# PROSPECTS OF ECONOMIC FORESTRY WITH SPECIAL REFERENCE TO LIVELIHOOD, SKILL REQUIREMENT AND MARKET LINKAGE OF ARTISANS ON BAMBOO CRAFT IN ASSAM, MEGHALAYA AND NAGALAND

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# TITLE OF THE STUDY

PROSPECTS OF ECONOMIC FORESTRY WITHSPECIAL REFERENCE TO LIVELIHOOD, SKILLREQUIREMENT AND MARKET LINKAGE OF ARTISANS ON BAMBOO CRAFT IN ASSAM, MEGHALAYA AND NAGALAND

# Executive Summary

## INTRODUCTION

Bamboo plays an important role in the lives of the rural households in the North-eastern states of India. The opportunity to use bamboo for various products from utility to livelihood calls for a more structured approach towards realising the potential of bamboo. However, in India, the regulatory framework for bamboo harvest and trade has inhibited the growth of bamboo-based industries. Combined with the challenges posed by the regulatory system, there are challenges at each stage of the bamboo value chain viz. production, transformation and consumption.

Further, there are regulatory constraint on transit of bamboo as well as on harvesting from private plantations. Other constraints like poor market linkage of the products, lack in technology application for new product design along with testing, certification of products, unscientific approaches to plantation, lack of post-harvest treatment facilities, and up-gradation of skills also impedes its growth in the NE region (Salam, undated).

In light of these challenges, the Govt. of Assam, Meghalaya and Nagaland had expressed their desire for a study to be taken up under the Techno-Economic Development Fund (TEDF) of NEDFi on assessing the livelihood, skill requirement and market linkage of artisans on bamboo craft in Assam, Meghalaya and Nagaland.

The North Eastern Development Finance Corporation Ltd. (NEDFi) engaged the services of N R Management Consultants India Pvt Ltd (NRMC) to carry out a '**Study on the prospects of economic forestry with special reference to livelihood, skill requirement and market linkage of artisans on bamboo craft in Assam, Meghalaya and Nagaland**'.

## 1.1 Scope of work

The scope of work for the assignment according to the terms of reference is as follows:

- To assess the existing status of the economic forestry with special reference to commercial cultivation of Bamboo in private /Govt. land and constraints and challenges faced by this sector.
- To analyse current forest laws and policy framework and issues of landownership and rights specific to the concerned States and assessment of adequacy or inadequacy of other institutional support mechanisms and impacts thereon.
- Identification of craft persons and clusters and assessment of the prevailing/existing crafts and methods, level of investment and earnings at cluster level and also analysis of the scope of potential handicrafts in the identified clusters.
- Skill gap analysis with regard to: a) the entrepreneurship skills of the artisans/craftsmen and b) the products with high market demand both nationally and internationally.
- Scope for capacity building, skill up-gradation of artisans and promotion of traditional crafts and art with improved technology, design and value addition.
- Identification of appropriate product, process, efficient tools and technologies.
- Identification of appropriate marketing concepts and linkages for the producer groups to improve earnings and sustain business turnover.

- Prepare an Institutional framework and roadwork for improving the skill set, product line and marketing opportunity among the artisans and other stakeholders with a special reference to female artisans.

## 1.2 Approach and Methodology

1. **Snowballing approach:** The study followed a 'snowballing approach', where identification of the clusters was the starting point of the study, followed by interactions with artisan/ farmer groups. Information on the next actor in the link was provided by the artisan which led the team to move further forward as well as backward in the supply chain. Each actor provided lead for the next link, which facilitated the mapping of bamboo supply chains wherever possible. This approach was adopted considering the unorganized nature of the bamboo handicraft sector and paucity of information on the bamboo handicraft supply chain.

2. **Data collection approach and tools:** For primary data collection, the study adopted a mixed method approach using qualitative and quantitative techniques. The study involved visiting various clusters of bamboo in the state and interacting with artisans involved with the bamboo craft. Discussions were also held with other actors such as aggregators, traders, marketing agents and entrepreneurs to get a holistic perspective of the bamboo handicraft industry. Secondary data was also collected by reviewing relevant documents and reports. The following steps were undertaken to collect the data:

   i. **Scoping Mission to the three states:** A scoping mission was undertaken in the first phase of the assignment which involved discussions with NEDFi, Bamboo Mission officials of the respective states, and state department officials to broadly understand the bamboo handicraft industry in each of the three states, and to identify potential clusters which could be studied during the field visit.

   ii. **Secondary review:** A comprehensive secondary review of reports and information available in the public domain on different aspects of bamboo handicrafts was carried out. Documents and data available with various agencies related to bamboo were also reviewed. Some of the studies and reports that were studied as part of the assignment are:

      - State Bamboo Missions implementation reports and documents
      - State Policies on Natural Resources Management and Bamboo, wherever available
      - Terminal Evaluation Report of the Cane and Bamboo networking project of UNIDO
      - Various scientific papers on bamboo supply chain
      - Scientific papers on the silviculture and management of different bamboo species
      - Miscellaneous reports to help understand strengths and challenges of bamboo handicraft sector
      - Other reports of studies conducted by different agencies

   iii. **Primary Assessments:** After developing an initial understanding of the bamboo industry in the three states, a field visit for data collection from farmers, artisans, entrepreneurs, traders and other value chain actors was undertaken. The field level data collection focused on clusters in each state where there exists a sizeable number of bamboo handicraft artisans and/ or where bamboo production was abundant. The interactions at the community level covered both male and female members.

      **Quantitative data collection**

      Quantitative data collection was undertaken using administered questionnaire and customized checklists to collect data and information on the various aspects of bamboo products and their value chains. The tools were mainly used for artisans/ farmers, and other value chain actors such as traders, retailers and marketing agents.

      Quantitative tools broadly captured the following information

- Socio-economic profile of participants
- Different types of handicrafts products made in a region
- Current practises of manufacturing bamboo handicrafts including information on raw materials, labour and tools
- Role of different actors in a supply chain
- Support received from the participants for manufacturing, upscaling, and marketing
- Challenges faced by the participants

**Qualitative data collection**

Qualitative data collection exercise was conducted with officials in the government departments, financial institutions, handicraft showrooms and design houses, technology parks etc. Under this approach, in-depth interviews and focus group discussions (FGD) were conducted to collect data to:

- Corroborate the data received from the quantitative tools and,
- To understand the overall scenario of the bamboo handicraft industry including policy and regulatory issues, status of functioning of various government schemes, issues faced by the different actors in the supply chain and reasons for the same, suggestions and recommendations to strengthen the sector.

3. **Sampling methodology:** The districts, and clusters within each district in the three states of Assam, Meghalaya and Nagaland were identified as part of the secondary review and finalized in consultation with technical consultants at NEDFi, state forest departments and the District Industries and Commerce Centre (DICC).

   The table below provides details of number of participants in different stakeholder category who were surveyed during the field visit. It was found that the size of the clusters and actors in the supply chain varied from the original assessment which was based on information from secondary sources. This difference in information resulted in slight deviation from the proposed sample size for each category. Thus, the table also provides the original sample size along with reasons for deviation.

**Table 1: Sample size: proposed and achieved**

| S. No. | Particulars | Sample proposed | Remarks | Sample covered | Remarks |
|---|---|---|---|---|---|
| **1.** | States | 3 | | 3 | |
| **2.** | Districts | 9 (three in each state) | | 20 districts (9 in Assam, 3 in Nagaland and 8 in Meghalaya) | After the scoping mission, it was decided to follow a cluster-based approach in select districts. It was also decided that |
| **3.** | Cluster | 18 (two in each district- six in each state) | | | |

| S. No. | Particulars | Sample proposed | Remarks | Sample covered | Remarks |
|---|---|---|---|---|---|
| | | | | | clusters in Assam will constitute 50% of the total number of clusters, and the remaining will be divided between the Meghalaya and Nagaland. The clusters were identified in consultation with technical consultants of NEDFi, and inputs from Forest Department and DIC.<br><br>During the field visit, it was discovered that several clusters that were suggested for covering under the study were either not functioning at scale with respect to the numbers of artisans and products, or had ceased to function due to gregarious flowering of bamboo leading to diversifying away from artisan trade. Therefore, the numbers of districts being covered was increased from 9 to 15. |
| **4.** | Farmers involved in Commercial cultivation of Bamboo | 45 (15 in each state) | At least 20 women | 135 (including artisans and farmers in the three states). 25 percent coverage of female respondents | During the field visit, it was realized that (a) every farmer that grew bamboo used bulk of the produce for self-consumption, (b) there were no commercial cultivators of bamboo in the select districts, and (c) every artisan was also a bamboo grower. Given this, it was not possible to segregate the two for conducting the primary survey. In order to get around this, a larger number of artisans were covered in the survey to better capture the relationship |
| **5.** | Artisans | 130 (around 5-10 in each cluster) | 25 percent coverage to be women | | |

| S. No. | Particulars | Sample proposed | Remarks | Sample covered | Remarks |
|---|---|---|---|---|---|
| | | | | | between bamboo production and artisan livelihoods. |
| **6.** | Entrepreneur | 15 (at least 5 in each state working on bamboo in different aspects in the value chain- aggregator, retailer, transporter, etc.) | At least 5 will be women | 10 – Assam<br>10- Nagaland<br>2- Meghalaya | The numbers of entrepreneurs in Meghalaya were very few and the volume of their produce was way lower than what is produced in Assam and Nagaland. In order to draw a proportionate number of entrepreneurs from the three states, the numbers in Assam and Nagaland were increased while that in Meghalaya were reduced. The total number of entrepreneurs covered was 22 which is almost 50% higher than originally planned. |
| **7.** | Artisan collectives (if existing) | 3 (one in each state) | | 0 | No Artisan or bamboo farmers' collective were found operating in the three states. |
| **8.** | Bamboo farmers collective (if existing in state) | 3 (one in each state) | | 0 | |
| **9.** | Value Chain Actors | 50 (around 15 in each state) | At least 15 women | 3- Nagaland<br>15- Assam<br>4-Meghalaya | The value chains in all three states were very simple in composition and comprise few actors. |
| **10** | Staff from State level agencies, external funded projects | 50 (around 15 in each state) | | 26- Assam<br>10- Nagaland<br>10- Meghalaya<br>4- Sikkim and Tripura | |
| **11.** | Research/ Design/ Management Institutions (on Bamboo, skill development, marketing, etc.) | 5 (spread across the North Eastern Region) | | 4 | IIT Guwahati, NBDA Dimapur, CBTC Burnihat, IIE Guwahati |
| **12.** | National/ international | 5 | | Mutha Industries, Tripura | |

| S. No. | Particulars | Sample proposed | Remarks | Sample covered | Remarks |
|---|---|---|---|---|---|
| | players in bamboo | | | Bamboo and Cane Development Institute, Tripura Tripura Bamboo Mission, Timpac Idustry, Meghalaya Zonum mat ply Industries, Mizoram, Arunachal Ply Woods, Namsai, Arunachal Pradesh. | |

The stakeholders with whom interactions were held for qualitative and quantitative discussions included the following:

**Table 2: Stakeholders met for discussions**

| S.No | Type of stakeholder | Details |
|---|---|---|
| 1 | NEDFi officials - region and state | • Assam |
| 2 | State government officials (state/district/sub district) | • Forest department in the three states<br>• District Industries and Commerce Centre in the three states<br>• Khadi and Village Industries Commission (KVIC)<br>• Tribal Cooperative Marketing Development Federation (TRIFED)<br>• Handicraft development and trade promotion agencies<br>  • North Eastern Handicrafts and Handloom Development Corporation<br>  • Meghalaya Handloom and Handicraft Development Corporation<br>  • Nagaland Handloom & Handicrafts Development Corporation<br>  • Meghalaya Industrial Development Corporation<br>• State Bamboo Mission officials<br>• Nagaland Bamboo Development Agency (NBDA)<br>• Cane and Bamboo Technology Park<br>• Nagaland Remote Sensing and Application Centre<br>• NABARD<br>• SIDBI<br>• Rain Forest Research Institute, Jorhat |
| 3 | Other actors | • NGOs<br>• SHGs<br>• Village Bamboo Development Committee- Nagaland<br>• Training and research institutions (CBTC, IIE, NIFT) |
| 4 | Value Chain actors | • Bamboo Artisans<br>• Bamboo based entrepreneurs<br>• Traders<br>• Retailers<br>• Transporters<br>• Marketing agents (leading brands in bamboo crafts, design houses, emporiums) |

## 2 FORESTRY IN NORTH-EAST

Forests are a source of food, fuel and livelihood for millions of people around the world. It has been reported that more than 1.6 billion people depend on varying degrees on forests for their livelihoods out of which at least 350 million people live inside or close to dense forests, largely dependent on these areas for subsistence and income, while about 60 million people are fully dependent on forests.[1]

India is rich in biodiversity and has two of the world's 25 major biodiversity hotspots – The Western Ghats and the Eastern Himalayas. North Eastern states in India form a part of the Eastern Himalayan Hotspot that is marked by the presence of diverse flora and fauna. According to the India State of Forests Report (2017), the eight states of the North East (together) comprise a fourth of the country's total forest cover, the administrative control of which is predominantly with the local communities. The forest cover in the North Eastern states is presented below.

**Table 3: Forest Cover in North East India (Sq. Km)**

| State | Total Forest | Proportion of total geographical area of state |
|---|---|---|
| Arunachal Pradesh | 66,964 | 79.96 |
| Assam | 28,105 | 35.83 |
| Manipur | 17,346 | 77.69 |
| Meghalaya | 17,146 | 76.45 |
| Mizoram | 18,186 | 86.27 |
| Nagaland | 12,489 | 75.33 |
| Sikkim | 3,344 | 47.13 |
| Tripura | 7,726 | 73.68 |
| Source: Indian State Forest Report- 2017 | | |

### 2.1 Non-Timber Forest Produce in the North East Region

It has been estimated that more than 40 percent of the poor of the country, including the tribal, are living in forest fringe villages (MoEF, 2006) and about 400 million people in India are dependent on Non-Timber Forest Produce (NTFP) either directly or indirectly[2].Forest fringe communities are dependent on forest products such as edible fruits, flowers, tubers, roots and leaves for food and medicines; firewood for cooking; house construction and fencing; fodder for livestock; grazing of livestock and wood for handicraft (like bamboo and cane), which are used for their own consumption or for sale. According to the report of sub-group II on NFTP under the XII Five Year plan, NTFP generates about INR 20 billion as government revenues. It also fetches the forest dwellers an income that constitutes about 20 percent to 40 percent of their annual income. NTFPs play a major role in socio-economic upliftment and livelihood sustenance for local communities of the North East. About 28 percent of rural residents in the North East depend on forest for their cash income.

There are four major categories in to which the use of NTFPs in the region can be classified.

1) **For edible purposes:** The wild forest produce offers a variety of fruits and vegetables to local people as nutritional diet, and includes leafy vegetables, bamboo shoots, wild edible mushrooms and honey which are collected from the forest for self-consumption as also for cash generation. There are a number of trees in the forests whose flowers, leaves, young shoots are eaten as vegetables and used to make pickles. Some of the important species used as food products are *Amaranthus viridis, Artocarpus lacucha, Baccaurea sapida, Dillenia indica, Cinnamomum tamala, Erioglossum rubiginosum, Magnifera sylvatica and Spondias pinnata.*

2) **For medicinal purposes:** Use of plants as a means to cure ailments and diseases has been brought up as practice from time immemorial, and specific species that are of medicinal value are widely used by the local practitioners. Some common NTFP species used for medicinal purpose are *Acorus calamus, Adhatoda vasica, Azadirachta indica, Canarium strictum, Phyllanthus emblica, Mikania scandens, Mesua ferrea, Rauwolfia serpentina, Saraca asoka, Terminalia arjuna, Terminalia chebula, Terminalia bellirica and Tinospora cordifolia*.

3) **For building construction and local handicrafts:** An important contribution of NTFPs for socio-economic development of the community is the prevalent use of bamboo and cane for construction of buildings and manufacturing of handicrafts. Bamboo are widely used by local people for construction of houses, bridges and fences – and with its multiple uses, the importance of bamboo for livelihood is very high for the communities (refer Table 4). Leaves are used as fodder for the livestock, stems are extensively used for construction and handicraft preparation (making mats, baskets, utility and decorative items, etc.) and young shoots as food. It, thus, contributes significantly to the household economy and sustenance.

**Table 4: Some common NTFP species used for construction and handicrafts**

| Scientific name | Part used | Used as |
|---|---|---|
| **BAMBOO** | | |
| *Bambusa balcooa* | Culm (stem) | House poles/ construction/ edible shoots |
| *Bambusa tulda* | Culm | Handicraft/construction/ handicrafts |
| *Bambusa nutans* | Culm | Housing/ mats/ handicrafts |
| *Bambusa cacharensis* | Culm | Furniture/ construction |
| *Bambusa pallida* | Culm | Bamboo mats/ construction |
| *Dendrocalamus hamiltonii* | Culm /leaves | Furniture/ construction/ fodder/edible shoots |
| *Melocanna baccifera* | Culm | Housing/ sticks/ mats/ handicrafts/ edible shoots |
| *Schizostachyum dullooa* | Culm | Mats/ handicrafts/kite making/ |
| *RATTANS* | | |
| *Daemonorops jenkinsianus* | Stem | Furniture making |
| *Calamus latifolius,* | Stem | Furniture making |
| *Calamus tenuis, C. guruba* | Stem | Furniture/novelty items |
| *Calamus flagellum* | Seed/ stem | Edible/ Furniture |
| *Calamus gracilis* | Stem | Rope/ Furniture |

4) **As fuelwood:** The most widely prevalent source of energy for the rural people is fuelwood. Fuelwood consumption is high and villagers sell it at the local market for income. Bamboo charcoal has also picked up demand gradually and there are many entrepreneurs setting up charcoal kilns to make bamboo charcoal briquettes. Some of the species used for cooking energy are *Albizia lucidior, Mallotus albus, M.philippensis, Pongamnia pinnata, Syzygium fruticosum and Pterospermum lanceaefolium*.

## 2.2 Economic potential of Bamboo from North East Region

The combined value of internal and commercial uses of bamboo in the world is estimated at an annual figure of INR 50,000 crores. China's export of bamboo products is close to INR 10,000 crores, while India's size of the domestic bamboo economy is estimated at INR 2,043 crores. The market potential for Indian bamboo, however, is estimated to be much higher at INR 4,463 crores with a potential to grow up to INR 26,000 crore (Planning commission 2003 in Jamatia 2012[3]). The products that can be made from Bamboo can broadly be categorized into the following.

1 Wood Substitutes and Composites

2 Industrial Use and Products

3 Food Products

4 Construction and Structural Applications

5 Handicraft and Cottage Industry products

6 Raw Material in the paper and pulp industry

Bamboo is the most dominantly used NTFP in the North East. Nearly 39 percent of the total area under bamboo in India is in the North-East Region[4]. The state wise area under bamboo is presented in Table 5. The region produces about 66 percent of the total bamboo produced in India, while the rest of the country makes up for a mere 34 per cent. Further, out of the 145 species of bamboo available in India, 91 are found in the north east (Tomar *et al*, 2009)[5]. With such ease of raw material availability, the region has a comparative advantage towards leveraging bamboo for enhancing local livelihoods. At the same time, bamboo resource has been an integral part of the life and culture of the various community groups of the North East. In addition, the region is closer to the strong potential export markets of Bangladesh, Myanmar and Tibet (Baksy 2013)[6].

**Table 5: Bamboo Area of North East States**

| Sl. | State | Bamboo growing Areas(sq.km)[7] |
|---|---|---|
| 1 | Arunachal Pradesh | 16,803 |
| 2 | Assam | 7,238 |
| 3 | Manipur | 9,303 |
| 4 | Meghalaya | 4,793 |
| 5 | Mizoram | 9,245 |
| 6 | Nagaland | 4,902 |
| 7 | Sikkim | 1,181 |
| 8 | Tripura | 3,246 |
| 9 | **Total** | **55,991** |

A number of NTFP species have been identified to be occurring extensively in different parts of North East. These are *Curcuma longa* (Jhum haldi), *Curcuma caesia* (Kali haldi), *Piper longum* (Pipulu), *Smilex sp.* (Chopchini), *Alpinia galangal* (Galanga), *Hedychium spicatum* (Shatti), *Lagerstroemia speciosa* (Banaba/Jarul leaves), *Homalomena aromatic* (Sugandhmantri), *Thysanolaena maxima* (broom grass) and *Clinogyne dichotoma* ( Patidoi). Besides wild flowers, orchids, ferns, and other ornamental plants occurring in the NE forests are also potential sources of raw materials for marketing in other parts of India and also in other countries. Sustainable harvesting and managements of natural sources along with creating centers for cultivating these plants are profitable options for economic forestry practices.

## 2.3 Challenges

In many parts of India, as also in NER, some of the NTFP yielding plants have been reduced to 10-20% of their availability, compared with what existed about a decade ago. The increasing requirement of industry to meet the growing domestic demand for food and herbal medicines is putting enormous pressure on the forests. Almost 90 percent of the raw material requirement of the industry comes from the wild resources. No concerted efforts are being made to replenish the resources for future availability. Further, with the population expansion, some of these resources may get thinned dramatically, and some may disappear altogether.

This alarming situation calls for immediate attention of all concerned to reverse the process of degradation and contribute to the conservation and sustainable development of what we are still left with. Having realised the potential of NTFP as a safety net for the poor and needy-forest dependent people, there are serious efforts required to ensure that these resources last till perpetuity.

# 3 POLICY AND LEGAL FRAMEWORK

'Forest' is a subject under the concurrent list in the Constitution of India; thus, both central and state laws are applicable on forests of India. Bamboo primarily found in forests is categorized as forest produce. Its status with regard to cultivation, harvesting, transportation and sale is governed by different national, as also state level acts and regulations. The existence of the multiple regulations coupled with the lack of convergence between the different departments and ministries that regulate these, sees the articulation of various on-ground complexities in the use of bamboo as a resource for enterprise development. Not only are there complexities of national and state level regulatory and non-regulatory mechanisms; but these when combined with the special case of the North Eastern Region (NER), lend greater complexity to the effective implementation of bamboo resource utilization, such that despite its vast potential its growth to contribute to rural livelihoods is impeded.

The following section will bring out the key elements of various pertinent national and state level acts and policies in relation to bamboo. At the same time, it will also highlight the key non-regulatory challenges within the governance ecosystem of bamboo.

## 3.1 Defining 'bamboo': Conflict in policies

The key national level policies that govern and pronounce the usage of bamboo in India are as follows:

**Indian Forest Act 1927 (IFA)**: The Act classifies bamboo as a 'tree' contrary to the scientific classification of bamboo as a 'grass'. Thus, bamboo when felled is referred to as 'timber'. In November 2017, The Union Government amended Section 2 (7) of 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.

**Forest Conservation Act 1980 (FCA)**: This Act deals with restriction on allotment of 'forest-land' for non-forest purposes and de-reservation of reserved forests. It expands the scope of the IFA and enhances government control over forests, making it difficult to remove restrictions once they have been put in place.

**Scheduled Tribes and Other Forest Dwellers Act, referred to as the Forest Rights Act, 2006 (FRA)**: The FRA classifies bamboo as a non-timber minor forest produce (MFP). It vests the right of ownership and the right to collect, use and dispose bamboo in the forest-dwelling communities, as a part of their traditional rights. The FRA constrains the development of bamboo industry by attempting to vest the right to trade in bamboo with tribal and other traditional forest dwellers. Under the FRA, forest dwellers have the right to collect, process, store and transport bamboo as it is an MFP.

**Supreme Court Judgment(s)**: The Supreme Court in T.N. Godavaram Thirumulkpad vs. Union of India (1977) ordered a complete ban on the movement of cut trees and timber from any of the seven north eastern states to any other state of the country either by road, rail or water transport. However, in 1996, the Supreme Court classified bamboo as an MFP and exempted it from the ban on felling of trees from forests.

**Circulars of Ministry of Environment and Forests (MoEF)**: The MoEF in 2011 urged all the states to treat bamboo as an MFP. Further, in a 2013 circular MoEF urged state governments to remove transit pass requirements for bamboo grown on private lands.

| |
|---|
| **North - East Forest Policy, 2002:** The North East Forest Policy Committee was constituted by the MoEF in 1998 to suggest a suitable Forest Policy for the NER. The policy promotes forest-based livelihood opportunities to benefit the region and the local communities. |
| **Schedule VI**: Under Schedule VI of the Constitution of India, rights of the tribal communities in specific North Eastern states are protected by constitutionally mandating district or regional local self-government institutions for them. Assam and Meghalaya are specified with each having Autonomous District Councils (ADCs). The ADCs can make laws related to the use of land, other than any land which is a reserved forest, for the purpose of agriculture or non-agriculture. Neither Union nor State law will be applicable without the consent of the ADCs. |

Source: CCS, undated; Mark Poffenberger et al, 2006; Vrinda Aggarwal, 2014[8]

We see that **under the Indian Forest Act, bamboo is classified as a 'tree'** and its cutting or removing from a government designated 'reserved' forest is a criminal offense. While **under the FRA, bamboo is designated as an MFP**, a definition which is in direct conflict with that of the IFA. Subsequent legislations and policy directives like the Supreme Court Judgement and circulars of MoEF, however, have progressed to define bamboo as an MFP (CCS, undated; Mark Poffenberger et al, 2006; Vrinda Aggarwal, 2014[9]). The FRA, the North East Policy and Schedule VI vest claims on land (including forest – but not reserved forest) with the forest dependent and local governing institutions, such that the resources from the same can be used for livelihood purposes. The amendment of Section 2 (7) of the Indian Forest (Amendment) Ordinance, 2017 to exempt bamboo grown in non-forest areas from definition of tree in November 2017 finally removed this ambiguity.

## 3.2 Harvesting and Transit Permits

The IFA classifies forests into three categories, namely, 'Reserved Forests', 'Protected Forests' and 'Village Forests'.

- The **IFA (Section 26) prohibits harvesting of bamboo in 'Reserved Forest'** except by the Forest Department. The Forest Department has the right to arrest without warrant those who cut bamboo from such designated forest areas.

- Harvesting of bamboo **from the 'Protected Forest' is to be done with written permission from the Forest Department**.

  Harvesting of **bamboo from 'Private lands' required a Certificate of Origin** from the Forest Department. With the 2017 amendment, it is expected that farmers and other individuals would be encouraged to take up plantation/ block plantation of suitable bamboo species on degraded land, in addition to plantation on agricultural land and other private lands under Agroforestry Mission. However, it remains to be seen, how the forest department would ascertain whether the bamboo had originated in non-forest area during inter-state transits.

- The IFA spells out the transit rules for forest produce which is controlled by the state government, and the transport of Bamboo from forest lands requires 'transit permit' from the Forest Department.

Most states have their respective laws on bamboo. In some states, **bamboo grown in captive plantations (not regarded as forest produce), does not require harvesting or transportation permissions**. Assam, Nagaland and Meghalaya are included among these states.

## 3.3 Agro-forestry Policy

In the year 2014, India became the first nation in the world to adopt an agroforestry policy, the provisions of which are also applicable in the case of bamboo grown on farmlands. This is seen as a positive step for bamboo sector development, as the policy brings with it ease in permits for harvesting and transit.

The **National Agroforestry Policy** (2014) deals with the practice of integrating trees, crops and livestock on the same plot of land. The policy is expected to benefit the country's farmers through incentives for agroforestry, insurance schemes and greater access to markets for agroforestry products.

- The new policy addresses coordination, convergence and synergy between various elements of agroforestry, scattered across various existing missions, programme and schemes under different ministries—agriculture, rural development and environment. The policy is aimed to be implemented through an integrated agroforestry mission or board.
- Given the multiple regulations imposed by multiple agencies like departments of forest, land revenue and other local bodies on felling and transit of trees, the policy looks at amending unfavourable legislation and simplifying regulations relating to forestry and agriculture.
- The policy urges state governments to grant tenancy rights for farmers, computerization of land records, use satellite imagery to find existing trees in farmland etc.
- It will also provide incentives to farmers, insurance schemes and greater access to markets for agroforestry products.
- Research, extension and capacity building are also key areas of focus as is stimulating greater industry involvement.[10]

## 3.4 North East Industrial Policies

The yet to be formalized new industrial policy of the north east region will entail concessions and incentives for growth of industry in the region. It also aims to give a thrust to village and small- scale industries, thereby have implications for the bamboo industry as well. While at the state level, the prevailing industrial policies underline bamboo industry as a thrust area.

The **North-East Industrial Policy** (NEIP) (1997 to 2007) was launched as a package of incentives to encourage setting up of industries in the North Eastern region. The second edition of the Policy that is the **North East Industrial and Investment Promotion Policy**, 2007 (NEIIPP) has been effective from 2007 up to 2017 and covers all new units as well as existing units which go in for substantial expansion.

The incentives are available to all industrial units, located anywhere in the North Eastern Region, not necessarily within an industrial estate, growth centre or any such designated place. Excise Duty exemption is made available on finished products manufactured in the region based on duty payable on value addition undertaken in the manufacture of such goods. The policy also offers 100 percent Income Tax exemption and subsidy to units in the Private Sector, Joint Sector, Co-operative Sector, and Units set up by the State Governments[11].

With the NEIIP ending in 2017, the Government of India has recently approved the **New Industrial Policy and Other Concessions for the North Eastern Region** with the following features.

- Growth centres will be encouraged and promoted with a central assistance of INR 10 crores for each centre, subject to a ceiling of INR 15 crores.
- The growth centres will be converted into a tax-free zone and all industries in these zones would be exempt from income tax and excise for a period of 10 years from the commencement of production. State Governments would be requested to grant exemptions in respect of Sales Tax and Municipal Tax.
- Industries located in the growth centres would also be given capital investment subsidy at the rate of 15 percent of their investment in plant and machinery, subject to a maximum ceiling of INR 30 lakhs.
- Commercial banks and NEDFi will have dedicated branches/ counters to process applications for term loans and working capital in these centres.
- Similar benefits would also be extended to the new industrial units or their substantial expansion located outside these growth centres and other identified locations would also be eligible for the similar fiscal incentives.
- A comprehensive insurance scheme for industrial units in the North East will be designed.
- Exports of products to the neighbouring countries particularly Bangladesh, Myanmar and Bhutan would be explored.
- As the community pattern of land holding in the region does not lend itself to providing collateral security as required under conventional bank lending - an appropriate system of "guarantees" will be evolved.
- Village and Small Industries Sector will be developed

## 3.5 Goods and Service Tax (GST)

India has launched advanced tax reform by introducing Goods and Service Tax (GST). Prior to the introduction of GST, states used to determine their own tax rates for the produce of their states but now there would be the same rate for a product nationwide. GST is going to affect the bamboo sector as well.

The tax rate on a similar product produced from different raw materials are different. For
example, Bamboo Plywood and Mat Boards: Bamboo Boards are placed in the category of 18

percent bracket of tax, whereas the similar products are taxed at a variable rate. For example,
Particle Boards/ Bagasse Boards/ Rice Husk Boards etc. are taxed at 12 percent while Plywood,
veneered panels and similar laminated wood are taxed at the rate of 28 percent. Handicraft items
which were exempted from tax previously are now taxed at the rate of 12 percent[13]. The tax rates
for different Bamboo products along with Harmonized System of Nomenclature (HSN) codes is
presented in Table 6.

Table 6: GST for different Bamboo products

| Description | HSN Code | GST Rate (%) |
|---|---|---|
| Agarbatti | 33074100 | 5 |
| Agarbatti sticks | 14011000 | 5 |
| Assembled flooring panels of bamboo | 44187200 | 18 |
| Bamboo basketwork | 46021100 | 12 |
| Bamboo charcoal | 44021010 | Nil |
| Bamboo fibre (100 percent) | 55101110 | 12 |
| Bamboo furniture | 94038100 | 12 |
| Bamboo mats, screens | 46012100 | 12 |
| Bamboo parquet flooring | 44092100 | 18 |
| Bamboo plywood, veneered panels, laminated products | 44121000 | 18 |
| Bamboo pulp | 47063000 | 12 |
| Bamboo Shoots | 20059100 | 12 |
| Builders' joinery and carpentry of bamboo | 44189000 | 18 |
| Clothes hangers | 44211000 | 12 |
| Panel boards, tiles | 68080000 | 18 |
| Seats of bamboo | 94015000 | 18 |
| Spools, cops, bobbins, sewing thread reels and the like, of turned bamboo | | |
| • Articles of densified wood | 44219070 | 12 |
| • For cotton machinery | 44219011 | 12 |
| • Match splints | 44219030 | 12 |
| • Paving blocks | 44219020 | 18 |
| • Pencil slats | 44219040 | 12 |
| • Parts of domestic decorative articles used as tableware and kitchenware | 44219060 | 12 |
| Trays, dishes, plates, cups and the like, of paper and paperboard of bamboo | 48236100 | 18 |
| Viscose bamboo fibre | 55041000 | 18 |

## 3.6 Challenges

**Non-regulatory impediments:** Non-regulatory problems have also played a role in stifling the potential of bamboo resource. These include high transport costs associated with agro-forestry and non-uniform rules with regard to inter-state transport, and with

problems of institutional support like lack of incentivisation, lack of economic viability, lack of awareness, that cumulatively hamper resource utilization for livelihoods.

- **Unhindered imports:** A large proportion of *Agarbatti* sticks (250 trucks) are being imported from Vietnam and China. Whereas, in India, there are about 10,000 *agarbatti* manufacturing units including tiny, small and medium, and 200 well-established ones, with the north eastern states fulfilling 90 percent of the raw sticks market demand in India (Kamesh Salam, 2014[14]).

- **Obtaining forest permit and transit pass is a cumbersome process:** The removal of bamboo, as a forest produce is controlled under the prevailing rules and regulations of the Forest Department from the source of origin to the centre of its consumption. The restrictions on trade and transit of bamboo were the biggest impediment to the bamboo-based industry and applications. With the amendment of the Indian Forest Act, it is expected that this issue will get resolved. Irregular supply of bamboo is also affecting the development of bamboo in India. (APN and DA, undated[15]).

- **Convergence was missing:** The different national level legislations have authorized different ministries to play a role in bamboo regulations. The IFA is administered by the Ministry of Environment, Forests and Climate Change (MoEFCC), the FRA by the Ministry of Tribal Affairs (MoTA), while the National Bamboo Mission is under the Ministry of Agriculture and Farmers' Welfare (MoAFW). The lack of a single regulatory body to oversee the growth of the bamboo industry has led to the various departments and ministries working without any coordination making bamboo development difficult (Kamesh Salam, 2014). To address this issue, North Eastern Bamboo Development Council has been established in 2017.

- **Bambo export:** There is potential for export of bamboo to Bangladesh from NER, but since it is not allowed through land route, the exporters route the material through Kolkata incurring extra expenditure and making exports non-competitive.

In India, ambiguous legislation and regulatory mechanism for bamboo harvest and trade has inhibited the growth of bamboo-based industries. Thus, the need of the hour is an efficient regulatory institution which will enable markets to grow in a sustainable manner. Combined with the challenges posed by the regulatory system, there are challenges at each stage of the bamboo value chain viz. production, transformation and consumption. Further, with the implementation of GST, the cost of the bamboo products is now more than the available alternatives. This will constrain the expansion of the Bamboo sector.