

Bamboo Info

A quarterly newsletter of Bamboo Technical Support Group (BTSG) - KFRI



Oxytenanthera bourdillonii Gamble

Oxytenanthera bourdillonii Gamble, locally known as “Arayambu” which features straggling culms with long internodes. Culm sheaths are 15-30 cm long, coriaceous, hispid, hairy at the base, with black hairs, and the leaves are lanceolate in shape. The commercial viability of this species is hindered by both its low utilization rate and inadequate availability.

22nd Edition of Kerala Bamboo Fest

The 22nd edition of ‘Kerala Bamboo Fest’, a national event for the promotion of the bamboo sector, was held at the Jawaharlal Nehru International Stadium Ground, Kaloor, Kochi (Ernakulam), from December 27, 2025 to January 1, 2026.



KFRI and OBDA signed MoU to strengthen bamboo sector through scientific collaboration

The Kerala Forest Research Institute (KFRI) signed Memorandum of Understanding (MoU) with the Odisha Bamboo Development Agency (OBDA) on November 27, 2025.



Editor's Desk

Dear readers,

Welcome to the debut issue volume 2 of Bamboo Info, your source for all things that are bamboo-related!

In this issue, Bamboo Info brings together key developments and events that reflect the growing momentum of the bamboo sector. We highlight major initiatives, collaborations, and community-centred programmes that are shaping the present and future of bamboo-based livelihoods and sustainable development.

This edition features coverage of the 22nd Kerala Bamboo Fest and the Traditional Bamboo and Reed Workers' Meet. In addition, we share updates on institutional collaboration, including the Memorandum of Understanding signed between KFRI and OBDA, aimed at strengthening research, development, and field-level implementation in the bamboo sector.

At BTSG, we believe that through comprehensive training programs, community engagement and hands-on projects, we can transform landscapes and improve livelihoods by bringing farms to homes, creating sustainable solutions for a brighter tomorrow. By prompting local self-government institutions to cultivate bamboo, we aim to cultivate change, improve livelihoods, and foster sustainable development. We invite you to join us as we navigate the intersection of tradition and technology, seamlessly blending ancient wisdom with modern solutions.

As we launch Bamboo Info, we invite you to become an integral part of this interactive space. Use it to stay connected, share your stories, and be inspired by the groups' efforts that amplify the impact of bamboo and contribute to a more sustainable and resilient world.

Thank you for joining us on this exciting journey!

**Editorial team,
Bamboo Info**

Bamboo and tribal communities: A living relationship

“India has one of the largest concentrations of tribal populations in the world, with nearly 68 million tribal people whose lives are closely shaped by the ecosystems they inhabit. Among the many natural resources, bamboo holds an irreplaceable position in tribal life. Across the country, several indigenous communities depend almost entirely on bamboo for their livelihoods; such as the Kotwalia tribe of Gujarat, the Dom community of Odisha engaged in basketry, and the Lushai people of Mizoram, for whom bamboo is integral to their lifestyle and culture. India ranks as the second richest country in bamboo genetic resources after China, and bamboo remains one of the most widely distributed and economically important forest species, especially in tribal belts. The ethnic, simple, and vibrant bamboo-based arts and crafts of tribal communities reflect India’s rich cultural heritage. However, these historical traditions face growing challenges like lack of sufficient bamboo resources due to deforestation, climate change, urban expansion, and market competition. Preserving bamboo-based traditions is therefore not only an environmental priority, but also essential for cultural survival, livelihood security, and social sustainability of India’s tribal communities.”

VB Sreekumar

Coordinator, BTSG-KFRI

V Anitha

Associate Coordinator, BTSG-KFRI

Spotlight

Particleboard from *Bambusa balcooa* for sustainable production

Kerala's wood composite sector is increasingly prioritising sustainable production, with particular attention to the particleboard industry. Perumbavoor a municipality and a north eastern suburb of the city of Kochi remains a major hub for wood composite manufacturing, especially plywood in Kerala. However, in Kerala currently has only a limited number of operating particleboard units, around 6 to 7. In recent years, particleboard manufacturers have faced growing scarcity of raw materials, which has led to periodic production stoppages of about 2 to 3 weeks every four months.

The rubberwood remains the principal raw material for particleboard production,

while species such as eucalyptus and oak are also used. A considerable share of raw material comes from plywood related residues, including waste sticks generated after veneer peeling and waste veneer. Additional inputs are sourced from small diameter wood, such as branches and poles.

The reduced availability of rubberwood is closely linked to changing farmer preferences. Many farmers are shifting from long rotation plantations to short rotation and multi utility systems that provide earlier income. In several regions, including Kottayam and Malappuram, rubberwood has been replaced by Matti (*Ailanthus triphysa*), Vatta (*Macaranga peltata*), and fruit trees such as rambutan

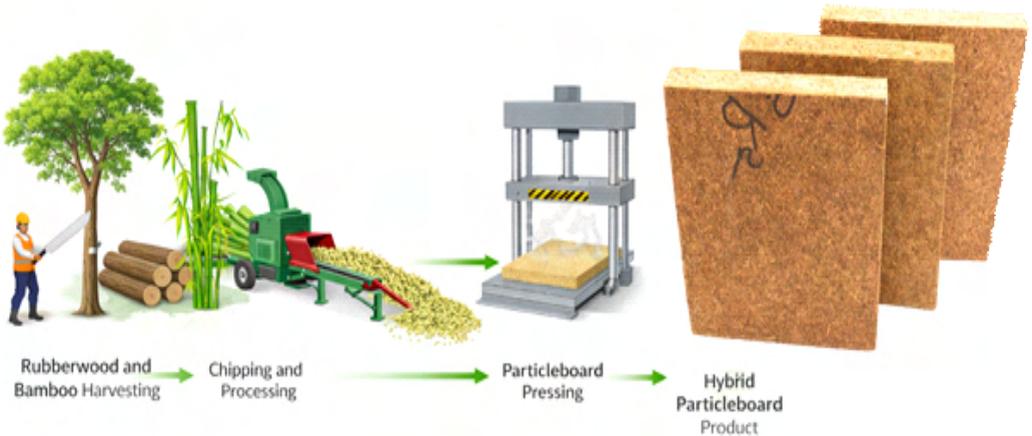


Figure 1. Hybrid bamboo - rubberwood particleboard production.



Figure 2. Rubberwood plantation replaced with Vatta (*Macaranga peltata*) and intercropped with pineapple (location Kottayam)

(*Nephelium lappaceum*), and intercropping with pineapple (Fig.2). These land use changes have weakened the raw material supply for wood composite industries. As local resources become limited, manufacturers are increasingly forced to procure raw materials from neighbouring states. This raises procurement and transportation costs and increases overall production expenses.

In response, the wood composites research community is actively exploring alternative resources to reduce dependence on conventional rubberwood. At the present stage, partial replacement of conventional

raw materials is a practical approach because it supports industry needs while maintaining product quality.

Kerala has favourable climatic conditions for cultivating bamboo, particularly *Bambusa balcooa*. Bamboo shows strong promise as a lignocellulosic resource for particleboard production. It offers rapid growth, good flexibility, and a high strength to weight ratio. Its porous structure also supports a wide range of end uses, including construction. Bamboo is versatile and can be processed into panels, crafts, and tableware, while processing residues can be recycled into

fibreboard. India has a natural bamboo habitat covering 13.96 million hectares and includes 136 species, which makes the country the world's second largest bamboo producer. Bamboo can be harvested within 4 to 5 years, making it a highly renewable substitute for wood. Kerala and the neighbouring state of Tamil Nadu host bamboo-based industries and plantations that supply raw material for diverse products. The Kerala State Bamboo Corporation and the National Bamboo Mission (NBM) promote bamboo cultivation and industrial utilisation through policy support and market facilitation. Although the cost of bamboo particles is slightly higher than that of rubberwood, the shorter harvesting cycle and high yield potential make bamboo feasible for industrial linked plantation strategies that can ensure a continuous and sustainable supply for composite production. For these reasons, bamboo is a suitable resource option for particleboard manufacturing.

Among available species, *Bambusa balcooa* is a strong option for particleboard production, similar to *Bambusa vulgaris*. The particleboard produced from *Bambusa balcooa* culm particles and bonded with urea formaldehyde adhesive has shown higher modulus of rupture (24 N/mm^2), and higher modulus of elasticity (3831 N/mm^2) than rubberwood based particleboards. However, other properties such as internal bond strength, water absorption, and thickness swelling are comparatively lower. This is largely attributed to the

material nature of bamboo. The bamboo particles may exhibit buffering capacity that can influence the curing behaviour of urea formaldehyde adhesive, and bamboo fibres have higher affinity to water because of their porous structure. Rather than producing particleboards from bamboo alone, hybrid particleboard made from bamboo and rubberwood appears more suitable for industrial manufacturing. When bamboo particles are used at moderate proportions, up to about 50%, the modulus of rupture typically ranges from 16 to 20 N/mm^2 , which is higher than many rubberwood based commercial particleboards and satisfies the Indian Standard (IS 3087:2005) requirement for general purpose medium density flat pressed single layer particleboard. At this level, internal bond strength, water absorption, and thickness swelling can also meet the required Indian Standard limits.

When bamboo content increases beyond 50%, bonding strength and dimensional stability may decline. This is mainly due to differences in particle geometry between bamboo and rubberwood, along with combined effects of compression ratio, stored pressing stresses, bond integrity, and the hygroscopic nature of the bamboo. Nevertheless, using bamboo at moderate levels can diversify the raw material sources, reduce dependence on a single species, and support more stable and sustainable particleboard production. Further improvements are also possible through process modifications, including pre-treatment of bamboo to reduce

capacity and hygroscopicity. Such approaches can enhance overall performance and facilitate the production

of bamboo-based particleboard with reduced dependence on rubberwood.

Shibu Comath

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A view of *Melocanna baccifera* (Roxb.) Kurz

Bamboo Beats

Collection of news and activities from the bamboo sector.



22nd Edition of Kerala Bamboo Fest

The 22nd edition of 'Kerala Bamboo Fest', a national event for the promotion of the bamboo sector, was held at the Jawaharlal Nehru International Stadium Ground, Kaloor, Kochi (Ernakulam), from December 27, 2025 to January 1, 2026. The Fest serves as a major intervention for marketing in the bamboo sector and provides a platform for beneficiaries to expand their market reach, gain insights into product development, and share knowledge and experiences. The event was inaugurated by Shri P. Rajeev, Hon'ble Minister for Industries, Law and Coir, and was attended by several dignitaries including Shri P. Vishnuraj IAS, Director of Industries & Commerce and Mission Director, National Bamboo Mission-Kerala;

Shri A. P. M. Mohammed Hanish IAS, Principal Secretary (Industries), Government of Kerala; Shri T. J. Vinod, Hon'ble MLA, Ernakulam; and Shri Tiruchi Siva, Hon'ble Member of Parliament. Smt. V. K. Minimol, Hon'ble Mayor of Kochi Municipal Corporation, delivered the keynote address, while special addresses were made by Smt. Priyanka G. IAS, District Collector, Ernakulam; Smt. Anie Jula Thomas IAS, Officer on Special Duty (Industries), Government of Kerala; and



Dr. Prabhat Kumar, Mission Director, National Bamboo Mission, Government of India. Dr. Kannan C. S. Warriar, Director, Kerala Forest Research Institute (KFRI), also addressed the gathering, highlighting the importance of bamboo-based innovations and sustainable development initiatives.



The festival brings together around 300 artisans, organisations and innovators from across India and various international locations, showcasing bamboo's artistic, cultural and sustainable potential. Organised by the Kerala State Bamboo Mission and the Department of Industries and Commerce, the fest highlights the remarkable versatility of bamboo, from traditional crafts to modern lifestyle products.

B Traditional Reed And Bamboo Workers Meet

As part of the 22nd Kerala Bamboo Fest, the Kerala State Bamboo Mission organised a Traditional Reed and Bamboo Workers Meet on January 1, 2026.

The programme was inaugurated by Shri P. Rajeev, Hon'ble Minister for Industries, Law and Coir. The event was attended by several dignitaries, including Shri P. Vishnuraj IAS, Mission Director, National Bamboo Mission (Kerala), Shri M. P. M. Mohammed Haneesh IAS, Principal Secretary (Industries), and Shri T. J. Vinod, Hon'ble MLA, Ernakulam, among others.

Following the inaugural session, five technical sessions were conducted, focusing on various aspects of bamboo and reed-based livelihoods, value addition, and institutional support. The sessions were led by Shri K. S. Sreekanth, Deputy Commissioner, National Bamboo Mission; Shri Sooraj S., Chief Executive Officer, K-BIP and KSBM; Shri Suresh Pullanikkat, Managing Director, Kerala State Bamboo Corporation; Dr. V. B. Sreekumar, Principal Scientist, Kerala Forest Research Institute (KFRI); and Shri Tony Paul, Chief Executive Officer, Uravu, Wayanad.



The discussions highlighted key priorities, including ensuring the continuous supply of raw materials to artisans, the need for skill-based training programmes, expansion of bamboo plantations, and the provision of toolkits to artisans.

The meet provided a valuable platform for traditional workers, officials, and experts to interact, share experiences, and discuss strategies for strengthening the bamboo sector and improving the livelihoods of reed and bamboo artisans.

»B Kannadippaya of Kerala Receives GI Recognition at Tribal Business Conclave 2025



The Tribal Business Conclave 2025 concluded on 12 November 2025 at Yashobhoomi, Dwarka, celebrating the growing role of tribal entrepreneurship in India. The event was attended by Union Minister of Commerce and Industry Piyush

Goyal, Union Minister of Tribal Affairs Jual Oram, and Minister of State for Tribal Affairs Durgadas Uikey, along with senior government officials, industry leaders, investors, and more than 250 tribal entrepreneurs from across the country. A key highlight of the conclave was the award of new Geographical Indication (GI) recognitions to select tribal crafts and products. Among them was the traditional bamboo product Kannadippaya of Kerala, recognising its cultural significance, craftsmanship, and regional identity. BTSG–KFRI’s initiatives are expected to create a meaningful impact on the lives of the tribal communities engaged in Kannadippaya weaving. Hon’ble Union Minister for Commerce and Industry Shri Piyush Goyal presented the GI certificate of Kannadippaya to Mr. Kannappan, representing Unarvu Pattikavarga Vividhodesha Sahakarana Sangham, during the Tribal Business Conclave 2025 in New Delhi, in the presence of Hon’ble Tribal Affairs Minister Shri Jual Oram.



Uravu at Kerala Bamboo Fest



» **KFRI and OBDA signed MoU to strengthen bamboo sector through scientific collaboration**

The Kerala Forest Research Institute (KFRI) signed Memorandum of Understanding (MoU) with the Odisha Bamboo Development Agency (OBDA) on November 27, 2025, marking the beginning of a long-term partnership aimed at strengthening the bamboo sector through scientific collaboration, knowledge sharing, and technology transfer.

Speaking on the occasion, Kannan C. S. Warriar, Director, KFRI, said that the collaboration brings together Odisha's immense natural bamboo resources and KFRI's decades of specialised research and technical expertise. "Together, we can create an impact far greater than what any institution could achieve alone," he said, highlighting the shared vision of transforming the bamboo sector. Under

the MoU, the first area of cooperation is focus on scientific support for bamboo species selection, propagation, and the production of quality planting material. KFRI will assist OBDA in introducing improved nursery practices, micropropagation techniques, and standardised protocols for high-value bamboo species suited to Odisha's diverse agro-climatic conditions. The second component of the collaboration emphasises capacity building and skill development. KFRI will conduct training programmes for artisans, self-help groups, tribal communities, and technical staff on bamboo treatment, craft and furniture production, product design, and modern processing methods. The initiative aims to strengthen livelihoods by enhancing skills across the bamboo value chain. As part of the technology transfer component, KFRI will share bamboo preservation systems, low-cost treatment technologies, improved tools,



and product prototypes developed through its research programmes. These interventions are expected to help Odisha's MSMEs and community-level enterprises improve product quality, durability, and market competitiveness. The MoU was formally exchanged between Dr. Kannan C. S. Warriar and V. Karthik, State Mission Director, OBDA, in the presence of Ganesh Ram Singh Khuntia, Hon'ble Minister for Forest, and Environment, Government of Odisha, during the National Conference on Bamboo and Medicinal Plants held in Bhubaneswar. During the conference and MoU exchange programme, KFRI had the opportunity to present a **Kannadipaya** to Mr. Ganesh Ram Singh Khuntia and Mr. Satyabrata Sahu, IAS, Additional Chief Secretary, Government of Odisha. BTSG-KFRI also showcased its research innovations through a dedicated exhibition stall, featuring a range of bamboo-based products and technologies developed by the Institute.

»B **Five-Day Training on Bamboo Propagation and Processing Conducted at KFRI Peechi**

A five-day training programme on bamboo propagation, plantation management, processing and treatment was successfully conducted at the Kerala

Forest Research Institute (KFRI). The programme was inaugurated by former KFRI Director Dr. Shyam Viswanath. Dr. V. B. Sreekumar, Head of the Forest Botany Division and Programme Coordinator delivered the welcome address.



Dr. A. V. Raghu, Head of the Extension and Training Division and Training Coordinator explained the course programme. Dr. K. A. Sreejith, Head of the Forest Ecology Division and Training Associate proposed the vote of thanks. The training concluded on December 27. The programme featured a combination of classroom sessions, field demonstrations, and hands-on practicals, providing participants with comprehensive exposure to scientific and field-based approaches in bamboo propagation, cultivation, plantation management, processing and treatment.

»B **Horticulture Commissioner & Mission Director, National Bamboo Mission, Visits BTSG-KFRI Facilities**

Dr. Prabhat Kumar, Horticulture Commissioner and Mission Director, National Bamboo Mission (NBM),



Government of India, visited the Bamboo Technical Support Group (BTSG) facilities at the Kerala Forest Research Institute (KFRI) on December 29. During

the visit, Dr. Prabhat Kumar reviewed key infrastructure and ongoing activities, including the bamboo germplasm collections, agroforestry trails, bamboo waste processing units, and tissue culture laboratories. He interacted with scientists and technical staff, gaining insights into KFRI's research initiatives focused on bamboo conservation, propagation, value addition, and sustainable livelihood development. Dr. Prabhat Kumar provided specific technical and strategic guidance for strengthening bamboo research.

Submission guidelines

We at Bamboo Info are excited to invite you to contribute full-length articles, news snippets, reports, and announcements of bamboo-related events for our upcoming issues. We welcome submissions on a wide range of topics, including but not limited to:

Spotlight: share your knowledge and expertise on any aspect of bamboo you're passionate about. You may introduce readers to a topical issue in the bamboo sector that deserves more attention.

Out of the Box: Have you stumbled upon a design concept, product novelty, or innovation that uses bamboo in a unique and creative way? We want to hear about it! Please submit an illustrated note describing the species used, dimensions, and other relevant details. The design should be original.

Species in Focus: Do you have a particular species of bamboo that you

find fascinating? Share your insights on its distribution, ecology, salient features, specific uses, cultivation, and economic potential.

Roots: Bamboo has a rich cultural history and is still used in many traditional ways today. We would love to showcase time-tested bamboo products, cultural uses of bamboo, and traditional technologies from far and wide.

Chronicles: We are interested in hearing stories from the field about bamboo resource development, technology adoption, training, and other related topics.

Bamboo Quill: This section will highlight relevant books or publications about an emergent aspect of bamboo.

To submit your notes and articles, please send them to btsg@kfri.res.in or btsgkfri@gmail.com.

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A photograph of *Oxytenanthera bourdillonii* from Nelliyamapathi hills.

About Bamboo Info

Bamboo Info is a quarterly newsletter from the Bamboo Technical Support Group (BTSG)-KFRI. Contents do not

necessarily reflect the views or policies of BTSG-KFRI. Articles may be reprinted without charge, provided BTSG-KFRI and the author are credited. All photos should be credited to BTSG-KFRI.

About BTSG-KFRI

The Bamboo Technical Support Group is hosted at KFRI and supported by the National Bamboo Mission of the Ministry of Agriculture and Farmers Welfare to serve as a unit providing support to the National Bamboo Cell in technical and research matters.

KFRI BTSG team has expertise in various areas relating to bamboo which includes taxonomy, propagation, germplasm conservation, plantation technology, preservative treatments, harvesting techniques, pest and disease management, Value addition and marketing of bamboo products, inventory of bamboo stocking using Remote Sensing and GIS, socio-economic and livelihood potential, training programmes, cluster development and livelihood improvement of artisans and farmers, etc.

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