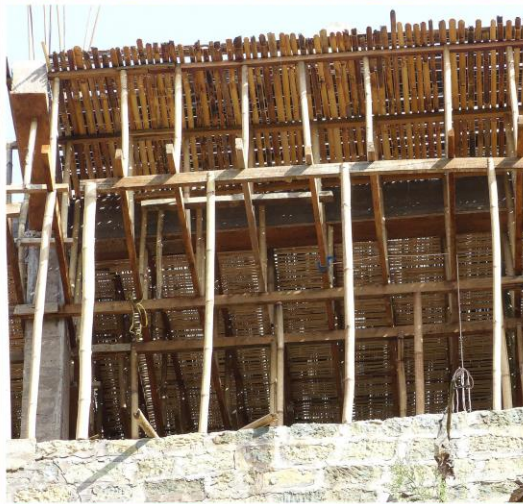




WRI INDIA

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CENTRE for  
RESPONSIBLE  
BUSINESS  
Enabling Change for Impact



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

SUMMARY OF PROCEEDINGS  
HELD ON 07 JULY 2022 | BHOPAL, MADHYA PRADESH

*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 Bhopal, Madhya Pradesh (MP) to explore the feasibility of forming a value chain alliance for Bamboo in Central India on 7<sup>th</sup> July 2022 at Jehan Numa Palace Hotel, Bhopal. This region has a high potential for developing organized supply chains as MP has the maximum bamboo-bearing area of 18,400 sq.km and along with Maharashtra, Odisha and Chhattisgarh, the region constitutes about 36% of the total bamboo area in India. Looking at this potential, the regional consultation aimed at bringing together different stakeholders working on demand, supply and policy aspects of bamboo value chains in Central India and identifying key barriers and enablers for this sector. This was the second regional consultation on bamboo value-chain in continuation to the first one held on 8<sup>th</sup> June in Guwahati, Assam. This multistakeholder dialogue in Bhopal saw participation from diverse stakeholders representing government officials, architects, academicians, entrepreneurs, and suppliers working in the bamboo value chains. The detailed agenda for this consultation is provided in Annexure I with a complete list of participants presented in Annexure-II. Annexure IV presents a few photographs of the working group.

## OPENING AND DISCUSSION

The consultation began with context setting by Dr. Ruchika Singh, Director, Sustainable Landscapes and Restoration, WRI India, and Mr. Rijit Sengupta, CEO, CRB. They highlighted the significance of creating bamboo-based value chains in Central India, that can help foster a restoration economy based on bamboo, alongside livelihoods enhancement. Following this, Mr. R. Parasuram, Senior Fellow WRI, and former Chief Secretary MP, in his welcome address, presented a holistic picture of bamboo availability from the 1990s to now, the changes witnessed so far, and what can be envisioned for the future, and how a value chain alliance can find answers to many unresolved concerns of the bamboo sector.

Thereafter, in his keynote address, Dr. U.K. Subuddhi, State Mission Director, National Bamboo Mission, spoke about the various initiatives underway within MP to upscale the use of bamboo. He emphasized on 'local to global' vision for bamboo, wherein good models and implementation at the local level can drive up the demand. Further, Dr. Himangana Gupta, Manager, WRI India presented an overview of the potential of bamboo-based economy in Central India and the relevance of this initiative within the larger context of combatting climate change at the global and national levels and in the attainment of sustainable development goals.

Participants while introducing themselves and their organizations, spoke of their involvement and activities in the bamboo sector. This set the tone for the breakout sessions, giving an opportunity to the participants to explore in greater depth issues and challenges that confront the various aspects of supply, demand, and policies influencing the sector.

For the breakout sessions, participants split into three groups – namely **supply, demand, and policy**. A set of pre-designed open-ended questions were shared with the three groups (Annexure-III) to facilitate the discussion on major barriers, as well as enablers and good practices. Brief presentations were made by group representatives at the plenary session, wherein members also responded to further queries raised by others. A summary of key barriers and enablers in the bamboo value chain identified at the breakout group discussions is presented below:

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

### **Key barriers**

Some common and some very different barriers impact the risk-taking ability of small and large farmers, adversely impacting their respective willingness and risk-taking ability in taking up bamboo cultivation. To better understand these barriers, qualitative and quantitative dimensions of demand from small and large-scale players, and those of entrepreneurs need to be studied and analyzed in greater depth. It was agreed by most participants that there is a high demand espoused by designers, architects, and end-users for treated bamboo in the construction sector. However, these are not yet matched by the same level of willingness on the part of the farmers to take up the production of treated/high-quality bamboo. There is a greater interest at the production end on supplying bamboo for charcoal, and bamboo-based viscose, with a comparatively less inclination on the cultivation of species used for building material construction.

### **Key enablers**

The key enablers highlighted by the participants mainly focused on – capacity building and training, creating enabling market environment, establishing central facilities and standardization. Participants suggested that establishing a Centre of Excellence focusing on the entire bamboo value chain will help in mainstreaming bamboo use. However, the initial emphasis must be on expanding the cultivation of species suitable for the construction sector. To start with, we need to build upon the existing bamboo value chain and plug additional infrastructure and other requirements into the current value chain as needed.

For promoting bamboo cultivation, it is important to offer farmers a Minimum Support Price for bamboo. This can be supported by a Bamboo mandi (onsite mandi as well as an e-mandi) where sellers find buyers for their produce & vice versa. This will also build capacities of the farmers as they will eventually learn about different practices and skills from fellow farmers. Certain use case examples were mentioned such as Hapur Mandi which is a major trading hub, and it was suggested to create one such hub for bamboo and its respective stakeholders as well.

Next important step would be standardization for high-value products. This requires customization of research and development at each node, and a streamlined policy to organize the supply-side, focusing on both small and large farmers. Developing a handbook as part of training and capacity building on the technology will also help budding entrepreneurs in this field. All this points towards mainstreaming bamboo while ensuring functionality, availability and cost-effectiveness.

### **Models in use**

Participants talked about certain successful models in terms of procurement that were mentioned. These included the involvement of Farmer Producer Organizations (FPOs) – the case of National Agricultural Cooperative Marketing Federation of India (NAFED) engagement for creation of FPOs via the Dhara Trust. Another model discussed was that of the Joint Forest Management Committee (JFMC) micro plan development approach that could help supply-side management.

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

### **Key barriers**

Major barriers identified during discussions include lack of awareness, insufficient supply, and very few skilled labor and supply traders in MP. A very few people work on bamboo and thus, mainstreaming it is a challenge. This can be resolved through large-scale awareness generation. Sustainable construction material is also not very well promoted so the market is not driven towards new materials for construction on a larger scale.

The supply-side is not well-organized which acts as another major barrier. The money spent under

the National Bamboo Mission is mostly going into dense bamboo plantations which are not being sold to the industry. Therefore, farmers are not earning from it. Also, high density bamboo is good only for paper mill, or biomass. At least 50 feet gap is needed for bamboo for construction purposes. But farmers are growing without apt knowledge, leading to low-quality produce.

Farmers usually earn INR 5,000-6,000 for one tonne of good quality bamboo inclusive of transport and harvesting charges. Nearly 40-60% is spent on transportation, so the net earnings for farmers remain quite low. Procurement of bamboo from the North-East region costs 150% extra for transportation. Due to this high price, good quality bamboo is difficult to procure. Single poles are sold at a higher price and farmers earn INR 16,000-20,000 per tonne when sold separately. Due to this, farmers prefer growing lesser quantity and earn the same amount by selling them separately. Skilled harvesters are also very few. This affects demand sufficiency.

In 2012, the furniture market demand stood at INR 26,000 crore with marginal contribution from bamboo. Even if 1% of this demand is to be fulfilled by bamboo, there is not enough supply for that. As compared to the North-East, the procedure for procurement is more complicated in MP, which explains the large amounts of import from the North-East, where traders are able to supply raw material faster. Within MP, supply is not enough but production capacity is high. Therefore, it is important to create demand only in bamboo-rich areas.

On the capacities side, architects operate in a niche, and most architects in the mainstream are not aware of the technicalities of bamboo-based construction. Around 98% of the bamboo workers are traditional workers lacking industrial training to meet current demands. Traditional knowledge must be further mainstreamed.

### **Key enablers**

The demand-side participants highlighted that the highest opportunity lies in construction of eco-tourism (eco-lodges), polyhouses, penthouses and farmhouses due to lesser number of permissions required to construct with bamboo in these kinds of properties, as it is a sustainable structure and does not fall into the "pucca" category. Further, awareness around bamboo structures is a huge barrier, hence the knowledge of bamboo needs to be 'normalized'. It is currently segmented, and most people are unaware about its use in the construction sector. Large scale campaigns can promote bamboo use. Awareness among farmers and bamboo growers is also needed on the type of species that can grow in a particular region to provide them with firsthand, accurate and reliable information. This focused production based on the region can also help in regional development of products as well as markets.

To create more skilled labor, there is a need to introduce an Industrial Training Institute dedicated to bamboo sector training. To further incentivize bamboo use in construction, the public sector needs to come up with model houses, such as buildings for the tourism sector and public buildings. This will help build more confidence among the consumers.

One important enabler identified by the participants was that agroforestry model supports bamboo cultivation instead of many other economic species that need plantation forestry. Therefore, it is good for ensuring food security while promoting sustainable construction material such as bamboo. However, grading and certification of bamboo will be needed for large scale take-up of bamboo in the construction sector. Currently, it faces a social acceptability challenge, and thus, its newer versions, strength and quality needs to be demonstrated in both urban and rural areas through newer stylish constructions.

Bamboo sequesters carbon faster than other agroforestry species and therefore, it is an important carbon sink as well. This carbon stays locked for 50-60 years when used as a construction material. Additionally, it saves energy as bamboo buildings lower the heat gain capacity reducing use of air conditioning in buildings. Bamboo can keep the temperature lower by 2-2.5 degrees as compared to a cement building. It is light weight, hence does not add weight to upper floors upon construction.

Thus, using bamboo as a part construction material is most appropriate, as compared to constructing the entire building with bamboo. This will also reduce construction costs. All that is needed is large scale promotion by strong stakeholders.

Different stakeholders from supply and demand need to come together including farmers, bamboo nurseries, and the industry to facilitate local markets for bamboo. Presently, farmers are unaware about where to sell, and buyers are not aware of where to buy. Nurseries can play a prime role in bamboo promotion as they provide direct access to farmers.

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

Best practices and models form the basis for any transformation in any sector. One such best practice highlighted during the discussion was management of bamboo wastage. Bamboo processing for products leads to 80% wastage. At a time when supply is already limited, this wastage further reduced production efficiency. **Bamboo Pecker** highlighted that they manage their wastage skillfully leading to zero wastage. They make a wide range of products for construction, furniture, craft, etc. and the bamboo wastage left later is powdered to be used in composites. Another example on a best practice related to marketing was a marketing website Greenbamb.in which connects suppliers with the buyers.

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

#### **Key Barriers**

The discussion began with flagging the issue of data procurement on bamboo resources in the state by the State Bamboo Mission (SBM). The participants highlighted that the mission does not have the capacity to generate a baseline data on the status, trends of bamboo varieties and expanse of bamboo in the state. Therefore, there is a lack of data on resource mapping. Further, it was also discussed that the data and information about stakeholders is also scattered. At the state level, various line departments are associated with the bamboo from its production and processing to its product stage. These include the departments of forest, agriculture, Micro, Small and Medium Enterprises (MSME), rural development, housing & urban development, skill development & entrepreneurship, and thus, the recommendations that have been suggested are keeping in mind this scenario. In this regard, a Bamboo Development Authority (BDA) has been mentioned, which will act on a national, state and district level. Currently, there is no BDA in MP. Policy makers also advised to reach out to the respective line departments with an approach 'make friends, not enemies of bamboo' and engage with them.

Presently, there is no focused policy on bamboo, no specified roles, and mandates for different departments with respect to bamboo or targets for monitoring the development in case of bamboo. In terms of incentives, there is a need to eliminate risk factors to maximize the use of bamboo.

#### **Key Enablers**

##### *Structural suggestions*

- **Skill development and education:** It was discussed that both industry and academia must keep in mind that courses corresponding to quality, design and marketing of bamboo need to be developed.
- **Outreach:** In terms of outreach, the participants suggested that SBM must provide timely advisory services for farmers through a robust communication network, thus ensuring access to information.

- **Monitoring & Evaluation:** There was a suggestion to develop a framework for bamboo evaluation which can include government-linked expertise. Further, it was stated that there is a need to consider bamboo from a value chain perspective and thereby adopt a micro-planning approach based on different phases of a value chain, that is production, processing and marketing. It was also suggested to integrate Forest Stewardship Council (FSC) certification at production level.

There needs to be an umbrella organization dealing with bamboo related issues for enhanced synergies among different government departments working on bamboo policies.

#### *Infrastructural interventions*

- With a functional infrastructure mechanism, the participants suggested that there should be a Common Facility Centre (CFC) for processing of bamboo. This CFC should integrate the dual delivery of skills benefitting the industry and production requirements to meet specialization, thus ensuring quality and design requirements. The method of micro planning was suggested to operationalize the CFC which should include all elements of a working plan. Such knowledge should be usable by the farmers.
- The group also shared an important suggestion to develop a Special Economic Zone for bamboo industry and production.
- Another recommendation was focused on setting up a state-based BDA or strengthen it further in case there is an existing one. This authority will act on a national, state and district level. Furthermore, a board development on a state basis should comprise industry, which will include academia, quality control and transfer of technology to ensure overall market readiness.

#### *Incentive-based interventions*

- It was discussed that there is a need to focus on farmers through incentives, as well as integration and convergence of the relevant government schemes such as Mahatma Gandhi National Rural Employment Guarantee Act, National Rural Livelihood Mission. The convergence should also occur in areas such as bamboo design, bamboo research and bamboo-based education and capacity building.
- Currently, GST on bamboo is 18% and it was suggested to reduce this percentage on bamboo and bamboo products to 5% or similar lower value.
- 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, which prevents mainstreaming it into high-end construction activities.
- While it 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.

## **WAY FORWARD**

Discussing the key issues, the workshop participants came forward with important suggestions and concerns that could be addressed by policymakers to further improve adoption of bamboo. They also 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, and emphasized the need for creating models and awareness. There is a high potential of developing a value chain alliance in this region and next steps will to be identify the interested and relevant stakeholders to take this step forward. More one-to-one consultations and site visits will be needed to finalize the needs and aims of such an alliance.

## ANNEX I: MEETING AGENDA

**When** : July 7, 2022

**Time** : 09:30 - 13:00 hrs IST (Followed by lunch)

**Where** : Convention Centre, Jehan Numa Palace Hotel, 157, Shyamla Hills Road, Shymala Hills, Bhopal

<b>Timing</b>	<b>Description</b>	<b>Speakers/Facilitators</b>
09:30 -10:00 hrs	<b>Tea and registration</b>	
10:00 - 10:40hrs	<p><b>Introduction</b></p> <p><b>Welcome Address</b></p> <p><b>Saliency of alliance for Central India in context of landscape restoration</b></p> <p><b>Context setting</b></p> <ul style="list-style-type: none"> <li>• About the project</li> <li>• Objectives of the regional consultation</li> <li>• Expectations</li> </ul> <p>Q&amp;A</p>	<p>Ruchika Singh, WRI India &amp; Rijit Sengupta, CRB</p> <p>Uttam Kumar Subuddhi, National Bamboo Mission</p> <p>R. Parasuram, Senior Fellow WRI India and Former Chief Secretary, GoMP</p> <p>Siddharth Edake, WRI India Himangana Gupta WRI India Aditya Petwal, CRB</p>
10:40 - 10:50 hrs	<b>Introduction to the Breakouts</b>	
10:50 - 12:15 hrs	<p><b>Breakout sessions</b> <b>(Stakeholders may select their group)</b></p> <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, WRI India and Rijit Sengupta, CRB
13:00 - 14:00	<b>Networking Lunch</b>	

## ANNEX II: LIST OF PARTICIPANTS

S. No	FIRST NAME	SECOND NAME	ORGANISATION	EMAIL
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## ANNEX III: QUESTIONS FOR BREAKOUT GROUP DISCUSSIONS

### Questions for demand-side stakeholders

1. What is the status and trend of bamboo use for construction and related sectors in Central India? What are the key aspects to consider?
  2. How feasible is the scalability of bamboo in construction sector, specifically in which segment?
  3. Is there demand from the eco-tourism sector, especially for eco-lodges, and boutique housing or is it likely in the future?
  4. What are the key demand-side barriers (technology, market, capacity, policy) towards using bamboo as an alternative source of material for construction in building/ housing sector?
  5. Who are the key stakeholders in enabling mainstreaming of alternate materials for construction?
  6. What is the volume of bamboo being used? Where is it sourced from (within or outside Central India)?
  7. How important do you consider the validation/ certification / ecolabelling of bamboo to use in the construction operations? Is thought of having a responsible sourcing policy common in the construction sector?
  8. Is (certified) sustainable Bamboo being demanded or likely to be in future?
  9. Examples of business models that can mobilize demand for sustainably sourced bamboo for construction.
- 
1. मध्य भारत में निर्माण और संबंधित क्षेत्रों के लिए बांस के उपयोग की स्थिति और प्रवृत्ति क्या है? विचार करने के लिए प्रमुख पहलू क्या हैं?
  2. निर्माण क्षेत्र में, विशेष रूप से किस खंड में बांस की मापनीयता कितनी व्यवहार्य है?
  3. क्या ईको-टूरिज्म सेक्टर से विशेष रूप से इको-लॉज और बुटीक हाउसिंग की मांग है या भविष्य में इसकी संभावना है?
  4. आवास क्षेत्र में निर्माण सामग्री के वैकल्पिक स्रोत के रूप में बांस का उपयोग करने की दिशा में प्रमुख मांग-पक्ष बाधाएं (प्रौद्योगिकी, बाजार, क्षमता, नीति) क्या हैं?
  5. निर्माण के लिए वैकल्पिक सामग्री को मुख्यधारा में लाने में प्रमुख हितधारक कौन हैं?
  6. उपयोग किए जा रहे बांस की मात्रा क्या है? यह कहाँ से प्राप्त किया जाता है (मध्य भारत के भीतर या बाहर)?
  7. आप निर्माण कार्यों में उपयोग के लिए बांस के सत्यापन/प्रमाणन/इको-लेबलिंग को कितना महत्वपूर्ण मानते हैं? क्या निर्माण क्षेत्र में एक जिम्मेदार सोर्सिंग नीति होने के बारे में सोचा गया है?
  8. क्या (प्रमाणित) टिकाऊ बांस की मांग की जा रही है या भविष्य में होने की संभावना है?
  9. व्यवसाय मॉडल के उदाहरण दिजिये जो निर्माण के लिए स्थायी रूप से सोर्स किए गए बांस की मांग को बढ़ा सकते हैं।

### Questions for supply-side stakeholders

1. Who are the key actors in the supply chain segment, including Producers, Processors, Suppliers and Buyers?
2. How is the bamboo supply value chain organised in Central India?
3. What are some socio-economic and environmental sustainability concerns with Bamboo?
4. What are some of the Production Systems or Models in practice in the region?
5. What are the potential species of bamboo grown in Central India that could be better for construction?
6. What are the key supply side barriers (technology, market, capacity, policy) towards using bamboo as an alternative source of material for construction in building/housing sector?
7. Do we have enough technologies and their propagation around bamboo commodities ready to scale up at commercial level?
8. Examples of business models that can mobilize demand for sustainably sourced bamboo for construction.

1. निर्माता, प्रोसेसर, आपूर्तिकर्ता और खरीदार सहित आपूर्ति श्रृंखला खंड में प्रमुख अभिनेता कौन हैं?
2. मध्य भारत में बांस आपूर्ति श्रृंखला कैसे व्यवस्थित है?
3. बांस के साथ कुछ सामाजिक-आर्थिक और पर्यावरणीय स्थिरता संबंधी चिंताएं क्या हैं?
4. इस क्षेत्र में कोन्सि उत्पादन प्रणालियाँ या मॉडल चलन में हैं?
5. मध्य भारत में उगाई जाने वाली बांस की संभावित प्रजातियां कौन सी हैं जो निर्माण के लिए बेहतर हो सकती हैं?
6. आवास क्षेत्र में निर्माण के लिए सामग्री के वैकल्पिक स्रोत के रूप में बांस का उपयोग करने की दिशा में प्रमुख आपूर्ति पक्ष बाधाएं (प्रौद्योगिकी, बाजार, क्षमता, नीति) क्या हैं?
7. बांस की मार्केटिंग के लिए क्या हमारे पास काफ़ी टेक्नोलॉजी है? क्या ऐसी टेक्नोलॉजी को बढ़ावा दिया जा रहा है?
8. व्यवसाय मॉडल के उदाहरण दिजिये जो निर्माण के लिए मांग को बढ़ा सकते हैं।

### Questions for policy-side stakeholders

1. What are the key policy and regulatory issues to consider in scaling up bamboo-based construction in Central India?
2. What are the key policy barriers or enabling conditions that could be leveraged?
3. Who are the key stakeholders for enabling mainstreaming of alternate material for construction?
4. What are the key incentives that are already being provided in Central India/MP/Jharkhand/Odisha to scale up bamboo-based economy? Can you provide some examples of public sector schemes or projects?
5. How can eco-tourism policy play an important role in promoting sustainable housing materials like bamboo?
6. Examples of business models that can mobilize demand for sustainably sourced bamboo for construction.

1. मध्य भारत में बांस आधारित निर्माण को बढ़ाने के लिए किन प्रमुख नीति और नियामक मुद्दों पर विचार करना चाहिए?
2. प्रमुख नीतिगत बाधाएं या सक्षम करने वाली स्थितियां क्या हैं जिनका लाभ उठाया जा सकता है?
3. निर्माण के लिए वैकल्पिक सामग्री को मुख्यधारा में लाने के लिए प्रमुख हितधारक कौन हैं?
4. बांस आधारित अर्थव्यवस्था को बढ़ाने के लिए मध्य भारत -एमपी/झारखंड/ओडिशा - में पहले से ही कौन से प्रमुख प्रोत्साहन दिए जा रहे हैं? क्या आप सार्वजनिक क्षेत्र की योजनाओं या परियोजनाओं के कुछ उदाहरण प्रदान कर सकते हैं?
5. बांस जैसी स्थायी आवास सामग्री को बढ़ावा देने में पर्यावरण पर्यटन नीति कैसे महत्वपूर्ण भूमिका निभा सकती है?
6. व्यवसाय मॉडल के उदाहरण दिजिये जो निर्माण के लिए बांस की मांग को बढ़ा सकते हैं।

## ANNEX IV: PHOTOGRAPHS FROM THE SESSIONS



