

DRAFT

MANIPUR BAMBOO POLICY

1. PREAMBLE:

- 1.1 From the cradle to the grave, since time immemorial bamboo has been an inextricable part of life's journey of the populace of Manipur. The myriad uses of bamboo has an intimate relationship with the local people in terms of traditional living and lifestyle. Ancient manuscripts such as the *Panthoibi Khonggul*, the *Poireiton Khunthokpa*, the *Thanga Chinggoirol*, and the *Yumsharol* mentions use of bamboo in some form or the other inferring that these were in use in the region in the period before Christ^[1].
- 1.2 The State of Manipur lies between latitude of 23⁰83'N-25⁰68'N and longitude of 93⁰03'E-94⁰78'E., with an area of 22,347 km². It is home to 25,70,390 people of which 67% is rural.
- 1.3 With 92% of its terrain being hilly type nestled at 40m to 2994m above sea level, there are 35 species of bamboo in Manipur (Annexure-I) . The State lies in one of the highest CVP (Climate, Vegetation and Precipitation) index zones (a measure of potential productivity) of the Country. There are more than 1,500 documented uses of Bamboo and Manipur has the second highest percentage of geographical area under bamboo plantation in the country (Annexure-II).
- 1.4 Bamboo sequesters carbon dioxide much faster than other forest and plantation crops. A grove of bamboo releases 35% more oxygen than an equivalent strand of trees and absorbs 4 times as much carbon. Thus it has tremendous potential in combating climate change. A large stock of bamboo contributes to broaden environmental goals of erosion control, reforestation and watershed management. Bamboo products can have a low or even negative carbon footprint across their lifecycle. Bamboo undoubtedly is a vital resource for country to combat the menace of climate change. Inclusion of this 'climate change warrior' in climate change policies will not only further the development goal of the State but aid in combating this challenge on a global scale.

- 1.5 Bamboo is a high yield renewable natural resource, grows much faster than wood and uses relatively less water. It is estimated that the average maturity period of bamboo can be as low as six months. It is one of the world's best natural engineering materials, its anti-erosion properties create an effective watershed stitching the soil together along fragile river bank and it is also foremost in biomass production. It produces 30% of its volume in biomass and its unique root and rhizome structure act as binders, controlling erosion and rejuvenating soil. Bamboo, in plantations or on the periphery of homesteads, acts as a windbreaker, a noise and climate buffer. As a consequence, bamboo based household plantation and agro-forestry can enhance food security, assists in soil conservation, watershed development and reclamation of waste land. It can therefore be used to control river bank erosion, arrest soil degradation and stabilize embankments.
- 1.6 The increasing demand on timber and wood and its negative effects on ecology makes bamboo a viable alternative due its versatility and multiple alternative uses to timber.
- 1.7 A planned, scientific and holistic approach to cultivation and management of bamboo on a sustainable basis can be an inexhaustible source of goods and services which will contribute significantly towards the socio-economic development of the State and the region as a whole.

2 VISION OF THE POLICY:

The policy seeks to harness the economic, social and environmental potential of the Bamboo resources of Manipur. It seeks to develop the economy of the State and provide employment and income generating activities to the farmers, rural poor and unemployed youths of the State. A market led, community owned sustainable development model for bamboo shall lead to an increase in quantity and quality of bamboo resources and enterprises to meet the current and future requirements of not just the State and Country but also the larger international market.

3 AIM AND OBJECTIVES:

With the intent of harnessing the huge economic and environmental potential of Bamboo, the Manipur Bamboo Policy envisages:

- 3.1 Sustainable development and utilization of bamboo resources through scientific management and research.
- 3.2 Revitalization and promotion of local traditional bamboo craft and art with improved technology, design and market linked trade for value added items for export through industrialized mode of production.
- 3.3 Promotion of bamboo based industries at cottage level, small scale, medium scale and large scale for utilizing the resources at a sustainable level for generating assured income to farmers and entrepreneurs. The policy will provide a road map for developing bamboo based enterprises. Developing bamboo based industries and advocating a strong link between the producer (farmer) and industry.
- 3.4 Promotion of bamboo sector development as an essential component of rural development strategy linked with forestry and agri-business sector in the State promoting rural employment.
- 3.5 Promotion of bamboo as an essential wood substitute by increasing bamboo production and bamboo based enterprise to reduce pressure on forests. To ensure the ecological and environmental benefits of bamboo are harnessed to its potential for the State.
- 3.6 Developing bamboo sector through market-led and community-based resourcing leading to augmentation of the rural economy.
- 3.7 Promotion of private bamboo plantation (individual and community owned) as a key thrust area for future economy of the State.
- 3.8 Promotion of awareness and understanding of bamboo as “green gold” among farmers, traders, industry, and people of the State to harness its full potential and spur rural and industrial economy of the State.
- 3.9 Effective exploitation of existing bamboo before the impending gregarious flowering. To design effective mitigation and management strategies.

4 RESOURCE:

- 4.1 The bamboo coverage of Manipur is 10,687 sq. Km., about 47.82% of geographical area and 61.36% of forest area. Bamboos in Manipur are found in three categories.
- 4.1.1 Pure type of 95 sq. Km which is also known as Bamboo brake.
 - 4.1.2 Dense type of 2790 sq. Km.
 - 4.1.3 Bamboo hacked type of 59 sq. Km.
 - 4.1.4 Regeneration crop type of 67 sq. Km.
 - 4.1.5 Scattered type of 7676 sq. Km. This is also known as under storey.
- 4.2 As of 2017, the bamboo stock of the State is 15.469 million MT^[2]. Dominant species in pure or bamboo brake is *Melocanna bacifera* (Muli). Smaller area of bamboo brakes occur almost all over the state except at the altitude above 1700m. Out of the 15 selective species identified in NBM, 9 species are grown in Manipur.
- 4.3 Management of resources in the State shall be based on the following Strategies:
- 4.3.1 Inventorisation of the bamboo resources, including identification, documentation, demarcation, assessing the various types of bamboo in the State. Mapping of existing resource both in Government and private/community land and expansion thereof through scientific methods. Inventorisation of species-wise and area-wise availability of bamboo in the State be accorded high priority in co-ordination with State Forest Research Institute(SFRI)-Itanagar, Forest Survey of India(FSI), Rain Forest Research Institute (RFRI)-Jorhat, National Remote Sensing Agency (NRSA), State Remote Sensing Application Center, Central Agricultural University, Indian Council for Agricultural Research (ICAR)-Manipur, Department of Forest & Environment-Manipur, Department of Horticulture and Agriculture-Manipur and other similar Institutes/Departments.

- 4.3.2 Enhancing the productivity and production base of the resource to meet the expected increase in demand up to a 10% annual increase of the sustainable yield from the year 2018 level.
- 4.3.3 Naturally occurring and plantation bamboos to be methodically managed to improve yield.
- 4.3.4 To double the income of the bamboo farmers and bamboo entrepreneurs within the next 5 (five) years. It shall also endeavour to continue to increase the income of the farmers and entrepreneurs by 5% annually after 5 (five) years.
- 4.3.5 Sensitise the masses with greater emphasis on the rural populace of bamboo as an alternative cash crop. As bamboo can grow easily with least labour and time, cultivation aspects are least considered, this needs to be addressed.
- 4.3.6 Research and Development of bamboo be given priority in the fields of regeneration, quality enhancement and maximising per area harvest.
- 4.3.7 Commercially important species with growth viability in the State to be identified and introduction thereof in the State.
- 4.3.8 Establishment of bambusetum consisting of different agro-climatic zone species for ex-situ preservation of bamboo germ-plasm. This would enable local artisans, bamboo growers and farmers to get first hand information about morphological features, aesthetic properties and growth characteristics of these plants. Information systems would be put into place for all to be aware of this facility and encourage usage. The bambusetum will also be home to all the native varieties of bamboo species, ecotypes and its germplasm persevered through the mechanism of in-situ and ex-situ preservation
- 4.3.9 Identify representative natural bamboo occurring areas within and outside Government land for in-situ preservation. These bamboo growth areas shall be managed as per approved management

plan keeping in view the sustainable forest management principles.

- 4.3.10 Protection from forest fire by using the existing institutions such as Jilla Parishads, Village Panchayats, Village Authority, SHGs, NGOs, JFMC, etc. with the active support of the Government.
- 4.3.11 Evolve management practises and harvesting techniques for natural and plantation bamboo.
- 4.3.12 Increase area of natural bamboo and replenishment of depleted bamboo growing stock through artificial regeneration using modern scientific technology of micro-propagation protocols developed for important bamboo species.
- 4.3.13 Construction of extraction road/path network to reduce extraction cost. These networks will not only facilitate replenishment of the depleted bamboo areas, but also create easy access to the existing bamboo for harvesting and its transportation.
- 4.3.14 Areas with potential for commercial cultivation of bamboo, both within and outside Government land will be identified for development of bamboo plantation on sustained basis.
- 4.3.15 Promotion of bamboo cultivation by individuals and communities on private and community lands through the active participation of the Jilla Parishads, Village Panchayats, Village Authority, SHGs, NGOs, Joint Forest Management Committees(JFMC),Co-operatives and CBOs.
- 4.3.16 JFMCs to be involved with activities in forest and non-forest areas while individuals will concentrate on private bamboo plantation. It shall be ensured that bamboo farmers are organized into associations or federations to enable effective participation in natural resource management.
- 4.3.17 Bamboo cultivation to synchronise with existing farming practices such as jhumming, etc. to maximise interim benefits.
- 4.3.18 Identification of commercially superior species and propagation thereof

- 4.3.19 Development of bamboo nurseries and distribution networks both in the Government and the private sector.
- 4.3.20 Development of research infrastructure for introduction and adoption of technological innovations.
- 4.3.21 Access to credit and loan for to bamboo farmers through banks and financial institutions.

4.4 Strategies to mitigate the post-harvest effect of gregarious flowering of bamboos.

- 4.4.1 The en masse post-flowering death of bamboos has disastrous consequences, both ecological and commercial.
- 4.4.2 The last gregarious flowering of bamboo in the State was during 2005-2006. There is a school of thought debating measures, such as replacing flowering varieties of bamboo with non-flowering ones. Botanists, however, believe that the only way to avert famines, associated with bamboo flowering, is to teach farmers to plant crops that rats do not eat, such as ginger and turmeric, during the periods when vast fields of bamboo are expected to flower. Mitigation and control strategies to be designed by Forest & Environment Department and Relief & Disaster Management Department.
- 4.4.3 Harvest the bamboos before the flowering starts.
- 4.4.4 Establish bamboo seed banks.
- 4.4.5 Give monetary incentives for collection of bamboo seeds.

5. BAMBOO TRADE:

- 5.1 Bamboo sector development is a high priority thrust area of the State Govt. and Govt. of India. Recently, there has been significant policy changes as listed below that will help in harnessing this great potential and enhance the scope to increase the present level of market share and improve the economy of the country, particularly the North Eastern Region:

- 5.1.1 The Union Government has promulgated the Indian Forest (Amendment) Ordinance, 2017 to exempt bamboo grown in non-forest areas from definition of tree, thereby dispensing with the requirement of felling/transit permit for its economic use.
- 5.1.2 The State Government has exempted bamboo extracted from Un-Classed forest areas from felling permit and levy of royalty as of 3rd July, 2018.
- 5.1.3 With the policy reforms it is anticipated that the bamboo trade volume will increase and it shall be the endeavour of the State to actively promote such activities. It is estimated by United Nation's Industrial Development Organisation (UNIDO) that the bamboo business in the North-East alone has a potential of about Rs 5000 crores in the next ten years.
- 5.1.4 The State Government shall ensure that the bamboo farmers are not marginalised and deprived of their share in availing the economic benefits of bamboo. To set up bamboo treatment and value additions units near the bamboo farms so that farmers are able to avail better price for their produce.
- 5.1.5 Usher in a mechanism of standardisation of bamboo price based on the following strategies:
 - 5.1.6 Bamboo markets shall be set up with active participation of the Government and bamboo farmers.
 - 5.1.7 Advocate the creation of community-based organisations besides JFMCs such as bamboo federations etc. to ensure greater bargaining power.
 - 5.1.8 The community-based organisations shall be responsible for felling and stocking of bamboos.
 - 5.1.9 Introduce a pricing matrix based on the species, size, etc. A System of certifying the bamboo shall also be introduced to ensure standardisation and quality to facilitate commercial consumption.

The Department of Forest and Environment shall develop and enforce this system.

5.1.10 Bamboo based industries shall procure their requirements from the community-based stockists. Industries claiming for any benefits from the Government shall invariably produce documents in prove of having purchased their entire bamboo requirements from the community-based stockists or JFMCs.

5.1 Extraction of bamboo will require a good network of roads which may be sourced through schemes such as agri-link roads and PMGSY. For areas not covered by these schemes the State bamboo development programmes should have road connectivity as one of the component.

6 DEVELOPMENT OF BAMBOO BASED INDUSTRY:

6.1 The Industrial and Investment Policy of Manipur 2017 (IIPM-2017)-notified by the State Government in November, 2017 has identified Bamboo & Bamboo Products Processing and Minor Forest Produces as Industrial Thrust Areas

6.2 The focus of IIPM-2017 Industrial Thrust Areas in respect of bamboo based industries will be on:

6.2.1 Conservation of traditional method of production of craft, handicraft, life style, art products and skill enhancement thereof.

6.2.2 Food products and enhancement of shell life by the use of high end packaging technology.

6.2.3 Medicinal and chemical products.

6.3 Actively advocate manufacture of high end products, by way of value addition, such as:

6.3.1 Mat ply

6.3.2 Flooring tile.

6.3.3 Laminated boards.

6.3.4 Shuttering.

6.3.5 Other similar products.

- 6.4 Explore other avenues of use of bamboo such as:
 - 6.4.1 Fabric and clothing; as being done by Raymond, BSL Ltd of Bilwara group and Paramount Textile Mills Ltd, Madurai
 - 6.4.2 Road construction; bamboo is being used for road reinforcement in Orissa.
- 6.5 Development of bamboo as a source of energy:
 - 6.5.1 Setting up of bamboo based bio-gas plant for use of the gas for combustion and electricity generation.
 - 6.5.2 Encourage setting up of Nano bio gas plant manufacturing units for domestic use.
 - 6.5.3 Set up pilot projects for extraction of ethanol, CNG etc. a component of bio fuel.
- 6.6 The bamboo policy framework shall encourage and promote establishment of bamboo enterprises and industries in micro, small and medium industries sectors linked to the need of bamboo produce/products within and outside the State.
- 6.7 It would be the endeavour to promote location of primary processing units in the vicinity of source as a step towards zero wastage and ensure better pricing for the farmers or bamboo growers.
- 6.8 Initially the industries shall be established based on the bamboo resource of the State suitable for manufacturing of either semi-finished products of simple bamboo products such as mat board, chop sticks, bamboo shoots, agarbati sticks and other handicraft products.
- 6.9 Develop and include bamboo materials and building in PWD and CPWD codes.
- 6.10 Use of bamboo and bamboo products shall be emphasised in Government constructions where such uses are feasible. Standard housing designs for various constructional purposes shall be evolved taking help of national and international expertise available.
- 6.11 Promotion of bamboo as a wood substitute thereby weaning away the industry from dependency on forest.
- 6.12 High value products will require effective and appropriate manufacturing processes along with market and export linkages. This policy shall encourage

joint ventures with entrepreneurs within and outside the State including foreign enterprises with technology, finance and export linkages. This arrangement will channel the resources through local traders and manufacturers into domestic and international markets.

7 INFORMATION, EDUCATION & COMMUNICATION (IEC):

The resource of various Government machineries as well as private parties shall be extensively utilised to impart IEC of the various aspects of bamboo.

- 7.1 Awareness programmes, campaigns, workshops shall be used to disseminate the various aspects of bamboos.
- 7.2 A structured curriculum in bamboo to be developed. It is expected that with the thrust being given to bamboo production and manufacturing, requirements of various levels of skilled manpower will have to be met. The policy shall ensure that skill training set up in the State shall put in place a certificate or diploma course in bamboo. The State ITIs shall also develop required skilled manpower in the field of bamboo industry.
- 7.3 To set up a Bamboo Research Institute in the State. This institute will serve the research and development required to harness the potential of bamboo as envisaged under this policy. The Department of Forest and Environment shall set up this institute under their administrative control.
- 7.4 The State shall also collaborate actively with experts and institutions (national and international) such as National Institute of Bamboo and Rattan Development, Indira Gandhi Forest Research Institute, National Institute of Design, Forest Survey of India, Central Agriculture University, Indian Council for Agricultural Research, World Bamboo Organisation, International Association of Bamboo and Rattan and other similar institutions to meet the objectives of this policy.

8 FUNDING:

- 8.1 Funding support to implement the various policy initiatives shall primarily be met from the budgetary provisions of Department of Forest and Environment and Department of Textiles, Commerce and Industries. There shall be separate

budgetary heads under the two Departments to meet the resource and enterprise aspect of the policy. In addition, the funds received under the National Bamboo Mission under the Ministry of Agriculture and Cooperation, Government of India shall also be aligned to the policy objectives at the annual plan formulation stage.

- 8.2 Special programs to finance bamboo plantation and bamboo enterprise shall also be prepared to seek institutional finance from NABARD, NEDFI and banking institutions in the State. Support of external funding from agencies like UNIDO, UNDP etc. shall also be explored to support bamboo sector development including bamboo industries in the State.
- 8.3 The policy will also endeavour to dovetail relevant Centrally Sponsored Schemes of the Government of India in so far as these schemes can be implemented to achieve the objectives of this policy.
- 8.4 The Government may also raise loans from Central Government and any other sources as may be approved by the State Government for development of bamboo sector.

9 INSTITUTIONAL SET UP:

- 9.1 The inherent multifarious nature of bamboo calls for inter Departmental convergence and the aim to achieve this is by constituting the following set-up:
- 9.2 State Level Bamboo Development Committee comprising of the following:

1	Hon'ble Chief Minister	Chairman
2	Hon'ble Minister (Textiles, Commerce and Industries)	Co-Chairman
3	Hon'ble Minister (Forest and Environment)	Co-Chairman
4	Chief Secretary	Member-Secretary
5	Administrative Secretary of Department of Textiles, Commerce and Industry	Member
6	Administrative Secretary of Department of Forest and	Member

	Environment	
7	Administrative Secretary of Department of Finance	Member
8	Vice-Chancellor Manipur University, Canchipur	Member
9	Vice-Chancellor Dhanamanjuri University, Thangmeiband	Member
10	Vice-Chancellor Central Agricultural University, Iroisemba	Member
11	Director Indian Council of Agricultural Research, Lamphelpat	Member
12	Director, NABARD, Imphal	Member
13	Representative of DoNER, GoI	Member
14	Representative of NEC, GoI	Member
15	SLBC Convenor, Manipur	Member
16	Any other member to be co-opted by the Committee	Member

The SLBDC shall meet at least 4 (four) times in a year to deliberate and draw up the action plan as outlined in the policy. It shall also draw up the guidelines for the executive committees and review their activities from time to time. It shall draw up the annual budget for the activities to be taken up under the policy and explore avenues for funding the activities under the executive committees.

9.3 Executive Committee (Resource) shall comprise of the following members:

1	Administrative Secretary of Department of Forest and Environment	Chairman
2	Principal Chief Conservator of Forest	Member-Secretary
3	State Mission Director, National Bamboo Mission	Member

4	Addl. State Mission Director, National Bamboo Mission	Member
5	Director (Agriculture)	Member
6	Director (Horticulture & Soil Conservation)	Member
7	Director (Rural Development)	Member
8	Representative of Finance Dept.	Member
9	Deputy Commissioners (All Districts)	Member
10	Representative of Manipur University	Member
11	Representative of Dhanamanjuri University	Member
12	Representative of Central Agriculture University, Iroisemba	Member
13	Representative of SLBC Convenor, Manipur	Member
14	Representative of NABARD, Imphal	Member
15	At least 3 representatives of farmer organizations/federations	Member(s)
16	Any other members to be co-opted by the Committee	Member

The Executive Committee (Resource) shall meet at least every 2 (two) months. It shall execute the mandate of the policy covering all aspects related to bamboo as a resource.

9.4 Executive Committee (Enterprise) shall comprise of the following members:

1	Administrative Secretary of Textile, Commerce and Industries	Chairman
2	Director (Trade, Commerce and Industries)	Member-Secretary
3	Director (Handloom and Textiles)	Member
4	Officer on Special Duty (Bamboo)	Member

5	State Mission Director (Skill Development Mission)	Member
6	Representative of Finance Dept.	Member
7	Representative of NABARD, Imphal	Member
8	Representative of SLBC, Manipur	Member
9	Deputy Commissioner (All Districts)	Member
10	President and Secretary of All Manipur Entrepreneur Associations	Member(s)
11	President and Secretary of Manipur Chamber of Commerce	Member(s)
12	Any other representative to be co-opted by the committee	Member

The Executive Committee (Enterprise) shall meet at least every 2 (two) months. It shall execute the mandate of the policy covering all aspects related to bamboo as an enterprise.

9.5 Bamboo Wing:

A Bamboo Wing in the Department of Trade, Commerce & Industry and the Department of Forest & Environment shall be created to be manned by existing manpower well versed in resource and enterprise aspects of bamboo.

9.6 Departmental Bamboo Cells

Creation of Bamboo Cells in relevant Line Department may be considered as and when the need arises.

9.7 District Level Bamboo Committee.

The policy endeavours to reach out to the grassroots comprising of bamboo farmers and entrepreneurs at the District and Sub-District level. There shall be a District Level Bamboo Committee headed by the Deputy Commissioners to coordinate the decisions of the executive committee(s). It shall comprise of the following members:

1	Deputy Commissioner	Chairman
2	Divisional Forest Officer	Member
3	General Manager, District Industries	Member

	centre	
4	Project Director (DRDA)	Member Secretary
5	Lead District Manager	Member
6	Representative of NABARD	Member
7	Representative of Farmer organization/federation of the concerned district	Member
8	Representative of All Manipur Entrepreneur Association of the concerned district	Member
9	Representative of Manipur Chamber of Commerce of the concerned district	Member
10	Any other member to be co-opted by the Committee	Member

10 **ACTS AND RULES:**

All Acts and Rules promulgated by the Centre and State shall be applicable for development of bamboo sector in Manipur.

11 **POLICY REVIEW:**

The policy shall be reviewed periodically so that essential policy directives and imperatives are evolved from time to time.

Reference:

- 1 *Mutua Bahadur:Cane & Bamboo Crafts of Manipur, Part 1 as published in E-Pao*
- 2 *Forest Survey of India-2017.*

SI	Name of Species	Local Name
1	<i>Bambusa balcooa</i> **	Barua (Bangali)
2	<i>Bambusa bambos</i> (arundinacea Thorny Bam)**	Ching Saneibi (Mani)
3	<i>Bambusa cacharensis</i>	Moriang wa, Betua(B)
4	<i>Bambusa jaintiana</i>	Gasui (Rongmei)
5	<i>Bambusa manipureana</i>	Uma (Manipuri)
6	<i>Bambusa mizorameana</i>	Khok wa(Manipuri)
7	<i>Bambusa nutans</i> **	Saneibi (Manipuri)
8	<i>Bambusa tulda</i> **	Utang, Watang (Mani)
9	<i>Bambusa vulgaris</i>	Jaibarua (Bangali)
10	<i>Bambusa vulgaris</i> var. <i>vittata</i>	Yellow Bamboo
	<i>Bambusa vulgaris</i> f. <i>waminii</i>	Budha belly bamboo
10	<i>Chimonobambusa callosa</i>	Laiwa (Manipuri)
11	<i>Dendrocalamus hamiltonii</i> **	Wanap, Unap, Pecha
12	<i>Dendrocalamus hookeri</i>	Watangkhoi/Liwa
13	<i>Dendrocalamus latiflorus</i> (giganteus) **	Maribob (Mani)
14	<i>Dendrocalamus longispathus</i> **	Wui, Uil (Mani)
15	<i>Dendrocalamus manipureanus</i>	Ui (Manipuri)
16	<i>Dendrocalamus sikkimensis</i>	Paalm (Kabui)
17	<i>Gigantochloa andamanica</i>	Pui (Kabui)
18	<i>Melocalamus compactiflorus</i>	Dural (Bangali)
19	<i>Melocalamus indicus</i>	Moriang wa /Uma
20	<i>Melocanna baccifera</i> **	Moubi-wa (Mani)
21	<i>Neomicrocalamus prainii</i>	Tenwa (Mani)
22	<i>Schizostachyum dullooa</i>	Phisautong (Mani)
23	<i>Schizostachyum fuchsianum</i>	Gowa (Kuki)
24	<i>Schizostachyum manii</i>	Chi (Kabui)
25	<i>Schizostachyum munroi</i>	Nat (Mani)
26	<i>Schizostachyum pallidum</i>	Mayung (Mani)
27	<i>Schizostachyum pergracile</i>	Pungsang (Mani)
28	<i>Schizostachyum polymorphum</i>	Talak
29	<i>Schizostachyum sharmae</i>	
30	<i>Sinarundinaria elegans</i>	Ngarik (Kuki)
31	<i>Sinarundinaria falcata</i>	Machum (Tangkhul)
32	<i>Sinarundinaria graffuhiana</i>	Maram(Tangkhul)
33	<i>Sinarundinaria hookeriana</i>	
34	<i>Sinarundinaria rolloana</i>	Japva Thifu (Naga)
35	<i>Sinarundinaria falcata</i>	Machum (Tangkhul)

Percentage of area under Bamboo plantation (FSI, 2011)

Ann-II

