

Summary of Proceedings on the National Consultation on Bamboo Value Chain Pertaining to
The Construction Sector: Learnings, Insights and Way Forward
Held on 3 November 2022
as part of
India and Sustainability Standards Conference 2022

Background

To conclude the Phase 1 of the Climate Smart Forest Economy Program of which the two organizations, WRI India and the Centre for Responsible Business embarked upon, a National Consultation was held on November 3, 2022, at a session in the India and Sustainability Standards Conference 2022. This session was titled Bamboo Value Chain Pertaining to The Construction Sector: Learnings, Insights and Way Forward.

As a means to mark the ongoing project-related partnership between CRB and WRI India, a session titled 'Bamboo Value Chain: Learning's, Insights and Way Forward' will be held at the 2022 edition of the India and Sustainability Standards conference. The core topic and research done under this program syncs with this year's conference theme – Prioritising Nature and People in Business to Create Measurable Impacts.

In this session, WRI India and CRB will be presenting basic information, key findings, and insights for future work under this program, in the context of bamboo in the construction sector. The session will also focus on building stronger connections with key stakeholders for continued engagement by forming a strong value chain alliance. The systematic functional value chain alliance involving private sector (plywood industry, sawmill association, lumber companies, real estate developers), academia, standards and certification agencies, government departments, technology institution and eco- entrepreneurs will strive to address the barriers and benefit each other mutually. Thus the alliance can serve to mainstream bamboo housing from locally grown native species, locking carbon from harvested trees and avoiding emissions that could have resulted from cement and steel-based construction. By reducing the demand, supply chain and policy barriers, the alliance would foster a restoration economy and livelihood generation for diverse social groups, in addition to supporting meeting India's global commitments as a part of its Nationally Determined Contributions under the Paris Climate Agreement and Sustainable Development Goals.

Opening and Introduction

The session began with a Brief Welcome and Context Setting. This was followed by Siddharth Edake, Senior Manager, Sustainable Landscapes & Restoration Programme, WRI India giving

a presentation, which talked about the methodology and findings of the on-going collaboration between WRI India and CRB on the CSFEP Program. Dr. Ruchika Singh, Director - Sustainable Landscapes and Restoration, WRI India was then handed over to take charge of the Proceedings, considering that she was the Moderator of the Panel Discussion.



Image: Brief Context and Welcoming Setting Remarks in progress with speakers joining in-person and virtually



Image: Siddharth Edake, Senior Manager - Sustainable Landscapes & Restoration Programme, WRI India delivering the Opening Presentation

The panel discussion began with the Moderator asking about innovative examples of national and international policies and practices, which favour bamboo to be used as an alternative building material in the construction sector. In this regard, it was shared that industry-compliant standards and capacity building are two key requirements and that experience can be drawn from on-going projects at INBAR. It was also reiterated that Bamboo can be used in construction such as via laminates and composites. The importance of having national-level standards both from the perspective of production and consumption was also highlighted. It was also pointed out that identification of priority species is being carried out. It was recommended that there must be a resource base available to ensure uptake. Finally, it was recommended that it is important to have the right kind of research and development as there is a need to help interested users and hence there is a requirement of specialized services to benefit and help end users to use this material.



Image: Dr. Ruchika Singh, Director - Sustainable Landscapes and Restoration, WRI India, hearing the Panelist after posing her question

The second panelist was called upon by the Moderator to elaborate on the on the key sustainability criteria that could be considered to enable greater market uptake of bamboo/wood in Building/Construction. In this regard, the panelist drew from her experience of AKAH India carrying out a pilot project of developing a bamboo value chain for introducing the material to replace cement and steel used in construction in Southern Saurashtra. In this regard, it was highlighted that bamboo is being promoted as a use

application in the form of bamboo screens and that the use of bamboo benefits local communities and livelihoods. In terms of criteria, affordability is a key parameter to ensure uptake of the bamboo and that there is a need to consider the social criteria, namely, the preferences of the end user such as the aspirational aspect. It was highlighted that sourcing is a key challenge as well as the perception of its durability. It was also shared that felling and transportation requires a paper trail but such a requirement at a pilot/small scale is not feasible. Another challenge that was highlighted is one of identifying the right workforce to work with bamboo.

The moderator then called upon the third panelist, who is a well-renowned Architect and is the Principal and founder of Manasram Architects. She was asked to reflect on the practical learnings from her experience and changes needed to galvanize a movement for using sustainable material in the housing sector. The panelist went on to share that architecture is such that it encourages standardization but there is a need to consider the role of active systems along with the purpose of architecture. From her experience in efforts to mainstream bamboo, she had to look beyond prototype-based projects and focus on projects that incorporate practice. Hence, her recommendation is not to put application of bamboo in a silo. Furthermore, there is a need to transition away from positioning bamboo as a low-cost material as then its perception changes and instead consider positioning itself as cost effective material. She realizes the importance of capacity building and has adopted the practice of training people on site.

The Moderator then posed a key stakeholder representing CIBART who has extensive experience both from the perspective of the supply and policy side, who was asked to reflect about domestic and international Bamboo market as well as any challenges that he would like to particularly highlight. He reiterated that Bamboo is green gold and that there is a need to focus on the sustainability aspect of bamboo. He shared that the Tourism industry is seeing the value of bamboo and that Indian bamboo is becoming globally competitive. However, he did share that the problem is that in India, the perception of bamboo is that it is seen as inferior building material. He further highlighted the use of bamboo extensively in the Terminal-2 of the Kempegowda International Airport (KIA) in Bengaluru.



Image: The panel discussion in progress with Moderator looking on as Panelist provides his response

The moderator moved to the Panelist representing a Research Institute known as Indian Plywood Industries Research and Training Institute (IPIRTI), where he was asked to reflect on his learnings of working in the Bamboo sector in the North-East region of India. He highlighted that the characteristics that are promoting/ can promote the use of bamboo include the renewal of the National Bamboo Mission. He recommended the importance of an awareness scheme, namely by a government order of use of replacement / substitution construction material in the form of bamboo. He gave an example of two use cases of bamboo: the Northern Railways and bamboo lumbar being incorporated to develop bamboo tiles that will be used in a portion of the Central Vista. He reiterated the points made by earlier panelists on the need to create awareness to ensure mainstreaming as well as the need to introduce bamboo in a civil engineering course. He also shared that there is a need to align buildings using bamboo with ISO standards so that it can be incorporated in the Handbook of the Structural Indian Code. He also shared that there is an on-going development of a handbook by IPIRTI.

Summary of Learnings and Insights

Key Barriers

- There is a challenge in terms of perception of its durability
- The only problem is that in India, the perception of bamboo is that it is seen as inferior building material
- Sourcing is a key challenge
- There is also a challenge in identifying the right workforce to work with bamboo
- Large scale availability of bamboo is a challenge
- Given the requirement of a paper trail to procure bamboo, it is not feasible when conducting a pilot or in small scale operations

Demand Side Enablers

- To mainstream bamboo, there is a need to look beyond prototype-based projects and focus on projects that incorporate practice and hence not put application of bamboo in silo such as resorts
- There is a need to transition away from positioning bamboo as low-cost material as then its perception changes and instead consider positioning itself as cost effective material
- The government has shown uptake of bamboo in key sites of high usage, such as the Central Vista incorporating the use of bamboo tiles made from Bamboo Lumber and at the Terminal-2 of the Kempegowda International Airport (KIA) in Bengaluru
- There is a need to create awareness to ensure mainstreaming

Supply Side Enablers

- As part of capacity building, one can consider on the job training such as in the case of architects on site, who can be trained on bamboo use and application
- There is a need to introduce bamboo in a civil engineering course

Policy Side Enablers

- The government is a key stakeholder as it has demonstrated an application use case of bamboo at the Terminal-2 of the Kempegowda International Airport (KIA) in Bengaluru
- There is a need to align building with bamboo with ISO standards so that it can be incorporated in the Indian Code of Building Practice

Way Forward

The panelists were then asked to reflect on the Expectations of the role of the Value Chain Alliance and the role they envisioned for themselves going forward in the Value Chain Alliance. In this regard, recommendations were also shared to ensure that the Value Chain Alliance will be successful, including the importance of encouraging a change in consumer mindset, ensuring collaboration with like-minded institutions such as educational institutions, which also ensures broad level alignment with SDG 17. It was also highlighted that there is a need to ensure that there is demand given that capacity is being built as well as to stay abreast of updates in relation to Codes which are relevant from the perspective of the Bamboo building sector. It was also suggested that bamboo can be promoted by connecting it to Women Empowerment Programs who have capacity and training to work on bamboo but there is a need for funding to make it feasible for these women programs. Finally, there is a need to ensure awareness on the why behind specific bamboo species are being utilized in relation to structural capacity and the importance of co-developing shared visions, shared responsibility and hence there is a need to collectively look at evidence in the form of best practices.



Image: Panelists with the Program team members

ANNEX 1: MEETING AGENDA

When: November 3, 2022

Time: 16:15 hrs. – 17:30 hrs. IST

Where: Eros Hotel, New Delhi and Virtual (Hybrid)

Time	Agenda Items (Indicate topics, speakers/panelists, chairs)
15 mins	Inaugural session <ul style="list-style-type: none"> ● Welcome and Context-setting, Dr. Ruchika Singh, Director - Sustainable Landscapes and Restoration, WRI India ● Opening Presentation on Bamboo Value Chain, Siddharth Edake, Senior Manager, Sustainable Landscapes & Restoration Programme, WRI India
55 mins	<p>Panel Discussion: Moderator: Dr. Ruchika Singh, Director, Sustainable Landscapes and Restoration Program, World Resources Institute India</p> <p>Panelists</p> <ul style="list-style-type: none"> ● Ms. Sangeeta Agasty, Regional Director – South Asia, INBAR ● Ms. Sana Dharani, Head of Department, Aga Khan Agency for Habitat India ● Ms. Neelam Manjunath, Proprietrix, Manasram Architect ● Sanjeev Sashikant Karpe, Managing Director, Centre for Indian Bamboo Resource and Technology (CIBART) ● Dr. Amitava Sil, Officer-in-Charge & Scientist-E IPIRTI, Field Station Kolkata, Indian Plywood Industries Research & Training Institute (IPIRTI) (Invited)
15 mins	Q&A
5mins	Closing Session Closing Remarks, Rijit Sengupta, CEO, CRB Way Forward