhet, Chittagong and Cox's Bazar is available from the survey report Drigo et.al (1988) and De Milde et.al. (1985). But the figures given are to some extent theoretical since they are based on the condition that the same felling intensity is evenly applied throughout the bamboo area.

### 5 Table T5 – Bamboo Biomass stock

#### 5.1 GBRA 2005 Categories and definitions

Category	Definition
Above-ground biomass of Bamboo	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass of Bamboo	All living biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.

#### 5.2 National Data on Bamboo Resources

##### 5.2.1 Data sources

References	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Hammermaster	M	area, stocking area,	1981	
Choudhury, M.R.	M	stocking, weight	1984	
Banik, R.L.	M	area, stocking,	1992 & 1994	
FAO 1999 ( FRA 2000)	M	area,growing Stock, production	2000	

##### 5.2.2 Classification and definitions

Category	Definition

##### 5.2.3 Original data

**Table 5.2.3 9(a) Number of air dry culms per ton for some species of bamboo developed by Hammermaster (1981) :**

Species	Number of mature culms / A.D. ton
<i>Bambusa arundinacea</i>	63
<i>B. burmanica</i>	126
<i>B. vulgaris</i>	77
<i>B. nutans</i>	170
<i>B. longispiculata</i>	233
<i>Dendrocalamus longispathus</i>	202
<i>D. calostachya</i>	115
<i>Oxytenanthera nigrociliata</i>	213

**Table 5.2.3 (b) : Above-ground biomass of some bamboos in Bangladesh**  
(Source : S.A.M Nurul Islam, Unpublished data, BFRI.)

Bamboo species	Height	Diameter at basal internode	Biomass(above ground) of 100 bamboos (metric ton)	Number of culms per metric ton	Location/ condition
<i>Bambusa balcooa</i>	14.92	10.0	3.70	27	Chittagong/ Green weight
<i>B. nutans</i>	19.0	7.54	2.53	39	-do-
<i>B. salarkhanii</i>	22.73	8.51	3.70	27	-do-
<i>B. vulgaris</i>	21.8	8.04	4.33	23	-do-
<i>B. vulgaris var. striata</i>	12.97	6.09	2.31	43	-do-
<i>B. burmanica</i>	18.5	6.98	2.36	42	-do-
<i>B. polymorpha</i>	21.0	9.62	4.14	24	-do-
<i>Dendrocalamus brandisii</i>	17.63	11.4	4.01	24	-do-
<i>D. longispathus</i>	15.93	7.83	9.93	44	-do-
<i>D. giganteus</i>	43.40	18.5	5.62	18	-do-
<i>Thyrsostachys oliveri</i>	11.21	5.47	1.13	88	-do-

Note: Above ground (AG) biomass means total weight of leaves, branches, culm and culm sheath of a bamboo.

### 5.3 Data for National Reporting Table T5

GBRA 2005 Categories	Bamboo Biomass (million metric ton dry weight)		
	1990	2000	2005
Above-ground biomass of Bamboo	Table 5.2.3 (a) and --( b)		
Below-ground biomass of Bamboo	NA		
Total of living biomass	NA		
<b>TOTAL</b>			

### 5.4 Comments to National Reporting Table T5

No authentic report of bamboo biomass study is available. Some unpublished data have been incorporated in the report.

## 6 Table 6 – Diversity of bamboo tree species

### 6.1 GBRA 2005 Categories and definitions

Category	Definition
Number of native Bamboo species	The total number of native tree species that have been identified within the country.
Number of introduced Bamboo species	The total number of introduced tree species that have been identified within the country.
Number of critically endangered Bamboo species	The number of native tree species that are classified as “Critically endangered” in the IUCN red list.
Number of endangered Bamboo species	The number of native tree species that are classified as “Endangered” in the IUCN red list.
Number of vulnerable Bamboo species	The number of native tree species that are classified as “Vulnerable” in the IUCN red list.

## 6.2 National Data on Bamboo Resources

### 6.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. Alam, M.k. 1982	H		1982	
2. Alam, M .K. 1995	H		1995	
3. Banik, R.L. 2000	M		2000	

### 6.2.2 Classification and definitions

Category	Definition

## 6.3 Data for National Reporting Table T6

GBRA 2005 Categories	Number of species (Year 2000)
Native Bamboo species	33 ( 7 are occurring naturally in the forest )
Introduced Bamboo species	4
Critically endangered Bamboo species	-
Endangered Bamboo species	3
Vulnerable Bamboo species	-

## 6.4 Comments to National Reporting Table T6

Banik ( 1992, 1994c, 2000) reported that due to the destruction of natural forest habitat, *Dendrocalamus hamiltonii*, *Schizostachyum dulloa* and *Melocalamus compactiflorus* have become threatened in Bangladesh. These endangered bamboo species of Bangladesh are not listed in the IUCN red list.

## 7 Table T7 – Bamboo Removal

### 7.1 GBRA 2005 Categories and Definitions

Category	Definition
Bamboo Wood removal	The Bamboo wood removed (volume) for production of goods and services other than energy production (woodfuel).
Woodfuel Bamboo removal	The Bamboo wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

## 7.2 National Data on Bamboo Resources

### 7.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Forestry Master Plan	M	Area, Supply, demand etc	1993	
Banik, R. L.	M	Area, Silviculture, stock etc	2000	

### 7.2.2 Classification and definitions

National class	Definition

--	--

Original data :

### Removal (supply) of bamboo from forests and village groves in 1989- 90 and 1990-91 :

Bamboo Forest	Number Culm removed in 1989-90 ( million)	Number Culm removed in 1990 - 91 (million)	Reference
Chittagong FD	15.14	11.85	FMP ( 1993)
Cox's Bazar FD	12.48	5.83	""
Sylhet FD, lease land & tea garden	30.47	27.18	""
Chittagong Hill Tracts ( including USF)	57.37	64.40	""
Sub-total	115.46	109.26	
Village bamboo		443. 80	Banik (2000)
Total		553.06	

Banik (2000) reported that a total of **706.3 million bamboo culms were used in 1993**. Choudhury 1981 reported that total number of **estimated culm production was 747.98 million**. FMP (1992) stated that the **total supply of bamboo is about 722 million culms**, of which the state forests supply about 194 million bamboo and village forest supply about 528 million bamboo. **The village forest annually supply about 0.53 million Air Dry Metric Ton of bamboo.**

### 7.3 Data for National Reporting Table T7

The leaves, branches and rhizomes of bamboo is extensively used as fuel wood in Bangladesh particularly in the northern districts of the country. But no data is available.

GBRA2005	Bamboo removal (million ton)		
	1990	2000	2005
Bamboo wood removal	0.993 million A.D. Ton / year (Chowdhury 1984)		
Bamboo woodfuel removal	NA		
Total			

### 7.4 Comments to National Reporting Table T7

## 8 Table 8 – Value of Wood Removal

### 8.1 GBRA 2005 Categories and Definitions

Category	Definition
Bamboo Wood removal	The Bamboo wood removed (volume) for production of goods and services other than energy production (woodfuel).
Woodfuel Bamboo removal	The Bamboo wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

## 8.2 National Data

### 8.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
No information is available				

### 8.2.2 Classification and definitions

National class	Definition

### 8.2.3 Original data

No authentic data is available.

## 8.3 Data for National Reporting Table T8

GBRA2005	Value (million USD)		
	1990	2000	2005
Bamboo wood removal	Not available		
Bamboo woodfuel removal			
Total			

## 8.4 Comments to National Reporting Table T8

## 9 Table 9 – Non Wood Bamboo Product Removal

### 9.1 GBRA2005 Categories and Definitions

<b>Category</b>
<b><u>Plant products / raw material</u></b>
1. Food
2. Raw material for medicine and aromatic products
3. Raw material for utensils, handicrafts & construction
4. Ornamental plants
5. Other plant products
<b><u>Animal products / raw material</u></b>
1. Living animals
2. Other edible animal products
3. Other non-edible animal products

## 9.2 National Data on Bamboo Resources

### 9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Banik, R. L.	M		2000	
FAO	M		1998	

## 9.2.2 Classification and definitions

## 9.2.3 Original data

**Food:** The young shoot of *Melocanna baccifera*, *Dendrocalamus longispatus*, *D. hamiltonii* and *Bambusa tulda* are used as food. The yield of edible-shoot ranges from 3 to 30 tons per hectare per year (Banik 2000). No information is available about total production.

**Medicine:** A valuable medicine, Tabashir or Banslochanis occasionally found inside the culm internodes of *Bambusa bambos*, *Dendroclamus strictus* and *Melocanna baccifera*. It is also an important ingredient for preparing famous Ayurvedic medicine, "Chawanprash" commonly used as a cooling energy tonic, aphrodisiac, cure to chronic cough and old age weakness (Banik, 2000). No information is available about total production.

**Ornamentals:** *Bambusa polymorpha* and *B.vulgaris* variety *striata* are used as ornamental bamboo.

**Raw materials for handicrafts, utensils, and construction:** Bamboo is the principal raw materials for rural constructions, cottage industries for making handicrafts, utensils and furniture, pulp and paper and transport construction. A total of 706.3 million bamboo were used for making these items in Bangladesh in 1993 (Banik 2000).

Other uses: Raw materials for basket making, furniture, novelties, agricultural implements, fishing rods, frames for fishing nets, walking sticks, handles of some tools, musical instruments, bullock carts, containers etc. Dry bamboo leaves are extensively used as fuel wood and green leaves as fodder in the rural Bangladesh. Bamboo rhizomes are sold to brick kilns at the rate of 600 to 800 Taka (USD 10 to 13.34) per ton (Banik 2000).

## 9.3 Data for National Reporting Table T9

GBRA 2005 Categories	Scale factor	Unit	NWFP removal		
			1990	2000	2005
<b>Plant products / raw material</b>					
1. Food (bamboo shoots)					
2. Raw material for medicine and aromatic products					
3. Raw material for utensils, handicrafts & construction					
4. Ornamental plants					
5. Other plant products					
<b>Animal products / raw material (if any)</b>					
1. Living animals					
2. Other edible animal products					
3. Other non-edible animal products					

## 9.4 Comments to National Reporting Table T9

No Data is available.

## 10 Table T10– Value of Non Wood Bamboo Product

### 10.1 GBRA 2005 Categories and Definitions

### 10.2 National Data on Bamboo Resources

#### 10.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments

#### 10.2.2 Classification and definitions

#### 10.2.3 Original data

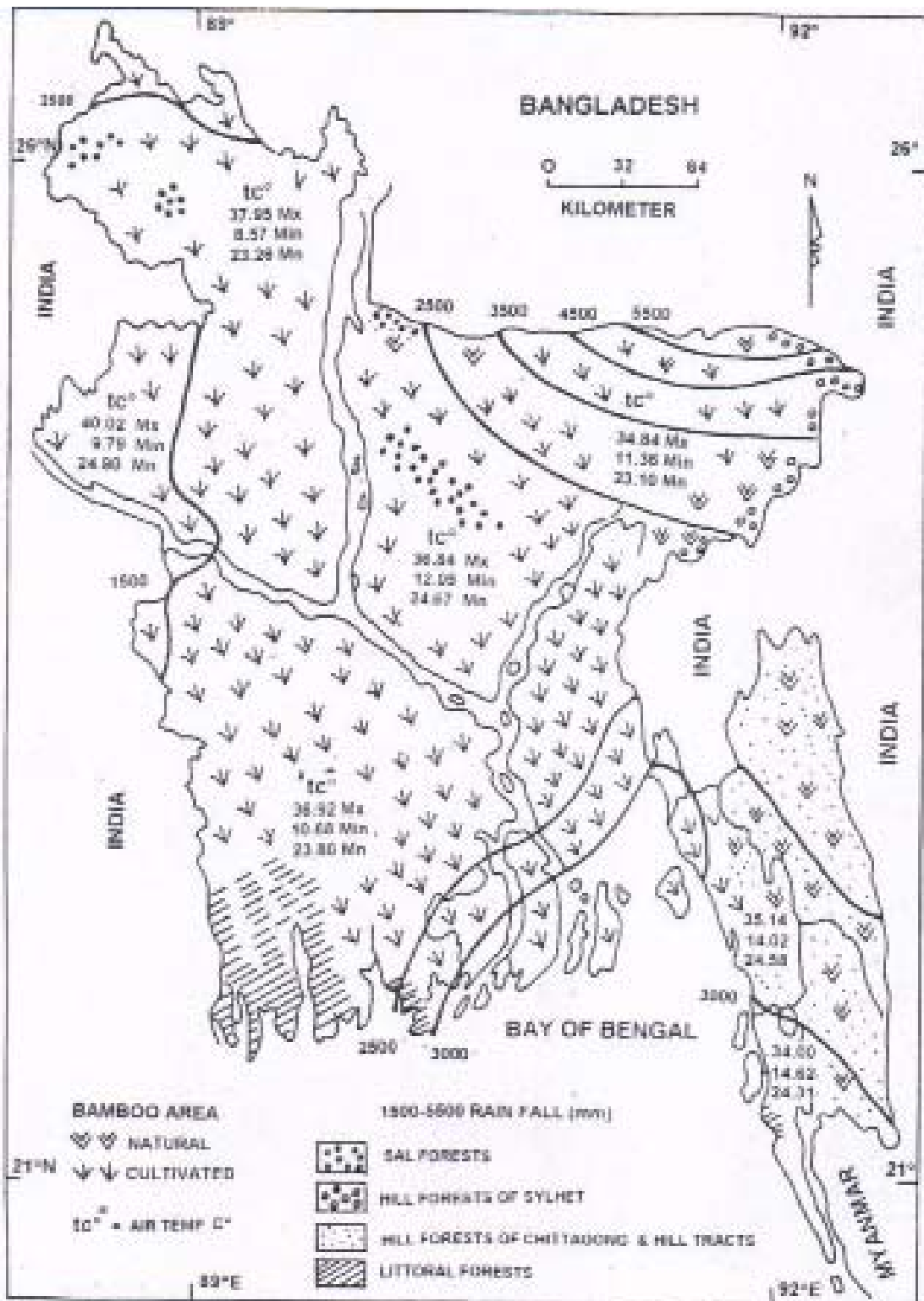
**No authentic information is available.**

### 10.3 Data for National Reporting Table T10

GBRA 2005 Categories	Value of the other than culms removal (Million USD)		
	1990	2000	2005
<b>Plant products / raw material</b>			
1. Food (bamboo shoots)			
2. Raw material for medicine and aromatic products			
3. Raw material for utensils, handicrafts & construction			
4. Ornamental plants			
5. Other plant products			

### 10.4 Comments to National Reporting Table T10

## 11 Map of country's bamboo resources distribution



Source : Banik, R.L. (2000)

## 12 List of main bamboo species in Bangladesh

Sl.No	Species	Uses		
1	<i>Bambusa balcooa</i> Roxb.	Building & scaffolding, constructing bridges, electric poles, ladder, rickshaw hood, bullock cart etc. & shoot also edible.		
2	<i>B. bambos</i> (L) Voss	Construction and household work, Pulp for paper, fodder, medicine etc		
3	<i>B. longispiculata</i> Gamble ex. Brandis	housing, roofing, making toys, mats. screen, wall plates, hats. basket, containers, pulp and paper.		
4	<i>B. nutans</i> Wallich ex Munro	construction of house, containers, agricultural implements, furniture, pulp for paper etc. & leaves widely used as fodder.		
5	<i>B. polymorpha</i> Munro	Construction of house, agricultural implements, pulp for paper, fiber board etc. Young shoots are edible and testy.		
6	<i>B. tulda</i> Roxb.	housing, roofing, making toys, mats. screen, wall plates, hats. basket, containers, pulp and paper.		
7	<i>B. vulgaris</i> Schrad ex wendl.	Used for construction works, props, scaffoldings, bridge making, fencing. boat mats. in cottage industries for making toys and handicrafts, pulp and paper. Young shoot is edible.		
8	<i>Dendrocalamus longispathus</i> (Kurz) Kurz	Culms are commonly used for making baskets, furniture and food grain containers, raw materials for pulp and paper. Young shoots are edible.		
9	<i>Melocanna baccifera</i> (Roxb) Kurz	Used for roofing, thatching and matting in house construction, cottage industries, pulp and paper etc. Young shoots are edible.		
10	<i>Oxitenanthera nigrociliata</i>	Used for fencing		
11	<i>Schizostachyum dulloa</i> (Gamble) Majumder.	Used for umbrella stick, and making mats, baskets, and novelty items, containers etc.		

There are 9 genera and more than 33 species of bamboo in Bangladesh, out of which 7 are occurring naturally in the forest areas and about 26 species have been cultivated in the plain land ( Banik 2000).

**List of the main pest species :**

Boa (1987) published a provisional list of fungal diseases of bamboo. The pathogens are:  
*Dilozythiella bambusina* causes leaf- spot disease.

*Puccinia* sps. causes rust disease in leaves and sheaths of some bamboo species.

*Ustilago shiraiana*, a smut fungus, attacks branches of *Bambusa* sps.

*Sarocladium oryzae* causes serious die-back and blight disease in *Bambusa balcooa*, *B. tulda* and *B. vulgaris*

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