



Forestry Department

Food and Agriculture Organization of the United Nations



International Network for Bamboo and Rattan (INBAR)

GLOBAL FOREST RESOURCES
ASSESSMENT 2005

INDIA

COUNTRY REPORT
ON
BAMBOO RESOURCES

NEW DELHI, MAY 2005

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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) 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 e-mail the Bamboo Thematic Report directly to the focal point at INBAR (mlobovikov@inbar.int) with the copy to FAO (kailash.govil@fao.org) as a part of GFRA.

General information

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Date of submission of 1st draft:	November 18, 2004
Date of submission of 2nd draft	March 01, 2005, April 2005
Date of submission of final report	April 30, 2005

1 Table T1 – Extent of Bamboo Forests

1.1 GBRA 2005 Categories and definitions

Category	Definition
Bamboo on forest land	Bamboo on lands defined as "Forest" in FRA 2005.

1.2 National Data on Bamboo Resources

1.2.1 Data sources

The Forest Survey of India (FSI) is a Government of India organization under the Ministry of Environment and Forests. Since 1965 it has been carrying out regular assessment of forest resources. It also collects data on bamboo distribution in the regular inventory survey. The inventory work has so far been done for 25 states and union territories (prior to subsequent reorganization of states) covering the entire range of forest types. In some inventory areas where the bamboo was predominant, the sampling designs for bamboo stratum were slightly modified. Using remote sensing (LISS –III) data, FSI assesses the forest cover of the country. Within forest cover area, it may be possible through digital image processing to identify pure bamboo patches. However, for estimation of forest areas, which do not have pure bamboo patches but may have mixed bamboo crop, a field survey will have to be conducted. FSI methodology for estimating such areas can be adopted.

References	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Varmah, J.C. and K.N. Bahadur: Country report and status of research in bamboos in India. Ind. For. Rec. (New Series) vol.6 p28	H	Extent	1980	
Sharma, Y.M.L. Production and utilisation of bamboos and related species in the South -Asian region. Ind. For. 114 (10): 603-609	M	Extent	1987	
Tewari, D.N.: A monograph on bamboo.	H	Extent	1992	
National data base of bamboos (India). ICFRE/INBAR/95/1	M	Extent	1995	
Bambbos in India and database. ICFRE	M	Extent	1999	
National Mission on Bamboo Technology and Trade Development, Planning Commission, Govt. of India	H	Extent	2003	
Kishwan, J., Mohinder, P., Dasgupta, S., and Uma Devi, B.V., Bamboo resources in India. 7 th World Bamboo Congress, New Delhi. Feb 27th to Mar. 4th 2004	M	Extent	2004	

1.2.2 Classification and definitions

National class	Definition
Bamboo bearing forest area	Bamboos found in forest area which have been recorded as 'forest' in government records. It corresponds to the definition of Forest land of FRA 2005.
Bamboo area outside forests	Bamboos found in areas other than forests. It corresponds to the definition of bamboo on other land of FRA 2005.

1.2.3 Original data

1.3 Data for National Reporting Table T1

GBRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Bamboo on forest land	8957	9109	9607
Monopodial bamboo area	2955	3006	3170
Sympodial bamboo area	6002	6103	6437
TOTAL	8957	9109	9607

1.4 Comments to National Reporting Table T1

Including information on the minimum area on which information is collected

- 2 There is no regular time series data on bamboo inventory. However, based on publications, the projections for the year 2005 have been made.

Table T2 – Ownership of Bamboo Forests

2.1 GBRA 2005 Categories and definitions

Categories	Definitions
Private ownership	Same as FRA: Land owned by individuals, families, private co-operatives, corporations, industries, religious and educational institutions, pension or investment funds, and other private institutions.
Public ownership	Same as FRA: Land owned by the state (national, state and regional governments) or government-owned institutions or corporations or other public bodies including cities, municipalities, villages and communities.
Other ownership	Same as FRA: Land that is not classified either as “Public ownership” or as “Private ownership”.

2.2 National Data on Bamboo Resources

2.2.1 Data sources

The ‘State of Forest Report’ contains information on forest area under three legal categories of forests i.e. reserved forests, protected forests, and un-classed forests. The first two categories are owned by government and public property; however the ownership of the third category is not clear.

References	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
National data base of Bamboo (India), 1995, ICFRE/INBAR/95/1	H	Extent	1995	
Bamboos in India and database, ICFRE	H	Extent	1999	
Forests and Wildlife Statistics, India 2004, Ministry of Environment and Forests, Government of India	H	Extent	2004	

2.2.2 Classification and definitions

National class (Bamboo)	Definition
Reserved forests	Notified as ‘reserved forest’ under Indian Forest Act, 1927 (IFA,1927)
Protected forests	Notified as ‘protected forest’ under Indian Forest Act, 1927
Un-classed forests	Recorded as ‘forests’ in land records but not notified in IFA,1927

2.2.3 Original data

2.3 Data for National Reporting Table T2

GBRA 2005 Categories	Area (1000 ha)	
	1990	2000
Private ownership	1754	1754
Public ownership	8957	9109
Other ownership	NA	NA
Total	10711	10863

2.4 Comments to National Reporting Table T2

3 Table T3 – Characteristics of Bamboo Forests

3.1 GBRA 2005 Categories and definitions

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

3.2 National data on Bamboo in Forests

3.2.1 Data sources

References	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
National Wildlife Database, Wildlife Institute of India, www.wii.gov.in/nwdc/paststatistics.htm	H	Extent	1999-2000	
Bamboos in India and database, ICFRE	H	Extent	1999	

3.2.2 Classification and definitions: As GBRA - 2005

3.2.3 Original data

3.3 Data for National Reporting Table T3

GBRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Natural bamboo forests	7844	7996	8434
Plantations	2867	2867	2927
TOTAL	10711	10863	11361

3.4 Comments to National Reporting Table T3

4 Table T4 – Bamboo Growing Stock

4.1 GBRA 2005 Categories and definitions

Category	Definition
Bamboo growing stock	Weight (tones) of all bamboo forest more than X cm in diameter at breast height.
Commercial growing stock of bamboos	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 (tones) of the most common bamboo species.

4.2 National data on Bamboo Resources

4.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Rai, S. N. and Chauhan, K. V. S., Distribution and growing stock of bamboos in India. Ind. For. 123 (2): 89-98	H	Million tones	1998	

4.2.2 Classification and definitions

Category	Definition
Bamboo growing stock	Fresh weight of total culms growing in a particular area
Commercial growing stock of bamboo	Weight of total culms available for harvesting per year

4.2.3 Original data

4.3 Data for National Reporting Table T4

FRA 2005 Categories	Volume (million tones)					
	Bamboo on forest land			Bamboo on other land		
	1990	2000	2005	1990	2000	2005
Bamboo growing stock including monopodial bamboo	96.16	97.8	103.1	18.83	18.83	18.83
Commercial bamboo growing stock including monopodial bamboo	13.25	13.48	14.21	2.56	2.56	2.56

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 tone of weight

4.4 Comments to National Reporting Table T4

5 Table T5 – Bamboo Biomass stock

5.1 GBRA 2005 Categories and definitions

Category	Definition
Above-ground biomass of bamboos	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 2 mm 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 to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Shanmughavel, P and Francis, K. Biomass and nutrient cycling in bamboo (<i>Bambusa bambos</i>) plantation of tropical areas. Biol. Fer. Soil. 23: 431-434	H	Tones oven dry weight	1996	
Tripathi, S. K. and Singh, K. P. Culm recruitment, dry matter dynamics and carbon flux in recently harvested and mature bamboos in Indian dry tropics. Ecol. Res. 11: 149-164	H	Tones oven dry weight	1996	
Singh, A.N. and Singh, J. S. Biomass, net primary productivity and impact of bamboo plantation on soil redevelopment in a dry tropical region. For. Eco. Mgt. 119: 195-207	H	Tones oven dry weight	1999	
Shanmughavel, P and Francis, K. Physiology of bamboo. Scientific publisher Jodhpur (India), p-154	H	Tones oven dry weight	2001	
Singh, Pradeep. Studies on Nutrient dynamics and Biomass of <i>Dendrocalamus strictus</i> , (Nees.). Ph. D. Thesis, CSJM University, Kanpur, India	H	Tones oven dry weight	2002	

5.2.2 Classification and definitions

National class	Definition
Above-ground biomass of bamboo	Same as followed in GBRA 2005
Below-ground biomass of bamboo	Same as followed in GBRA 2005

Note: If different national data sources use different classes and definitions, a table such as above is needed for each relevant data source.

5.2.3 Original data

5.3 Data for National Reporting Table T5

Thresholds used by the country are the following:

While estimating the above ground biomass the average ratio (0.55) of biomass and growing stock was used.

Categories	Unit	Bamboo Biomass (million metric ton dry weight)		
		1990	2000	2001
Above ground growing Stock	Million MT	114.99	116.63	121.93
(Culm) BM/GS ratio	0.55	0.55	0.55	0.55
(Culm) Above ground biomass	MMT	63.2	64.14	67.06

The growing stock figures in National Reporting Table (T04) are simply culm growing stock. Therefore a suitable Biomass Expansion Factors (BEF) is necessary to calculate the total above ground biomass. For this purpose, a BEF (2.33) was derived using formula $BEF = \text{Exp} (1.912 - 0.344 \times \ln(\text{GS/ha}))$ given by Schroeder (Brown and Schroeder, 1999)

Item	Unit	Bamboo biomass (million metric tones dry weight)		
		1990	2000	2005
(Culm) Above ground biomass	Million MT	63.23	64.14	67.06
BEF	02.99	02.99	02.99	0 2.99
Total above ground biomass		189.05	191.77	200.50

The "Total Below Ground (BG) biomass has been calculated using the ratio of BG to AG derived from a recent study "Assessment of Major Pools and Flexes of Carbon in Indian Forests" (Chhabra and Dadhwal, 2004).

Categories	Biomass in million tones		
	1990	2000	2005
Above ground biomass	189.05	191.77	200.50
BG/AG Ratio	0.265	0.265	0.265
Below ground biomass	50.09	50.81	51.328

Reclassification in GBRA 2005 categories

GBRA 2005 Categories	Bamboo Biomass (million metric ton dry weight)		
	1990	2000	2005
Above-ground biomass of bamboo	189.05	191.77	200.50
Below-ground biomass of bamboo	50.09	50.81	51.32
TOTAL	239.14	242.58	251.82

5.4 Comments to National Reporting Table T5

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
Naithani, H.B. Taxonomic studies of Indian bamboos. Ph. D thesis	H	Number	1993	
Seethalakshmi, K.K. and Kumar, M.M.S. Bamboos of India, a compendium, KFRI/INBAR	H	Number	1998	
Rawat, J.K. and Khanduri D. C., National Report on the State of Bamboo and Rattans in India.	H	Number	1999	
Singhal, R. M. and Gangopadhyay, P. B. Bamboos in India and data base. ICFRE, Dehradun	H	Number	1999	

6.2.2 Classification and definitions

6.3 Data for National Reporting Table T6

GBRA 2005 Categories	Number of species (Year 2000)
Native bamboo species	119 (exact status yet to be explored)
Introduced bamboo species	25
Critically endangered bamboo species	
Endangered bamboo species	
Vulnerable bamboo species	

6.4 Comments to National Reporting Table T6

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 (wood-fuel).
Wood-fuel 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
Tewari, D.N.: A monograph on bamboo.	H	1000 tones	1992	
National Mission on Bamboo Technology and Trade Development; Planning Commission, Government of India	H	1000 tones	2003	
CBTC of UNIDO, Guwahati	H	1000 tones	2002	

7.2.2 Classification and definitions

7.2.3 Original data

7.3 Data for National Reporting Table T7

GBRA2005	Bamboo removal (million ton)		
	1990	2000	2005
Bamboo wood removal			13.470
Bamboo wood-fuel removal			11.45
Total			14.615

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 (wood-fuel).
Wood-fuel bamboo removal	The bamboo wood removed for energy production purposes, regardless of 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
National Mission on Bamboo Technology and Trade Development; Planning Commission, Government of India	H	1000 US\$	2003	
CBTC of UNIDO, Guwahati	H	1000 US\$	2002	

8.2.2 Classification and definitions

Note: If different national data sources use different classes and definitions, a table such as above is needed for each relevant data source.

3 Original data

8.3 Data for National Reporting Table T8

GBRA2005	Value (million USD)		
	1990	2000	2005
Bamboo wood removal			408.51
Bamboo wood fuel removal			NA
Total			408.51

8.4 Comments to National Reporting Table T8

9 Table 9 – Non-Wood Bamboo Product Removal

9.1 GBRA2005 Categories and Definitions

Category
Plant products / raw material
Food
Raw material for medicine and aromatic products
Raw material for utensils, handicrafts & construction
Ornamental plants
Other plant products
Animal products / raw material
Living animals
Other edible animal products
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
National Mission on Bamboo Technology and Trade Development; Planning Commission, Government of India	H	M. tones	2003	
CBTC of UNIDO, Guwahati	H	M. tones	2002	

9.2.2 Classification and definitions

9.2.3 Original data

9.3 Data for National Reporting Table T9

FRA 2005 Categories	Scale factor	Unit	NWFP removal		
			1990	2000	2005
<u>Plant products / raw material</u>					
1. Food (bamboo shoots)		M. tones			0.0082
2. Raw material for medicine and aromatic products					
3. Raw material for utensils, handicrafts & construction					05.95
4. Ornamental plants					
5. Other plant products					04.47
<u>Animal products / raw material (if any)</u>	NA				
1. Living animals					
2. Other edible animal products					
3. Other non-edible animal products					

9.4 Comments to National Reporting Table T9

10 Table T10- Value of Non Wood Bamboo Product

10.1 GBRA 2005 Categories and Definitions

Value of bamboo wood removal	Value of the bamboo wood removed for production of goods and services other than energy production (wood fuel).
Value of wood fuel bamboo removal.	Value of the bamboo wood removed for energy production purposes, regardless of whether for industrial, commercial or domestic use.

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
National Mission on Bamboo Technology and Trade Development; Planning Commission, Government of India	H	1000 USD	2003	
CBTC of UNIDO, Guwahati	H	1000 USD	2002	

10.2.2 Classification and definitions

10.2.3 Original data

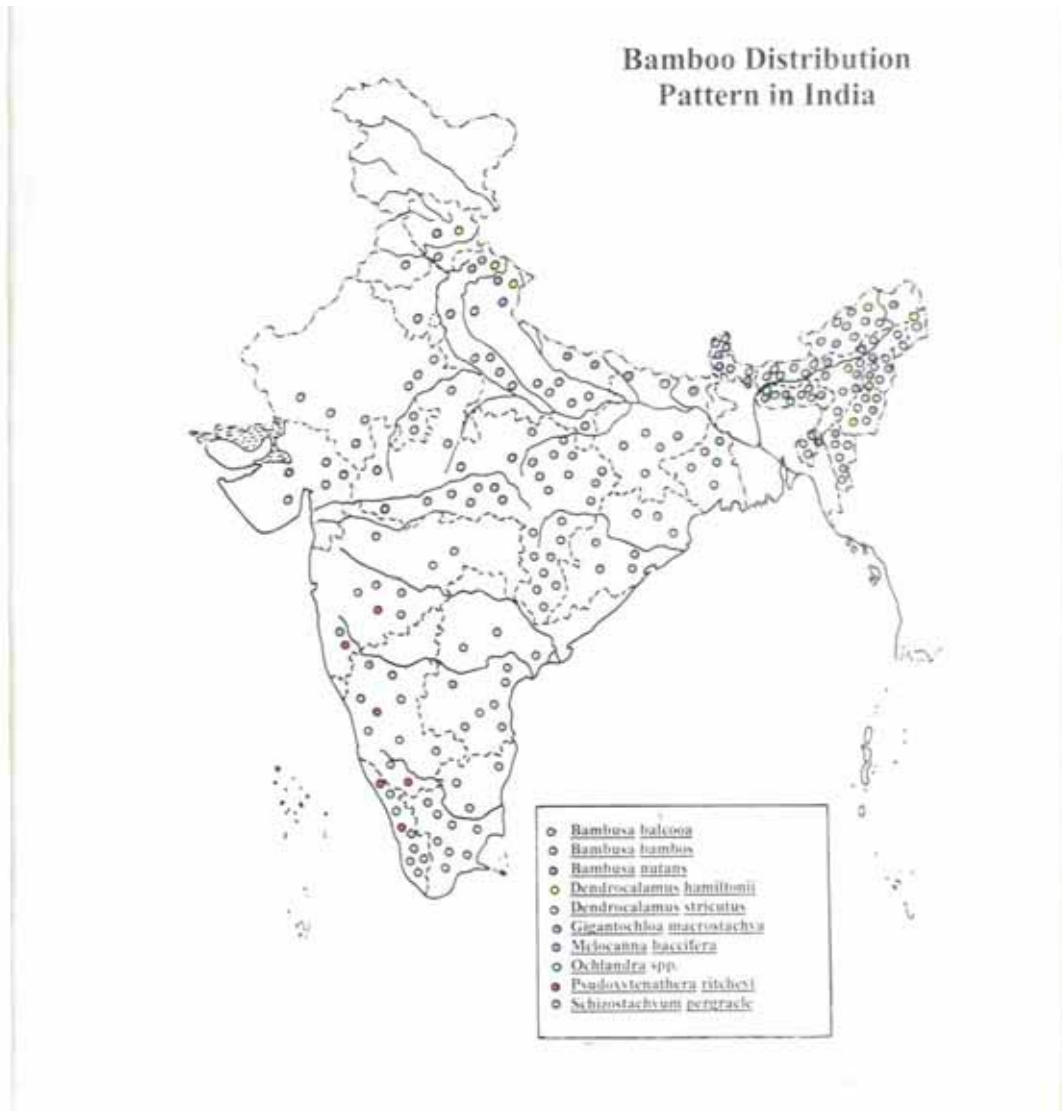
10.3 Data for National Reporting Table T10

GBRA 2005 Categories	Value of the other than culms removal (Million USD)		
	1990	2000	2005
Plant products / raw material			0.960
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			12.880
			13.840

10.4 Comments to National Reporting Table T10

11 Map of country's bamboo resources distribution

Please attach a map of bamboo distribution in the country with explanatory notes



12 List of bamboo species in the country

Please attach list of the main bamboo species in the country

S. NO.	Name of bamboo	Description	Distribution
1.	<i>Ampelocalamus patellaris</i> (Gamble) Stapleton, <i>Dendrocalamus patellari</i> Gamble, <i>Chimonobambusa jainiana</i> Das & Pal	A rather soft, evergreen, caespitose bamboo. <i>Culms</i> 7-10 m tall, 2.5-3.8 cm in diameter.	Nanital in Uttar Pradesh, Assam, North Bengal, Sikkim and Bhutan.
2.	<i>Arundinaria simonii</i> (Carr.) A. & C. Riviere <i>Pleioblastus simonii</i> (Carr.) Nakai	Erect bamboo with long creeping rhizomes. <i>Culms</i> generally monopodial, upto 6m tall, 2.5 cm in diameter.	Arunanchal Pradesh, India/China, Japan.
3.	<i>Arundinaria gracilis</i> Caespitose	Culm ca 4-5 m in height, 2cm in diameter, green at first, turns yellow with age.	Arunachal Pradesh, Sikkim, West Bengal.
4.	<i>Arundinaria racemosa</i> Munro	A small bamboo. Rhizome subterranean, scarcely 5 mm thick. <i>Culms</i> erect upto 1.5-m tall, 1 cm in diameter.	Endemic to North Bengal and Sikkim.
5.	<i>Bambusa affinis</i>	A low, tufted, shrubby bamboo. Culm 5-7 m high, 2.5-5 cm in diameter.	Tripura.
6.	<i>Bambusa atra</i> Lindl.	A tufted reed like bamboo. <i>Culms</i> upto 8 m tall, 2-4cm in diameter.	Native of Moluccas and New Guinea and Tenasserim coasts Rutland Island (Andamans), India Cultivated at Indian Botanical Garden, Kolkata.
7.	<i>Bambusa lineata</i>		Exclusive specimen of Andaman Islands
8.	<i>Bambusa rumphiana</i>	A tufted reed-like bamboo. <i>Culms</i> 5-8 m tall, 3-4 cm diameter near base; green or dark-green, or yellowish.	Native of Moluccas and New Guinea; elsewhere planted. Plants received from Bogor to the Botanic gardens at Kolkata.
9.	<i>Bambusa auriculata</i> Kurz	An evergreen, tufted bamboo. <i>Culms</i> 12-16m tall, 5-7 cm in diameter.	Myanmar. Cultivated at Indian Botanical Garden, Kolkata and Forest Research Institute, Dehradun
10.	<i>Bambusa balcooa</i> Roxb.	A tall caespitose bamboo. <i>Culms</i> 12-20 m high, 8-15 cm in diameter, very thick	North-east India and plains of Uttar Pradesh, Bihar, West Bengal/Bangladesh.

S. NO.	Name of bamboo	Description	Distribution
		walled.	
11.	<i>Bambusa bambos</i> (Linn.) Voss <i>Bambusa arundinacea</i> (Retz.) Willd.	A very densely tufted bamboo, producing large dense clumps. <i>Culms</i> strong, hollow upto 30 m tall, 15-18 cm in diameter, branches with thorns.	Throughout India, Bangladesh, Myanmar, Sri Lanka, and Malaysia.
12.	<i>Bambusa burmanica</i> Gamble	A caespitose bamboo. <i>Culms</i> 10-20m high, 7-10cm in diameter, nodes with white rings.	Native of Myanmar. Cultivated in Forest Research Institute, Dehradun and Indian Botanical Garden, Kolkata.
13.	<i>Bambusa cacharensis</i> Majumdar	A tall bamboo. <i>Culms</i> 20-21 m tall, 5-10 cm in diameter.	Endemic to Cachar Hills, Assam, India.
14.	<i>Bambusa copelandii</i>	A large, elegant, tufted bamboo. <i>Culms</i> upto 20 m tall, 16-19 cm in diameter.	It is so far known only from under cultivation in Myanmar and Indian Botanical Garden, Kolkata.
15.	<i>Bambusa griffithiana</i> Munro.	A sub-scandent, soft bamboo. <i>Culms</i> slender, hollow, fistulose	Manipur in India. Myanmar.
16.	<i>Bambusa jaintiana</i> Majumdar	This species is allied to <i>Bambusa tulda</i> but differs in having glabrous culm sheaths.	Endemic to Meghalaya and Manipur, India.
17.	<i>Bambusa khasiana</i> Munro	A graceful bamboo. <i>Culms</i> 10-13m tall, 2.5-4 cm in diameter, arising singly from a creeping rhizome.	Endemic to Meghalaya and Manipur, India.
18.	<i>Bambusa kingiana</i> Gamble	A large bamboo with 20-23 m long and up to 10 cm diameter <i>Culms</i> .	Manipur
19.	<i>Bambusa longispiculata</i> Gamble ex Brandis	<i>Culms</i> 10-15 m tall, 7-10 cm in diameter, green.	North-east India, Bangladesh, Myanmar.
20.	<i>Bambusa mastersii</i> Munro	A small reed like, climbing bamboo. <i>Culms</i> not known.	A very rare species so far known only from Assam.
21.	<i>Bambusa multiplex</i> (Lour.) Raeusch. Ex Schult. <i>Bambusa nana</i> Roxb.	A thickly growing, caespitose bamboo. <i>Culms</i> usually 2-4 m high, 1.5-2.5 cm in diameter.	Native of China and Japan. Commonly cultivated in India

S. NO.	Name of bamboo	Description	Distribution
22.	<i>Bambusa nutans</i> Wall. Ex Munro	A medium sized graceful bamboo. <i>Culms</i> 6-15 m high, 5-10 cm in diameter, loosely clumped.	Commonly cultivated in North-west India, Bihar, Orissa, West Bengal. Its natural distribution is Yamuna eastwards to Arunachal Pradesh.
23.	<i>Bambusa oliveriana</i> Gamble	A moderate sized bamboo. <i>Culms</i> 13-15 m high, 2.5-5 cm in diameter, wall thick.	Native of Myanmar. Cultivated in Indian Botanical Garden, Kolkata and Forest Research Institute, Dehradun.
24.	<i>Bambusa polymorpha</i> Munro	A caespitose bamboo. <i>Culms</i> 13-20 m high, 5-8 cm in diameter, smooth, covered with white powder.	North-east India, Orissa, Bhutan, Myanmar.
25.	<i>Bambusa pallida</i>	Thick clump, nodes not prominent, culms upto 20m, culm sheath is 18-30 cm long, triangular & smooth	Natural to North-east
26.	<i>Bambusa pseudopallida</i> Munro	A large handsome, densely tufted bamboo. <i>Culms</i> 16-25 m high, 8-15 cm in diameter, gray to grayish-green.	Native of Myanmar. Cultivated in many part of India.
27.	<i>Bambusa pseudopallida</i> Majumdar	This species is allied to <i>B. pallida</i> having shrubby habit. Culm sheaths blade longer than the sheath but auricle pointed, one projecting upward and the other downwards.	Endemic to Assam and Meghalaya, India.
28.	<i>Bambusa teres</i> Buch.Ham. ex Munro	A large tufted bamboo. <i>Culms</i> upto 20 m high, 8 cm in diameter.	North-east India. Bangladesh.
29.	<i>Bambusa tulda</i> Roxb.	An evergreen or deciduous, tufted bamboo. <i>Culms</i> 7-20 cm high, 5-10 cm in diameter, sometimes streaked with yellow.	North-east India.
30.	<i>Bambusa vulgaris</i> Schrad. ex Wendl.	A moderate sized bamboo, with distant culms. <i>Culms</i> strong,	It is known only in cultivation in many parts in the country.

S. NO.	Name of bamboo	Description	Distribution
		green, 15-20 m tall, 4-10 cm in diameter.	Also planted at Forest Research Institute, Dehradun.
31.	<i>Bambusa vulgaris</i> var. <i>striata</i> (Lodd. ex Lindl.) Gamble	This variety differs from <i>B. Vulgaris</i> in having clear pale-yellow culms with few narrow dark green vertical streaks or rarely light green with pale-yellow streaks.	Commonly cultivated in the gardens.
32.	<i>Bambusa vulgaris</i> forma <i>waminii</i> (Brandis) Wen	This form differs from typical <i>B.vulgaris</i> by its internodes 10-15 cm long, rarely longer, at base much swollen (pitcher shaped), the swollen part 10-20 cm in diameter.	Introduced in the gardens.
33.	<i>Chimonobambusa callosa</i> (Munro) Nakai <i>Arundinaria callosa</i> Munro	A shrubby bamboo. <i>Culms</i> erect, 4-7m tall, 1.2-2.5 cm in diameter, grayish-green; nodes armed with a circle of conical spines.	North-east India. Bhutan.
34.	<i>Chimonobambusa densifolia</i>	Reed like, with single culms at intervals, non clump – forming; rhizome long and creeping, 0.7 cm in diameter, joints 1..2 cm long, Culm 4.5 m high.	Northwest India, Uttar Pradesh (Garhwal and Kumaon Hills).
35.	<i>Dendrocalamus asper</i> (Schult.f.) Back. ex Heyne	Densely tufted bamboo. <i>Culms</i> 20-30 m tall, 8-20 cm in diameter.	Its origin is not certain. Planted through tropical Asia. In India it is planted in Madhya Pradesh.
36.	<i>Dendrocalamus brandisii</i> (Munro) Kurz	A large evergreen tufted bamboo. <i>Culms</i> ashy-gray to greenish-gray, 19-33 m high, 13-20 cm in diameter.	Manipur and Andaman Island, India, introduced in Karnataka. Myanmar.
37.	<i>Dendrocalamus calostachys</i> (Kurz) Kurz	A large tufted bamboo. <i>Culms</i> usually 20-25 m high.	Meghalaya and Nagaland, India. Myanmar.
38.	<i>Dendrocalamus collettianus</i>	<i>Culms</i> , culm-sheaths and leaves unknown. Spikelets 1-15 cm long, white pubescent soft.	Native of Myanmar. Cultivated in Indian Botanical Gardens, Kolkata.

S. NO.	Name of bamboo	Description	Distribution
39.	<i>Dendrocalamus giganteus</i> Munro	The tallest bamboo with close culms. <i>Clumps</i> 25-30 m tall, 20-30 cm in diameter, usually 2-2.5 cm thick.	Native of Myanmar. Commonly cultivated in India.
40.	<i>Dendrocalamus hookeri</i> Munro	A tufted bamboo. <i>Culms</i> 15-20 m tall, 10-15 cm in diameter.	North-east India.
41.	<i>Dendrocalamus hamiltonii</i> Nees et Arn. ex Munro	A large caespitose bamboo. <i>Culms</i> 10-20 m high, 10-16 cm in diameter, thin walled.	Throughout North-east India. Myanmar, Bangladesh.
42.	<i>Dendrocalamus longispathus</i> kurz	A handsome tufted bamboo. <i>Culms</i> 20 m tall, upto 10-16 cm in diameter.	North-east India. Myanmar, Bangladesh.
43.	<i>Dendrocalamus membranaceus</i> Munro	A loose clump forming bamboo. <i>Culms</i> 20-25 m high, 6-10 cm in diameter.	A native of Myanmar. Cultivated at Forest Research Institute, Dehradun.
44.	<i>Dendrocalamus parishii</i> Munro	Culm and culm sheath not known.	Endemic to Himachal Pradesh, India.
45.	<i>Dendrocalamus patellaris</i>	Evergreen, caespitose. <i>Culms</i> 7-10 m tall, 2.54 cm in diameter.	Uttar Pradesh (Kumao), West Bengal (North Bengal), Sikkim, Nagaland and Arunachal Pradesh.
46.	<i>Dendrocalamus sahnii</i> Naithani	A caespitose bamboo. <i>Culm</i> 3 m tall, 2-3 cm in diameter.	Endemic to Arunachal Pradesh, India.
47.	<i>Dendrocalamus somdevai</i> Naithani	A caespitose bamboo. <i>Culms</i> 12-20 m high, 6-7 cm in diameter.	Endemic to Uttaranchal, India.
48.	<i>Dendrocalamus sikkimensis</i> Gamble	A large bamboo with caespitose culms. <i>Culms</i> 17-20 m tall, 12-18 cm in diameter. <i>Culms</i> sheaths golden-brown.	North-east India, Sikkim.
49.	<i>Dendrocalamus strictus</i> (Roxb.) Nees	A deciduous, densely tufted bamboo. <i>Culms</i> 8-16 m tall, 2.5-8 cm in diameter, thick walled.	Throughout India except North-east. Bangladesh, Myanmar.
50.	<i>Dendrocalamus strictus</i> var. <i>sericeus</i> (Munro) Gamble	Similar to <i>D. strictus</i> differs in having silky pubescent spikelets.	Endemic to Chota Nagpur, Bihar, India.

S. NO.	Name of bamboo	Description	Distribution
51.	<i>Dinochloa andamanica</i> Kurz	An evergreen lofty climbing bamboo. <i>Culms</i> 90 m long.	Endemic to Andaman Islands, India.
52.	<i>Dinochloa maclellandii</i> (Munro) Kurz	An evergreen lofty climbing bamboo. <i>Culms</i> 30 m long.	Native of Burma. Cultivated at Indian Botanical Garden, Kolkata.
53.	<i>Dinochloa nicobariana</i> Majumdar	A climbing bamboo. <i>Culms</i> green.	Endemic to Nicobar Islands, India.
54.	<i>Drepanostachyum falcatum</i> Nees	Shrubby <i>Culm</i> annual ca 4.5 cm high, ca 1.0 cm in diameter.	North-West India – Himachal Pradesh (Shimla); Uttar Pradesh (Kumaon and Garhwal Hills)
55.	<i>Drepanostachyum hookranium</i>	Caespitose. Culm ca 6 m high, striate, slender, glaucous green white scurf	North-East India – Arunachal Pradesh, Meghalaya, Sikkim, West Bengal.
56.	<i>Drepanostachyum intermedium</i> Munro	A thin caespitose shrub. Culm ca 4 m high, ca 1.2 cm in diameter.	North-East India – Arunachal Pradesh, Meghalaya, Mizoram, Sikkim, West Bengal.
57.	<i>Drepanostachyum jainianum</i>	A handsome caespitose bamboo. Culm ca 6 m in height, ca 2.0 cm in diameter.	North-East India – Sikkim, West Bengal (Darjeeling).
58.	<i>Drepanostachyum khasianum</i> Munro	A slender bushy bamboo. Culm ca 4 m long, 1.3 cm in diameter.	North-East India – Manipur, Meghalaya, Sikkim, West Bengal.
59.	<i>Drepanostachyum kurzii</i> Gamble	A low level bushy bamboo. Culm ca 1.2 cm in diameter, thin, smooth; internode ca 18 cm long.	North-East India – Meghalaya (Khasi Hills), Manipur, Nagaland.
60.	<i>Drepanostachyum polystachyum</i>	Shrubby. Culm ca 4 cm high, soft; branchlets many, fasciculate.	North East India – Meghalaya (Khasi Hills); Sikkim.
61.	<i>Drepanostachyum suberectum</i> Munro	A graceful shrubby bamboo, wiry, erect, in thick clumps. Culm ca 4m high, 0.7 m in diameter.	North-East India – Arunachal Pradesh, Meghalaya (Khasia and Jaintia hills), Sikkim.
62.	<i>Gigantochloa albociliata</i> (Munro) kurz <i>Oxytenanthera albociliata</i> Munro	A densely tufted bamboo. Culms 6-9 m high, 1.5-2.5 cm in diameter, grayish-green with white stripes.	Native of Myanmar. Widely cultivated in India. Also planted at Forest Research Institute, Dehradun.
63.	<i>Gigantochloa apus</i> (Bl.ex Schult.f.) Kurz <i>Gigantochloa takserah</i> Camus	Strongly tufted bamboo. <i>Culms</i> green or yellow, hollow, 8-22	North-east India. Myanmar, Indonesia.

S. NO.	Name of bamboo	Description	Distribution
		m tall, 4-13 cm in diameter.	
64.	<i>Gigantochloa atrovioleacea</i> Widjaja	Clumps loosely tufted. <i>Culm</i> 8-12 m tall, 6-8 cm in diameter, purplish.	Native of Java. Cultivated at Forest Research Institute, Dehradun.
65.	<i>Gigantochloa atter</i> (Hassk.) Kurz	Large tufted bamboo. <i>Culms</i> upto 22 m high, 5-10 cm in diameter.	Native of Malaya. Cultivated at Indian Botanical Garden, Kolkata.
66.	<i>Gigantochloa macrostachya</i> Kurz	A large evergreen bamboo. <i>Culms</i> 10- 16 m tall, 6-10 cm in diameter.	North-east India.
67.	<i>Gigantochloa pseudoarundinacea</i> (steud.) Widjaja	A large evergreen bamboo. <i>Culms</i> 10-30 m high, 7-13 cm in diameter, green to yellowish green, thin walled.	Native of Java. Cultivated at Indian Botanical Garden Kolkata.
68.	<i>Gigantochloa rostrata</i> Wong <i>Oxytenanthera nigrociliata</i> Munro	Tufted dark green bamboo. <i>Culm</i> 5-8 m tall, 2.5-5 cm in diameter, thick walled, basal portion with yellowish stripes.	North-East India, Orissa, Bihar, Madhya Pradesh, Karnataka, Maharashtra, Malaya.
69.	<i>Himalayacalamus falconeri</i>	Shrubby, slender. <i>Culm</i> ca 6 m in height and 2 cm in diameter.	North-West India – Uttar Pradesh (Garhwal and Kumaon Hills)
70.	<i>Indocalamus floribundus</i>	Erect, shrubby. <i>Culm</i> ca 1.5 m in height, internode ca 9 cm long, covered with hairs, node swollen.	Travancore.
71.	<i>Indocalamus walkeranus</i>	<i>Culm</i> ca 3 cm in diameter, upper part thickly covered with sheaths of fallen leaves.	South India – Tamil Nadu (Palni Hills).
72.	<i>Indocalamus wightianus</i> Nees	A gregarious shrub. <i>Culm</i> ca 3 m in height	South India Tamilnadu (Nilgiris, Tinnavally; Kerala Palghat).
73.	<i>Indocalamus wightianus</i> Var. <i>hispidus</i>	Shrubby, erect. <i>Culm</i> ca 3 m in height. Covered with bulbous based golden hairs.	Tamilnadu (Nilgiris hills)
74.	<i>Melocalamus compactiflorus</i> (kurz) Benth. <i>Dinochloa compactiflora</i> (Kurz) McClure	An arborescent, evergreen, climbing bamboo. <i>Culms</i> 5-8 m	North-East India. Myanmar, Bangladesh.

S. NO.	Name of bamboo	Description	Distribution
		long, 2.5 cm in diameter, solid; climbing over tall trees.	Cultivated at Forest Research Institute, Dehradun.
75.	<i>Melocalamus indicus</i> Majumdar	Evergreen scandent bamboo. <i>Culms</i> 5-10 m long, arching over the tall trees.	Endemic to Assam, India.
76.	<i>Melocanna arundina</i> Parkinson <i>Melocanna humilis</i> kurz	An evergreen bamboo. <i>Culms</i> 3-5 m high, about 2.5 cm in diameter.	Assam, India and Myanmar.
77.	<i>Melocanna baccifera</i> (Roxb.) Kurz <i>Melocanna bambusoides</i> Trin.	An evergreen arborescent bamboo. <i>Culms</i> monopodial, upto 20 m tall, 1.5-5 cm in diameter.	North-east India, Bangladesh, Myanmar.
78.	<i>Neomicrocalamus andropogonifolius</i> (Griff.) Stapleton	<i>Culms</i> semi scandent; small, open, spreading, 12 m long, upto 1 cm in diameter, hollow.	Endemic to Nagaland, India and Bhutan.
79.	<i>Neomicrocalamus clarkei</i>	A shrubby bamboo. <i>Culm</i> 3 m high, solid.	Manipur, Sikkim.
80.	<i>Neomicrocalamus mannii</i> (Gamble) Majumdar <i>Arundinaria mannii</i> Gamble	A slender graceful climbing bamboo. <i>Culms</i> 10 m long, 1.2-2.5 cm in diameter, smooth.	Endemic to Meghalaya and Arunachal Pradesh, India.
81.	<i>Neomicrocalamus prainii</i> (Gamble) Keng.f <i>Arundinaria prainii</i> (Gamble) Gamble	A small, wiry climbing bamboo. <i>Culms</i> upto 10m long, upto 1 cm in diameter, almost solid.	Endemic to Meghalaya and Nagaland, India.
82.	<i>Ochlandra beddomei</i> Gamble	<i>Culms</i> erect, 10-12 m high, 3-4 cm in diameter.	Endemic to Kerala, India.
83.	<i>Ochlandra ebracteata</i> Raizada & Chatterji	An erect, shrubby or arborescent, reed-like, gregarious bamboo. <i>Culms</i> 5 m high, 2-3.5 cm in diameter.	Endemic to Kerala, India.
84.	<i>Ochlandra scriptoria</i> (Dennst.) Fisch.	A gregarious shrubby bamboo. <i>Culms</i> erect, 5 m tall, 2.5 cm in diameter.	Endemic to Western Ghats i.e. Karnataka, Tamil Nadu and Kerala.
85.	<i>Ochlandra setigera</i> Gamble	<i>Culms</i> erect or straggling, 6m tall, 1-2 cm thick.	Endemic to Western Ghats i.e. Kerala and Tamil Nadu.
86.	<i>Ochlandra sivagiriana</i> (Gamble) Camus	Small straggling reed-like bamboo. <i>Culms</i> 5 m high, 2 cm in diameter.	Endemic to Tamil Nadu, India.

S. NO.	Name of bamboo	Description	Distribution
87.	<i>Ochlandra talboti</i> Brandis	Erect, arborescent bamboo. <i>Culms</i> 3-6 m tall, 1.2-2 cm in diameter.	Endemic to Karnataka, India.
88.	<i>Ochlandra travancorica</i> Benth.	Erect, shrubby or arborescent bamboo. <i>Culms</i> 2-6 m tall, 2.5-5 cm in diameter.	Endemic to Tamil Nadu and Kerala, India.
89.	<i>Ochlandra travancorica</i> Var. <i>hirsuta</i> Gamble	Leaves thick, margin more cartilaginous. <i>Spikelets</i> thickly clothed with light brown velvety pubescence, the rest as in <i>O.travancorica</i>	Endemic to Tamil Nadu and Kerala, India.
90.	<i>Ochlandra wightii</i> (Munro) Fischer	An erect shrubby bamboo. <i>Culms</i> 6-7 m tall, 1.5-2 cm in diameter.	Endemic to Tamil Nadu and Kerala, India.
91.	<i>Oxytenanthera abyssinica</i> (A. Rich.) Munro.	A fine distinct looking tufted bamboo. <i>Culms</i> 6-10 m high, 6-10 cm in diameter.	Tropical Africa. Cultivated at Forest Research Institute, Dehra Dun.
92.	<i>Oxytenanthera parvifolia</i> Brandis	A large-sized bamboo with culms upto 7.6 cm in diameter.	Assam and Mizoram.
93.	<i>Pleioblastus simonii</i> (Carr.)	A reed like bamboo with long, creeping rhizome. <i>Culms</i> generally monopodal, 90 cm to 6 m tall, 2-25 mm broad, hollow, green.	Tale Valley, Arunachal Pradesh, at 3000 m elevation.
94.	<i>Pseudotoxytenanthera bourdillonii</i> (Gamble) Naithani <i>Oxytenanthera bourdillonii</i> Gamble	A moderate sized bamboo, open clump forming. <i>Culms</i> 6-9 m tall, 2 cm in diameter.	Endemic to Kerala, India.
95.	<i>Pseudotoxytenanthera monadelpha</i> (Thw.) Alston	A straggling or sub-scandent bamboo. <i>Culms</i> soft, 8 m tall, 1-1.5 cm in diameter.	Tamil Nadu Karnataka and Kerala, India, Sri Lanka.
96.	<i>Pseudotoxytenanthera ritciei</i> (Munro) Naithani	A medium sized bamboo. <i>Culms</i> 3-5 m high, 2.5cm in diameter, nearly solid, covered with deciduous, soft, pale-yellow, vavely tomentose.	Maharashtra, Tamil Nadu, Karnataka and Kerala, India.
97.	<i>Pseudotoxytenanthera stocksii</i> (Munro) Naithani	A medium sized bamboo. <i>Culms</i> upto 9	Karnataka, Maharashtra, Kerala

S. NO.	Name of bamboo	Description	Distribution
		m tall, 2.5 cm in diameter glabrous.	and Goa, India.
98.	<i>Phyllostachys aurea</i> Carr.ex A. & C. River.	Tufted bamboo with creeping rhizome. Culms 2-8 m tall, 2-3 cm in diameter; lower internodes often irregularly shortened and swollen.	Native of China. Cultivated at Forest Research Institute, Dehradun.
99.	<i>Phyllostachys bambusoides</i> Sieb. & Zucc.	Rhizomes monopodial, 10-30 mm thick. Culms 9-22 m high, 10-15 cm in diameter, flattened on one side.	Native of China. Reported from Himachal Pradesh and Sikkim.
100.	<i>Phyllostachys mannii</i> Gamble <i>Phyllostachys assamica</i> Gamble ex Brandis	A caespitose bamboo. Culms 5-6 m tall, 2.5-3 cm in diameter, green or yellow, flattened on inside.	Endemic to Assam Meghalaya and Arunachal Pradesh, India.
101.	<i>Oxytenanthera stocksii</i>	Loosely packed clump, gregarious, erect culm upto 10m, straight at top	Northern Kerala, Karnataka, Maharashtra, India
102.	<i>Phyllostachys nigra</i> (Lodd. ex Lindl.) Munro	Rhizome long creeping. Culms 3-6 m tall, 2-4 cm in diameter, olive green at first, becoming purplish in the second year, ultimately purplish-black.	Native of China. Cultivated at Ward lake, Shillong, Meghalaya.
103.	<i>Pseuedosasa japonica</i> (Sieb. & Zucc.ex Steud.) Makino ex Nakai	A shrubby bamboo. Culms 2-5 m tall, 5-15 mm in diameter, green.	Native of Japan. Cultivated in temperate gardens of India.
104.	<i>Sasa palmate</i> (Marl. Ex Burb.) Camus	A shrubby bamboo. Culms 1-1.5 m tall, 6-8 mm in diameter.	Native of Japan. Cultivated in temperate garden of India.
105.	<i>Schizostachyum arunachalensis</i> Naithani	A semi scandent bamboo with long internodes. Culm 10-15 m tall 3 cm in diameter.	Endemic to Arunachal Pradesh, India.
106.	<i>Schizostachyum beddomei</i> (Fisher) Majumdar <i>Teinostachyum beddomei</i> Fischer	Tall, semi scandent bamboo. Culm 3-6 m high, 2.5-3.7 cm in diameter.	Endemic to Western Ghats.
107.	<i>Schizostachyum brachycladum</i> Kurz	An arborescent bamboo of very peculiar habit. Culms	Native of Malaya. Introduced in Calcutta Botanical

S. NO.	Name of bamboo	Description	Distribution
		10-13 m in height with lateral branches base very short and meager, upto 1 m long.	Garden.
108.	<i>Schizostachyum capitatum</i> (Munro) Majumdar <i>Cephalostachyum capitatum</i> Munro	A shrubby, sub-arborescent bamboo. Culms 4-10m long, 2.5-3 cm in diameter.	North-east India, Sikkim and Bhutan.
109.	<i>Schizostachyum dullooa</i> (Gamble) Majumdar <i>Teinostachyum dullooa</i> Gamble.	Moderate sized to large tufted bamboo, sometimes scandent. Culms 6-9 m tall, 2.5-7.5 cm in diameter.	North-east India, Bhutan, Bangladesh, Myanmar
110.	<i>Schizostachyum falvescens</i> (kurz) Majumdar <i>Cephalostachyum falvescens</i> Kurz	An evergreen tufted, semi-arborescent bamboo. Culms 3-6 m tall, 2.5-3.8 cm in diameter.	Andaman island, India, Myanmar.
111.	<i>Schizostachyum fuchisanum</i> (Gamble)	A medium sized, arborescent, semi-scandent bamboo. Culm 5 m.	Arunachal Pradesh, Manipur, Nagaland and Sikkim.
112.	<i>Schizostachyum griffithii</i> (Munro) Majumdar <i>Teinostachyum griffithii</i> Munro	Straggling or sub-erect bamboo. Culms drooping 7-16 m long, 1.5-2 cm in diameter.	Endemic to North-east India.
113.	<i>Schizostachyum helferi</i> (Munro) Majumdar <i>Teinostachyum helferi</i> (Munro)	Evergreen tufted bamboo, forming large impenetrable thickets. Culms 6-12 m high, 2-4 cm in diameter.	Meghalaya, India, Myanmar.
114.	<i>Schizostachyum kurzii</i> (Munro) Majumdar <i>Bambusa schizostachyoides</i> (Kurz) kurz ex Gamble	An arborescent bamboo. Culms 5-8 m high, 8-10 cm in diameter.	Endemic to Andaman Islands, India.
115.	<i>Schizostachyum latifolium</i> (Munro) Majumdar <i>Cephalostachyum fuchianum</i> Gamble	A medium sized, arborescent, semi-scandent bamboo. Culm 5 m tall.	North-east India, Bhutan.
116.	<i>Schizostachyum mannii</i> Majumdar	Shrubby bamboo.	Endemic to North-east India.
117.	<i>Schizostachyum pallidum</i> (Munro) Majumdar <i>Cephalostachyum pallidum</i> Munro	A shrubby bamboo. Culms not more than 2m tall.	Endemic to North-east India.
118.	<i>Schizostachyum pergracile</i> (Munro) Majumdar <i>Cephalostachyum pergracile</i> Munro	An arborescent tufted bamboo. Culms 10-30m tall, 5-8 cm in diameter.	North-east India, Orissa, Madhya Pradesh, Andhra Pradesh, Myanmar.
119.	<i>Schizostachyum polymorphum</i> (Munro) Majumdar	A large shrubby or semi-arborescent	North-east India, Sikkim, Bhutan,

S. NO.	Name of bamboo	Description	Distribution
	<i>Pseudostachyum polymorphum</i> Munro	bamboo with single culms. Culms 7 m tall, 2 cm in diameter, thin walled.	Myanmar.
120.	<i>Schizostachyum rogersii</i> Brandis	Culm tufted weak, upto 9 m high, 2 cm in diameter.	Endemic to Andaman Islands, India.
121.	<i>Schizostachyum seshagrianum</i> Majumdar	A scandent bamboo with tufted branches. Culms 5-8 m tall, 7-10 cm in diameter, thin walled.	Endemic to Arunachal Pradesh, India.
122.	<i>Sinarundinaria anceps</i> (Mitf.) Chao & Renvoize <i>Arundinaria jaunsarensis</i> Gamble <i>Chimonobambusa jaunsarensis</i> (Gamble) Bahadur & Naithani	A graceful bamboo, with single stem from creeping rhizome. Culms 2-6 m tall, 1.3-2 cm in diameter.	Endemic to Uttar Pradesh Hills.
123.	<i>Sinarundinaria arunachalensis</i> Naithani <i>Chimonocalamus longispiculatus</i> Majumdar	Plant unarmed. Leaves with setaceous apices. Spikelets green, many flowered in terminal panicles.	Endemic to Arunachal Pradesh, India.
124.	<i>Sinarundinaria densifolia</i> (Munro) Chao & Renvoize <i>Arundinaria densifolia</i> Mouro	A small densely gregarious shrubby bamboo. Culms 2-2.5 m tall, upto 1 cm in diameter, thin walled.	Anamalai hills, Kerala. Sri Lanka.
125.	<i>Sinarundinaria elegans</i> (Kurz) Chao & Renvoize <i>Arundinaria elegans</i> kurz	An evergreen, slender tufted bamboo. Culms green, yellow to dark purple, 4-7 m on tall, about 1.5 cm in diameter.	Manipur, Nagaland (India). Myanmar.
126.	<i>Sinarundinaria falcata</i> (Nees) Chao & Renvoize <i>Arundinaria falcata</i> Nees <i>Arundinaria khasiana</i> Munro	A gregarious shrubby bamboo with annual culms from a central rootstock. Culms usually 2-4 m high, 1-2 cm in diameter.	Himalaya from Kashmir to Bhutan and Meghalaya, Mizoram. Myanmar.
127.	<i>Sinarundinaria griffithiana</i> (Munro) Chao & Renvoize <i>Arundinaria griffithiana</i> Munro	An erect gregarious bamboo. Culms 3-10 m tall, olive green, 2.5-5 cm in girth nodes circled with 2 cm long spines.	Eastern Himalaya, Nagaland, Meghalaya and Mizoram. Myanmar.
128.	<i>Sinarundinaria hirsuta</i> (Munro) Chao & Renvoize <i>Arundinaria hirsuta</i> Munro	A shrubby bamboo with single stem from the rhizomes. Culms 1-2.5m tall, 5-7.5 mm in diameter.	Endemic to Meghalaya, India.

S. NO.	Name of bamboo	Description	Distribution
129.	<i>Sinarundinaria hookeriana</i> (Munro) Chao & Renvoize <i>Arundinaria hookeriana</i> Munro	A caespitose bamboo. <i>Culms</i> 5-6 m tall, glaucous green, covered with white scurf when young, 2-4 cm in diameter.	Endemic to Eastern Himalaya.
130.	<i>Sinarundinaria intermedia</i> (Munro) Chao & Renvoize <i>Arundinaria intermedia</i> Munro <i>Arundinaria suberecta</i> Munro	A slender caespitose bamboo. <i>Culms</i> smooth, grayish-green, 3-4 m tall, 1-1.5 cm in diameter.	Endemic to Eastern Himalaya.
131.	<i>Sinarundinaria longispiculata</i> Chao & Renvoize	Rhizome not known. <i>Culms</i> erect, yellowish-valvety under the nodes, bearing thorns on the nodes.	Endemic to Mizoram, India.
132.	<i>Sinarundinaria maling</i> (Gamble) Campbell <i>Arundinaria maling</i> Gamble	An erect shrubby bamboo. Rhizome stout, sub-terrestrial producing single culms at intervals. <i>Culms</i> 3-9 m tall, 2-3 cm in diameter.	Endemic to Darjeeling hills North Bengal and Sikkim.
133.	<i>Sinarundinaria microphylla</i> (Munro) Chao & Renvoize <i>Arundinaria microphylla</i> Munro	A gregarious, low, caespitose shrubby bamboo. <i>Culms</i> 60-120 cm high.	Kerala Hills and Bhutan.
134.	<i>Sinarundinaria naglandiana</i> Naithani	Erect bamboo. <i>Culms</i> caespitose, 3-7 m high, olive-green, 2.5 cm in diameter; node bearing a circle stout short spines.	Endemic to Nagaland, India.
135.	<i>Sinarundinaria pantlingii</i> (Gamble) Campbell <i>Arundinaria pantlingii</i> Gamble	An erect shrubby bamboo. <i>Culms</i> upto 9 m tall, slightly hairy below the nodes, 1.5 cm in diameter.	Endemic to Sikkim and Darjeeling hills, North Bengal.
136.	<i>Sinarundinaria polystachya</i> (Kurz ex Gamble) Chao & Renvoize <i>Arundinaria polystachya</i> Kurz ex Gamble	A small shrubby bamboo. <i>Culms</i> rather soft, 7 m tall, 2 cm in diameter.	Sikkim Darjeeling hills North Bengal and Meghalaya.
137.	<i>Sinarundinaria rolloana</i> (Gamble) Chao & Renvoize <i>Arundinaria rolloana</i> Gamble	A shrubby bamboo with stoloniferous distant culms. <i>Culms</i> 2.5 m tall, 2 cm in diameter.	Endemic to Nagaland, India.
138.	<i>Sinarundinaria walkeriana</i> (Munro) Chao & Renvoize <i>Arundinaria walkeriana</i> Munro		Hills of Kerala and Tamil Nadu. Sri Lanka.

S. NO.	Name of bamboo	Description	Distribution
139.	<i>Sinarundinaria wightiana</i> (Nees) Chao & Renvoize <i>Arundinaria wightiana</i> Nees	An erect gregarious shrubby bamboo. <i>Culms</i> slender, 1.5-3 m tall, dark green, 2 cm in diameter.	Endemics to Nilgiris and Palni hills of South India.
140.	<i>Thamnocalamus aristatus</i> (Gamble) Camus <i>Arundinaria aristata</i> Gamble	A tufted shrubby bamboo. <i>Culms</i> at first mealy white, then green, turning to shining yellow, 2-5 m high, 12-15 mm in diameter.	Himalaya from Eastern Nepal to Arunachal Pradesh.
141.	<i>Thamnocalamus falconeri</i> Hk.f. ex Munro	A tall shrubby bamboo. <i>Culms</i> fistular, 12-15 m tall, olive green, 1.2-2 cm in diameter.	Himalaya from Uttar Pradesh to Arunachal Pradesh.
142.	<i>Thamnocalamus spathiflorus</i> (Trin.) Munro <i>Arundinaria spathiflora</i> Trin.	A gregarious caespitose shrubby bamboo. <i>Culms</i> 4-6 m high, 1-2 cm in diameter, glaucous-green first, afterwards turning yellow.	Endemic to North-west and Central Himalaya.
143.	<i>Thyrsostachys oliveri</i> Gamble	A handsome, densely caespitose bamboo. <i>Culms</i> 5-20 m tall 5 cm in diameter, with whitish silky surface when young, green or yellowish at maturity.	Native of Myanmar. Cultivated in many parts in country. Also introduced at Forest Research Institute, Dehradun.
144.	<i>Thyrsostachys regia</i> (Munro) Bennet <i>Thyrsostachys siamensis</i> Gamble	A caespitose deciduous bamboo. <i>Culms</i> usually 8-10 m tall, 4-5 cm in diameter, thick walled.	Native of Thailand. Cultivated in many parts of India.
