

BARC 2018 Highlights: Tuesday, 26 June 2018

The Global Bamboo and Rattan Congress (BARC 2018) entered its second day of discussions in Beijing, China, focusing on the role of bamboo and rattan in climate change and green growth. Speakers from the UN Framework Convention on Climate Change (UNFCCC) opened the morning session, followed by a high-level dialogue on the topic. Participants then met in parallel sessions on topics addressing land restoration, carbon sequestration and carbon trade, panda habitat, and capacity building, among other topics.

High-Level Dialogue on Bamboo and Rattan for Climate Change and Green Growth

Opening: Martin Frick, UNFCCC Secretariat, opened the dialogue with a video message by Patricia Espinosa, Executive Secretary, UNFCCC, who emphasized the central role bamboo and rattan can have in achieving the 2015 Paris Agreement on climate change, and the 2030 Agenda for Sustainable Development. In a keynote speech, Jovrine Kaliisa Kyomukama, Uganda, welcomed the Netherlands' possible extension of the Dutch-Sino East Africa Bamboo Development Programme, emphasizing that bamboo is essential to fulfilling the vision of the Uganda Forum on Climate Change, of which she is a member.



Jovrine Kaliisa Kyomukama, Member of Parliament, Uganda



Pablo van der Lugt, Delft University of Technology, the Netherlands

In a TED-style talk, Pablo van der Lugt, Delft University of Technology, the Netherlands, drew attention to the potential of bamboo in terms of its speed of growth and its effectiveness for carbon sequestration and climate mitigation, and called for integrating bamboo in national action plans on climate. He described bamboo as an ideal material for building construction compared to non-renewable materials such as concrete, aluminium or PVC, showing images of luxury villas made of bamboo in Bali, Indonesia.

Panel Discussion: Frick moderated the discussion. Patricia Appiagyei, Ghana, said her country recognized the use of bamboo in strategies for climate change mitigation and adaptation, and thanked the Chinese government for providing training opportunities in bamboo usage and processing.

Gerhard Dieterle, Executive Director, International Tropical Timber Organization (ITTO), urged INBAR members to work closely with ITTO to address land degradation, close the projected supply gap for tropical forestry products by 2050, and build a green supply chain for their products. Pradeep Monga, UN Convention to Combat Desertification (UNCCD), urged INBAR countries to use bamboo to combat climate change and achieve multiple Sustainable Development Goals (SDGs), especially the SDG 15 target on land degradation neutrality (LDN). Chunfeng Wang, China National Forestry and Grassland Administration (NFGA), explained that China's new emissions trading scheme will eventually include bamboo, and that NFGA has developed with INBAR a methodology to quantify bamboo's carbon sequestration potential.



L-R: **Patricia Appiagyei**, Vice-Minister for Environment, Science, Technology and Innovation, Ghana; **Gerhard Dieterle**, Executive Director, ITTO; **Pradeep Monga**, UNCCD Secretariat; **Martin Frick**, UNFCCC Secretariat; **Han Meng**, UNEP-WCMC; **Saibal Dasgupta**, Ministry of Environment, Forestry and Climate Change, India; and **Chunfeng Wang**, China National Forestry and Grassland Administration

Saibal Dasgupta, Ministry of Environment, Forestry and Climate Change, India, explained the importance of recent policy changes to the Indian Forest Act, which now no longer classifies bamboo as a tree, and outlined possible paths for India to use bamboo to combat climate change.

Han Meng, China Representative, UN Environment World Conservation Monitoring Centre (WCMC), noted that, to harness the full potential of bamboo, it is essential to understand how natural capital, biodiversity and ecosystems are interlinked, and how these links might be changing along with the climate.

Participants from the floor raised concerns about the dwindling market price of bamboo, financing for small farmers, and how to calculate carbon offsets that may be achieved through planting bamboo. Monga drew attention to the LDN Fund for promoting private-sector land restoration efforts, noting that bamboo plantations adopting a value-chain approach may qualify for support.

Parallel Sessions

Protecting the Panda Habitat: Hans Friederich, Director-General, INBAR, moderated the discussion on China's conservation of bamboo forests as habitat for panda conservation,

and its recent successes in reintroducing captive-bred pandas to the wild, boosting the vulnerable population that currently numbers fewer than 2,000. Zhang Zhiyong, NGFA, China, briefed participants on plans to establish a large-scale protected area across different provinces in which panda habitat protection will also promote conservation of other species. Speakers from the International Union for the Conservation of Nature (IUCN), WWF, The Nature Conservancy, the World Conservation Society, and Conservation International highlighted that the cycle of bamboo growth, flowering and die-off determines panda survival rates, warning that climate impacts could affect the cycle and should be scientifically monitored so that predictions of panda's food availability can be made. Participants proposed organizing a focused technical workshop and supporting knowledge exchange among China and other countries.

Research, Development and Capacity Building in the Bamboo Sector in India: T. Imkonglemba Ao, Government of Nagaland, India, moderated the session. B.N. Mohanty, Director, Indian Plywood Industries Research and Training Institute (IPIRTI), India, outlined the use of various bamboo species in sustainable housing, and concluded that bamboo may be a game changer for the socio-economically challenged areas.



L-R: **B.N. Mohanty**, Director, IPIRTI, India; **Vipin Chawla**, IPIRTI, India; and **Neelam Manjunath**, Managing Trustee, Center for Green Building Materials and Technology, India



John Liu, CommonLand Foundation

Vipin Chawla, IPIRTI, discussed best practices in building sustainable housing using bamboo in India, including species selection, treatment of materials, and construction techniques. Neelam Manjunath, Center for Green Building Materials and Technology, India, reminded the audience of current limitations to the use of bamboo in India, which should be overcome, including some related to inadequate research or execution. She presented several building projects demonstrating the versatility of bamboo.

Bamboo for Land Restoration and the Bonn Challenge:

Eduardo Mansur, Food and Agriculture Organization of the UN (FAO), moderated the session. John Liu, Commonland Foundation, presented ecological principles for land restoration, followed by case studies from China, Colombia, India and Tanzania. Trinh Thang Long, INBAR, presented progress by 15 INBAR Member States toward meeting their commitment to restore 5.8 million hectares using bamboo, and the results of a member state survey on perceived constraints. Panelists from UNCCD, WCMC, IUCN and Commonland Foundation discussed: promoting financing for land restoration using bamboo; scaling up sufficiently to fulfill the Bonn Challenge commitment; engaging small farmers; creating incentives; and changing mindsets and expanding awareness regarding the potential and benefits of using bamboo for land restoration.

Tri-lateral Cooperation in East Africa: Moderated by Jayaraman Durai, INBAR, panelists from Ethiopia, Kenya, and Uganda presented their respective experiences of bamboo industry development and affirmed the Dutch-Sino East Africa Bamboo Project as an effective trilateral cooperation model for promoting use of the material. Gong Peng, Tsinghua University, China, introduced a GIS-based assessment of bamboo stocks in the three countries. Caroline Wangui Kariuki, Green Pot Enterprise, Kenya, listed the main challenges in promoting bamboo markets, including: policy gaps, lack of knowledge and technological expertise, cost of seedlings, and socio-economic barriers. Participants from the floor reflected on their personal experiences of planting bamboo and acknowledged the rapid development of bamboo-based industries in recent years, citing, for example, the production of bamboo charcoal.



Caroline Wangui Kariuki, CEO, Green Pot Enterprise, Kenya

The Role of Bamboo in Emergency Shelters and Social Housing: Sivanka Dhanapala, UN Refugee Agency (UNHCR), gave a keynote speech on UNHCR's efforts on providing emergency shelters, including the 'Nobody Left Outside' campaign and the Global Shelter Coalition. Hector Archilla, CEO, Amphibia group, UK, facilitated speakers' presentations on topics including: techniques to make resilient housing out of bamboo; bamboo for emergency shelters and permanent housing in countries affected by earthquakes, such as Nepal and Mexico; India's recent efforts to build low-cost toilets out of bamboo; and adapting bamboo-based earthquake-proof housing technology from Colombia to the Philippines. In a panel discussion, speakers addressed challenges of scaling up the use of bamboo, which, they noted, may be political, legal or environmental, and stressed the need for further development of international standards in bamboo housing construction.

Global Assessment of Bamboo and Rattan (GABAR) for Green Growth: Trinh Thang Long, INBAR, introduced the work of GABAR in developing methodologies for assessing bamboo and rattan stocks, noting its value in providing reliable information and science-based evidence, and in highlighting investment opportunities. Speakers from INBAR, the Forest Survey of India, the Academy of Green Development in Kunming, and Tsinghua University, China, presented their use of assessment methodologies including GIS, on-ground assessment, and assessment of on-farm and beyond-forest stocks with the use of a smartphone application to capture data, covering assessment activities to date in China, Ethiopia, India, Jamaica, Kenya, Madagascar, Uganda and Viet Nam.

Speakers noted that combining assessment of bamboo and rattan with forestry assessment could be cost-effective, and clarified that the smartphone application cost US\$5,000, and a manual and training could be provided separately, so that countries can conduct their own assessments.

Sustainable Tropical Forest Management: Gerhard Dieterle, Executive Director, ITTO, moderated the session. Sheam Satkuru, ITTO, made the case for: sustainably managed forests as necessary to reverse forest loss and land degradation; a holistic approach that includes non-timber forest products; and

creating green supply chains. Rene Boot, Director, Tropenbos International, discussed how the costs of current forest certification schemes limit their reach. He suggested combining certification, REDD+ and Forest Law Enforcement, Governance and Trade (FLEGT) regimes. Desy Ekawati, Ministry of Environment and Forestry, Indonesia discussed lessons learned from an ITTO project to develop a community-based bamboo industry. Camille Rebelo, Ecoplanet Bamboo discussed her company's approach to sustainable bamboo plantation management. Robert Nasi, Director-General, Center for International Forestry Research (CIFOR), urged using a holistic, mixed model approach combining bamboo and rattan with other types of forest to maximize land-use value.

Capacity Building and Training for Sustainable

Development: Philippe Pypaert, Programme Specialist for Natural Sciences, UNESCO Beijing Office, moderated a panel on effective capacity building. Gloria Asare Adu, CEO, Global Bamboo Products Ltd., Ghana, discussed what she learned from visiting Chinese factories and workshops. David Ganz,



Berhane Kidane, Ethiopian Environment and Forest Research Institute

Executive Director, The Center for People and Forests, Thailand, said training should be adapted for the local context. Berhane Kidane, Ethiopian Environment and Forest Research Institute, spoke of the upcoming China-Africa Bamboo Center in Addis Ababa. Robert Parua, Programme Specialist, UNESCO Beijing Office, outlined UNESCO's work in, among others, capacity development in the education system and knowledge-sharing. Eduard

Mueller, Rector, University for International Cooperation, Costa Rica, stressed the importance of hiring passionate, hands-on trainers. After a question-and-answer session, Pypaert read out a Statement of Intent on 'Establishing a Global System of Bamboo and Rattan Training Facilities' on behalf of session participants.



Li Nuyun, China Global Conservation Fund

Bamboo Carbon Sequestration: Forest Ecology and Management: Tingting Mei, Zhejiang A&F University (ZAFU), moderated this session. Frank Berninger, ZAFU, presented the results of atmospheric studies using eddy covariance techniques. Lei Wang, ZAFU, explored the application of systems thinking to the use of bamboo for climate change mitigation, green development and sustainable communities. Yongjun Shi, ZAFU, discussed the technical aspects of measuring and monitoring carbon sequestration of managed projects. Li Nuyun, China Global Conservation Fund, explained forestry carbon's role in the Chinese Certified Emissions Reduction (CCER) voluntary trading scheme, discussing methodologies used as well as China's first CCER forest carbon trade and its impact on farmers. A panel discussion addressed: how China assesses additionality in its forest carbon projects; how to factor in additional benefits, such as wildlife protection; methodologies used to assess benefits to farmers; how to motivate smallholder farmers to participate in carbon sequestration; how to assess whether products containing bamboo are carbon-neutral; and monitoring tools needed when dealing with fragmented landscapes.

Bamboo Winding Forum - Innovative Green Technology for South-South Cooperation: During the first half of the session moderated by Xie Ji, former Director General, Department of Climate Change, National Development and Research Commission, Ling Ye, Director of the State Forestry and Grassland Administration Engineering Research Center (ERCBWC) introduced 'bamboo winding' technology, which produces a strong composite material. He demonstrated potential applications, including in the construction of urban utility tunnels and houses that are resistant to fires, land subsidence and seismic movements. Dai Chunping, FP Innovations, presented scientific evidence on the strength and durability of bamboo winding composites. Agi Veres, Resident, UN Development Programme (UNDP) praised China's role in bringing technology innovation into South-South cooperation. Wang Zhibao, former Minister, China National Forestry and Grassland Administration, emphasized the importance of intellectual property rights to such technologies.

The second half of the session was moderated by Xiang Yu, Hubei Normal University. Zhu Min, President, Cybernaut Investment Group, discussed promoting bamboo winding technology from an investment perspective. Three local government officials from different regions of China outlined their regional development plans to apply bamboo winding technology in bamboo-producing areas. Shakti Bahadur Basnet, Minister, Ministry of Forestry and Environment, Nepal, called for more countries to partner with China in promoting the new technology. At the close of the session, MoUs were signed between: the China National Forest Products Industry Association and Ministry of Forestry and Environment of Nepal; ERCBWC and the Embassy of Myanmar in Beijing; and ERCBWC with five local governments in China.