



WRI INDIA

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**CRB**

CENTRE for  
RESPONSIBLE  
BUSINESS  
Enabling Change for Impact



# REGIONAL CONSULTATION TO EXPLORE THE FEASIBILITY OF A VALUE CHAIN ALLIANCE FOR BAMBOO IN NORTHEAST INDIA

SUMMARY OF PROCEEDINGS  
HELD ON 8 JUNE, 2022 | GUWAHATI

*Disclaimer: The contents of this document reflect the work and/or views of the conference/workshop participants and do not necessarily reflect the views of WRI India and other conference partners.*

## BACKGROUND

World Resources Institute India (WRI India) and Center for Responsible Business (CRB) conducted a regional stakeholder consultation in Guwahati, Assam to explore the feasibility of forming a value chain alliance for Bamboo in the Northeast on 8<sup>th</sup> June 2022 at the TERI Conference Hall, Guwahati. Particularly, the Northeast region in India is known for its rich bamboo growing areas which presents a high scope for fostering bamboo economy in the region. Looking at this potential, this regional consultation aimed to bring different stakeholders together who are working on demand, supply and policy aspects of bamboo value chains in the Northeast and identify key barriers and enablers for this sector. This consultation saw participation from several organizations including policy experts, academia, civil society, architects, bamboo-based entrepreneurs and suppliers. A complete list of participants is in Annexure-II.

## OPENING AND INTRODUCTION

The consultation began with a round of introductions by all the participants and context setting by Dr. Ruchika Singh, Director, Sustainable Landscapes and Restoration, WRI India, and Mr. Rijit Sengupta, CEO, CRB. They highlighted the significance of livelihood generation through bamboo-based value chains and the role of the private sector in spearheading this restoration economy in the Northeast. With this background, they outlined the relevance of this regional consultation aimed at connecting various stakeholders involved in the bamboo value chain and identifying various barriers and enablers for strengthening it in the Northeast region.



Image: Participants during the introduction session

Next, Siddharth Edake, Senior Manager, Sustainable Landscapes and Restoration, WRI India presented an overview of the potential of bamboo-based economy in the Northeast and the relevance of this initiative within the larger context of global and national climate change and sustainable development goals. His presentation was followed by a brief round of discussions setting a background for the breakout sessions. During these discussions, Dimpi Bora, IFS also shared her remarks on the usage and uptake of bamboo in the region based on her experience as CEO of the Assam State Bamboo Mission.





Image: Dimpi Bora, IFS providing her remarks on bamboo uptake and usage

Following this, all the participants were organized into three breakout groups – **supply, demand and policy**. A set of pre-designed open-ended questions were shared with all three groups (Annexure-III), which guided the discussions within each group on the major barriers, enablers and good practices. Insights from these discussions were captured by each group and were presented in the plenary session. A summary of key barriers and enablers in bamboo value chain that emerged from the breakout group discussions are presented below:

### **Breakout Group I: Supply-side**

#### **Key barriers**

- Bamboo-based industries are often dealt as an unorganized sector in the region and bamboo is primarily considered as the preferred material for lower-income groups. While bamboo is available in abundance, high transportation cost makes its procurement expensive in the region and the local industry is often located far from the sourcing areas. Bamboo is still considered as timber for poor people, which prevents mainstreaming it into high-end construction activities.
- Accessing quality plantation material is a challenge for smallholder farmers who do not have access to financial incentives for buying quality planting material. Returns on investments for bamboo plantation is also an emerging challenge.
- Policy interventions that bolster market linkages and create price rationalization have been limited. Coupled with a lack of certification/standardization, it creates a deterrent and risk for small sellers and buyers.
- Treatment of Bamboo to make it construction-ready, for instance, composites, is an intensive chemical-laden process that causes pollution
- Existing bamboo-based industries are focused around agarbatti making, bioethanol, handicraft and textiles.

#### **Key enablers**

- Bamboo as a construction material in buildings can equip us against climate change with energy-efficient buildings that can provide regulated temperatures.
- Need for enhanced awareness generation activities for popularizing commercial use of bamboo in construction activities presenting bamboo as a material not only for lower-income groups but for mainstream boutique housing.
- Enhanced awareness and capacity building on harvesting timelines and improved silvicultural practices can improve the quality of bamboo supplied, thus, raising its price in the market.

- Learnings from existing bamboo-based industries could be leveraged for construction-based industries.

### **Breakout Group II: Demand-side**

#### **Unorganized Supply Chain and Value Chain acts as a barrier**

- The demand side group discovered that mid and high-level processors of Bamboo receive low value and low-quality bamboo supply, requiring extra treatment. This treatment is not done at the primary producer or village aggregator level partially because of lack of knowledge and partially because there is no structured price incentive. There is a need of providing training on Bamboo Husbandry.
- The current procurement style is based on “scouting for bamboo.” This makes availability of material as the first priority, while sustainability becomes secondary.
- To enable easy procurement, there is a need to move beyond scouting and ensure streamlined supply of bamboo.
- There is also a massive challenge of fragmentation in supply and value chain. There is no database on producers, suppliers and value adding stakeholders. This acts as a barrier to estimate a more realistic stock in hand, under process and ready for supply for next level of trade. Foundation for MSMEs shared that they are working on an app that will bring all the producers with buyers/suppliers on the same virtual platform to facilitate swift, organized and transparent business around Bamboo.

#### **Organizing Supply and Value Chain can act as a big Enabler**

- The first phase of bamboo mission did not consider designing the modality around the constitution of Farmer producer companies (FPCs). This must be taken up in the next phase, as FPCs can play a critical role in ensuring Quality Planting Material as well as processing.
- Well-trained FPOs can enable handling and ensuring specified volumes of raw material/ semi-processed product, with specified attributes demanded by subsequent node in the value chain.
- There is also a requirement of arranging other subsequent nodes in a formal or semi formal value chain arrangement under Bamboo trade industry. This will ensure specialization of jobs, reduction in wastage and correct demand specification placement.

#### **Government Guidance in multiple aspects can act as an enabler**

- It was suggested that the Central government release a schedule of rates as well as guidelines to set minimum limits of bamboo usage and to enhance the role of State Bamboo Missions.
- As an example, for certified bamboo composite, it was suggested that Government could be an ideal customer to kick start its demand in the market.

#### **Awareness and skill development as an enabler**

- Participants mentioned that training of FPOs and equipping them with necessary skills can act as an enabler.
- Proper training of architects will help assure customers of the structural characteristics of bamboo.
- Awareness is being raised and needs to be further shared taking demonstratable examples for example being developed a new terminal in Bengaluru where bamboo is being used as a primary material.
- The World Green Building Council was mentioned in relation to standards, to make suitable building code adjustment to create space for Bamboo.

### **Discussion on Models/ Good practice examples**

- The group also touched upon models, such as the Land-lease model with the village commons, inspired partly in certain cases by their own enterprises.
- Some models mentioned are contract-based model between Dalmia Cement and King Industries; land-lease model between IKEA foundation, and King industries wherein IKEA pre-selected the species of bamboo to be used in chopping boards. There is an in-house purchasing policy as well as IKEA's own sustainability framework that is to be adhered to under the 10-year buyback plan.

### **Breakout Group III: Policy-side**

#### **Major barriers**

- **Stock/data:** The discussion kickstarted with the State Bamboo Mission's functioning on data procurement. The participants highlighted that the mission did not keep a track of the status and trends of the species varieties and expanse of bamboo in the state. Therefore, there is a lack of data on resource mapping. There is also lesser productivity from the money spent under the mission and no exclusive mention of construction in the mission.
- **Bamboo-focused policies and financial incentives:** There is no targeted policy on bamboo, only a few incentives exist at the industry-level such as the New industrial policies and other concessions for the Northeast. The National Bamboo Mission also provides 60% subsidy for bamboo plantation for which the other 40% should include 10% investment by the project proponent and 30% loan (to be paid by proponent). However, such schemes are not popularly availed due to high cost of first investment which is often difficult to arrange for Small and Medium Enterprises (SMEs).
- **Technology:** Most processing technologies (from China) are not applicable to the Indian bamboo variety, for example there is no testing of tensile strength. The sector requires further applied research for the selection of appropriate technology.

#### **Key enablers**

- **Skill development and education:** There are not many architects working on bamboo-based construction models. Construction from sustainable material must be a part of the academic curriculum in architecture and civil engineering courses.
- **Indigenous and local knowledge:** Indigenous and local knowledge is key and highly relevant for the construction of bamboo-based buildings. This knowledge has been used for ages and creates highly durable structures which last for years. This knowledge needs to be tapped and intertwined with modern techniques.
- **Mainstreaming in construction through species type:** There is a need to focus on construction-specific species, even though the current focus is mostly on agarbatti making. Almost 80% of bamboo in the forested area is not fit for construction purposes. Construction species must be a part of annual working action plan of the bamboo mission. This exercise should also categorize species relevant for construction as this identification will help meet the industrial needs.
- **Public procurement:** We need policies that encourage bamboo use for construction or make it mandatory for CPWD/State PWD to use bamboo for construction.
- **Standard setting:** Currently, there is no BIS handbook/policy on use and design of bamboo, and structural testing guidelines or specifications. Such a standard could mainstream bamboo use in construction.

- **Umbrella policy/institution:** There needs to be an umbrella organization dealing with bamboo related issues or enhanced synergies among different govt departments working on bamboo policies.

### Good practices, opportunities and examples

- **Opportunities highlighted:** Mainstream or at least retain bamboo use in rural housing, eco-tourism, disaster-resilient houses built with bamboo, technical training, knowledge and awareness on bamboo.
- **Examples cited:** Contract farming for an agreed time through Farmer Producer Organizations (FPOs) or Non-government Organizations (NGOs,) which are responsible for procuring bamboo produce from the community or individual cultivators and selling it. This will not only help in making the sector organized but also earn carbon credits.

### Key actors of change

- Key stakeholders/ influencers/ change agents recognized were: State bamboo mission, Ministry of Agriculture and Farmers Welfare, Niti Aayog, Ministry of Development of North Eastern Region (MDoNER), civil society, academia, forest departments, training and technology institutions.

## WAY FORWARD

The workshop participants welcomed key issues discussed at the consultation and acknowledged the need for organizing this sector by developing a value chain alliance that can bring supply, demand, and policy actors together for using bamboo in construction. They also indicated interest in future dialogues. Several barriers in policy, demand, and supply-side were also identified. A possible point for initiating could be to create more communication, awareness, and dialogues around critical issues. We recognize that several key stakeholders could not participate in this consultation. Hence, to incorporate inputs from a broader group, we would share the proceedings with this broader list of stakeholders for their inputs and discuss emerging results through dialogues with them.



Image: Participants at the consultation

## ANNEX I: MEETING AGENDA

**When:** June 8, 2022

**Time:** 1000 hrs. -1300 hrs. IST (Ends with Lunch)

**Where:** Conference Hall, The Energy & Resources Institute (TERI), Mahapurush Madhabdev Path, Chachal, Six Mile, Guwahati, Assam

| TIMING             | DESCRIPTION  | SPEAKERS/FACILITATORS   |
|--------------------|--|---|
| 09:45 -10:15 hrs.  | <b>Tea and Registration</b>  |   |
| 10:15 - 10:45 hrs. | <b>Introduction and welcome</b><br><br><b>Opening Presentation and Context Setting</b> <ul style="list-style-type: none"> <li>• About the project</li> <li>• Objectives of the workshop</li> <li>• Expectations</li> </ul> <b>Q&amp;A</b>                                    | Ruchika Singh, WRI India (3mins) and Rijit Sengupta, CRB (3 mins)<br><br>Siddharth Edake (WRI India)<br>Himangana Gupta (WRI India)<br>Aditya Petwal (CRB)<br>(15mins)<br><br>(10 mins) |
| 10:45 - 11:00 hrs. | <b>Introduction to the Breakouts</b>   |   |
| 11:00 - 12:15 hrs. | <b>Breakout sessions (Stakeholders may select their group)</b> <ul style="list-style-type: none"> <li>• Break out group 1: Demand side stakeholders</li> <li>• Break out group 2: Supply side stakeholders</li> <li>• Break out group 3: Policy side stakeholders</li> </ul> | WRI India & CRB Facilitators  |
| 12:15 - 12:45 hrs. | <b>Plenary session - Presentation by each group</b>  | WRI India & CRB Facilitators  |
| 12:45 - 13:00 hrs. | <b>Closing Remarks and Way Forward</b>   | Ruchika Singh and Rijit Sengupta  |
| 13:00 - 14:00 hrs. | <b>Networking Lunch</b>  |   |

## ANNEX II: LIST OF PARTICIPANTS

| S. NO | FIRST NAME      | SECOND NAME   | ORGANISATION                                   | EMAIL  |
|-------|-----------------|---------------|--|--|
| 1.    | Prof Lal Bihari | Singha        | Manipur University                             | <a href="mailto:labihari@manipuruniv.ac.in">labihari@manipuruniv.ac.in</a>                 |
| 2.    | Pulak           | Kr Mandal     | North East Cane and Bamboo Development Council | <a href="mailto:cbtcassam@gmail.com">cbtcassam@gmail.com</a>                               |
| 3.    | Amitabh         | Borthakur     | We Care foundation                             | <a href="mailto:amitabhborthakur@gmail.com">amitabhborthakur@gmail.com</a>                 |
| 4.    | Laldinliana     | Chhangte      | King Industries                                | <a href="mailto:kingdina7@yahoo.co.in">kingdina7@yahoo.co.in</a>                           |
| 5.    | Aadarsh         | Mohandas      | Preferred by Nature                            | <a href="mailto:amohandas@nepcon.org">amohandas@nepcon.org</a>                             |
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| 7.    | Dr. Sayan       | Ghosh         | Rainforest Alliance                            | <a href="mailto:sghosh@ra.org">sghosh@ra.org</a>   |
| 8.    | Ghani           | Zaman         | TIMPACK Pvt Ltd.                               | <a href="mailto:ghanizaman@gmail.com">ghanizaman@gmail.com</a>                             |
| 9.    | Satyam          | Bordoloi      | RFRI, Jorhat                                   | <a href="mailto:satyamrfri@gmail.com">satyamrfri@gmail.com</a>                             |
| 10.   | Kangkan         | Kakati        | ICCo, Guwahati                                 | <a href="mailto:k.kakati@iccoindia.org">k.kakati@iccoindia.org</a>                         |
| 11.   | Suchibrata      | Bhattacharyya | ICCo, Guwahati                                 | <a href="mailto:suchibrata.bhattacharyya@gmail.com">suchibrata.bhattacharyya@gmail.com</a> |
| 12.   | Bijumoni        | Roy           | Greensward Design Studio                       | <a href="mailto:bijumoni96@gmail.com">bijumoni96@gmail.com</a>                             |
| 13.   | Mukut           | Sarma         | Bamboo World                                   | <a href="mailto:mukutsarma1996@gmail.com">mukutsarma1996@gmail.com</a>                     |
| 14.   | Iqbal           | Ahmed         | Foundation for MSME clusters                   | <a href="mailto:iqbal@msmefoundation.org">iqbal@msmefoundation.org</a>                     |
| 15.   | Saksham         | Pal           | Foundation for MSME clusters                   | <a href="mailto:saksham@msmefoundation.org">saksham@msmefoundation.org</a>                 |
| 16.   | Priyatanu       | Baruah        | Engineered bamboo furniture                    | <a href="mailto:priyatanubaruah@gmail.com">priyatanubaruah@gmail.com</a>                   |
| 17.   | Amba            | Jamir         | International Mountain Initiative              | <a href="mailto:ambajamir@gmail.com">ambajamir@gmail.com</a>                               |
| 18.   | Ambarnil        | Bhardwaj      | Balipara foundation/ Bamboo Civilization       | <a href="mailto:ambarnilbhardwaj@gms.net.in">ambarnilbhardwaj@gms.net.in</a>               |
| 19.   | Dimpi           | Bora          | Ex CEO, Assam Bamboo Mission                   | <a href="mailto:dimp.bora@gmail.com">dimp.bora@gmail.com</a>                               |
| 20.   | Dhritiman       | Bharadwaj     | State Bamboo Development Agency                | <a href="mailto:sbda.assam@gmail.com">sbda.assam@gmail.com</a>                             |
| 21.   | Dr. Dipankar    | Saharia       | TERI North-Eastern Regional Centre             | <a href="mailto:dipankar@teri.res.in">dipankar@teri.res.in</a>                             |
| 22.   | Naba            | Kr. Goswami   | TERI North-Eastern Regional Centre             | <a href="mailto:nabakg@teri.res.in">nabakg@teri.res.in</a>                                 |
| 23.   | Mridul          | Goenka        | Pragjyoti Biofuels                             | <a href="mailto:bpc@pragjyoti.com">bpc@pragjyoti.com</a>                                   |
| 24.   | Rijit           | Sengupta      | CRB  | <a href="mailto:rijit@c4rb.in">rijit@c4rb.in</a>   |
| 25.   | Dr. Ruchika     | Singh         | WRI India                                      | <a href="mailto:ruchika.singh@wri.org">ruchika.singh@wri.org</a>                           |
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## ANNEX III: QUESTIONS FOR BREAKOUT GROUP DISCUSSIONS

### Questions for Demand-side stakeholders

- What is the status and trend of bamboo use for construction and related sectors in the Northeast? What are the key aspects to consider?
- How feasible is the scalability of bamboo in construction sector, specifically in which segment?
- What are some socio-economic and environmental sustainability concerns with Bamboo?
- Where is the demand coming from already or likely in future?
- What are the key demand side barriers (technology, market, capacity, policy) that can enable a transition towards using bamboo as an alternative source of material for construction in building/ housing sector?
- What are the potential species of bamboo that could be better for construction? Where can they be sourced from?
- Who are the key stakeholders for enabling mainstreaming of alternate material for construction?
- How important do you consider the validation/ certification / ecolabelling of bamboo to use in the construction operations? Is thought of having responsible sourcing policy common in the construction sector?
- Is (certified) sustainable Bamboo being demanded or likely to be in future?
- Examples of business models that can mobilize demand for sustainably sourced bamboo for construction.

### Questions for Supply-side stakeholders

- Who are the key actors in the supply chain segment, including Producers, Processors, Suppliers and Buyers?
- How is the bamboo supply value chain organized in the Northeast?
- What are some of the Production Systems or Models in practice in the region?
- What are the key supply side barriers (technology, market, capacity, policy) that can enable a transition towards using bamboo as an alternative source of material for construction in building/housing sector?
- Do we have enough technologies and their propagation around bamboo commodities ready to scale up at commercial level?
- Examples of business models that can mobilize demand for sustainably sourced bamboo for construction.
- Summarize or map critical actors, issues and challenges in the entire bamboo value chain.

### Questions for Policy-side stakeholders

- What are the key policy and regulatory issues to consider in scaling up bamboo-based construction in the Northeast?

- What are the key policy barriers or enabling conditions that could be leveraged?
- Who are the key stakeholders for enabling mainstreaming of alternate material for construction?
- What are the key incentives that are already being provided in the Northeast region to scale up bamboo-based economy? Can you provide some examples?
- What are the successful models or existing consortiums or value chains, their role, and key factors that led to their success?
- Examples of business models that can mobilize demand for sustainably sourced wood for construction.
- Summarize or map critical actors, issues, and challenges in the entire bamboo value chain. How feasible is it to use wood for construction in the Indian context? What are the key aspects to consider?