



# 2020

## ANNUAL HIGHLIGHTS

INTERNATIONAL BAMBOO AND RATTAN ORGANISATION

A decorative horizontal bar at the bottom of the page is composed of four colored segments: blue, green, yellow, and red, arranged from left to right.



## ***The International Bamboo and Rattan Organisation***

The International Bamboo and Rattan Organisation, INBAR, is an intergovernmental organisation dedicated to the promotion of bamboo and rattan for sustainable development.

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Houses in the bamboo forests of south China. Photo by Mao Zhi, submitted to the Ninth China Bamboo Culture Festival.

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## ABOUT THE INTERNATIONAL BAMBOO AND RATTAN ORGANISATION

Established in 1997, the International Bamboo and Rattan Organisation (INBAR) is an intergovernmental development organisation that promotes environmentally sustainable development using bamboo and rattan. It is currently made up of 47 Member States. In addition to its Secretariat Headquarters in China, INBAR has five Regional Offices in Cameroon, Ecuador, Ethiopia, Ghana and India.





## ACRONYMS AND ABBREVIATIONS

<b>APBAMBOO</b>	Asia-Pacific Bamboo Symposium
<b>BRU</b>	<i>Bamboo and Rattan Update</i>
<b>CGIAR</b>	Consultative Group on International Agricultural Research
<b>COVID-19</b>	Coronavirus disease 2019
<b>FAO</b>	Food and Agriculture Organization of the UN
<b>FTA</b>	CGIAR Research Programme on Forests, Trees and Agroforestry
<b>GLF</b>	Global Landscapes Forum
<b>Ha</b>	Hectares
<b>INBAR</b>	International Bamboo and Rattan Organisation
<b>ISO/TC</b>	International Organization for Standardization Technical Committee
<b>SME</b>	Small- and medium-sized enterprise
<b>UN</b>	United Nations
<b>UNESCO</b>	UN Educational, Scientific and Cultural Organization

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## Foreword from the Board Chair and Co-Chair



*Sileshi Getahun*  
Board Chair



*Jiang Zehui*  
Board Co-Chair

2020 will be remembered as a unique and challenging year.

As an intergovernmental organisation made up of 47 Member States, almost all of which are developing countries, the International Bamboo and Rattan Organisation, INBAR, understands how the 2019 coronavirus disease (COVID-19) has had a critical impact on impeding the achievement of socio-economic and sustainable development plans around the world.

But just as 2020 has changed the way we work, it has also made one thing clear: INBAR's mission remains more critical than ever before.

Nature-based solutions are a critical part of building a more sustainable relationship with our planet. Fittingly, the slogan for the United Nations' (UN) International Day for Biological Diversity in 2020 was: "Our solutions are in nature." Bamboo and rattan are two such solutions: they provide a crucial source of habitat and ecosystem services, and can prevent deforestation, desertification and biodiversity loss, which in turn serve as a way to cope with climate change. They are also a versatile, easy form of income for rural communities, many of whom have been impacted badly by the pandemic. If used to their full potential, bamboo and rattan could be a significant part of the post-pandemic economic recovery in many countries, as tools to

build resilience.

INBAR's work during 2020 has made an impressive contribution to our mission: to promote environmentally sustainable development using bamboo and rattan. In spite of the international lockdowns, staff have continued to build capacity and raise awareness about these plants and their value chains across our Member States, all the while abiding by strict health and safety regulations.

INBAR has also adapted to the new environment. 2020 saw the launch of two major online products: a comprehensive webinar series, which was attended by thousands of people from around the world, and the magazine *Bamboo and Rattan Update (BRU)*, which provides a new online platform for policy makers, researchers and development practitioners to showcase their work.

Finally, INBAR has continued to advocate for bamboo and rattan as an essential part of a greener world, by building partnerships with strategic organisations and strengthening our network across our Member States and beyond.

In this unprecedented time, INBAR extends its deepest support to all people and countries affected by COVID-19, and is proud to continue working in partnership with all those in need of green and inclusive development.

Thank you for reading.



*Ali Mchumo  
Director General*

## Foreword from the Director General

In this year of unprecedented challenges, INBAR's programme of work has adapted remarkably well. Much like a forest of bamboo, we have remained flexible and resilient through the storms of 2020, providing essential support to some of the most vulnerable communities across our Member States.

INBAR continued to provide training and awareness-raising courses to participants around the world. Project-based training programmes have continued where possible, with an emphasis on providing practical, actionable training to beneficiary communities in our Member States. In the light of increased economic pressure on rural communities this year, much of this training has focused on value-added income generation. More than 17,000 people received this kind of training in 2020.

Where face-to-face training has not been possible, INBAR has shifted online, creating a formidable series of webinars. The sessions, which have covered everything from environmental management and poverty reduction to health and construction, have been viewed more than 100,000 times online so far: a true testament to their usefulness for professionals around the world.

INBAR has also created a new, virtual platform for engagement in its magazine. Launched in 2020, *BRU* collects the latest news, activities and research from across the bamboo and rattan sector and beyond. I warmly invite all those with an interest to submit their stories.

In 2020, we have remained active in supporting and growing our network, discussing INBAR's work with non-Member States and strengthening relations with our existing ones. In September, we were particularly delighted to welcome the Republic of Fiji to our network, as INBAR's 47th Member State.

Lastly, INBAR has continued to commission research, develop standards, and provide technical advice for our Member States. In 2020, we published around 30 reports, brochures and manuals on our website. We also contributed to a number of national bamboo strategies and international standards: legislation which will have a big impact on bamboo and rattan use across different regions and countries. As ever, in 2020 we remained committed to delivering real, practical support to our Member States.

I hope you enjoy our highlights from 2020, and I wish you a healthy and safe 2021.

## Working during COVID-19

***“Bending, but not breaking”*: INBAR has adapted to a new way of working in 2020.**

An often-used aphorism about bamboo is that, during a typhoon, bamboo forests bend but do not break. INBAR has adopted this spirit in 2020. Despite the challenges imposed by the COVID-19 pandemic, the organisation has remained flexible and resilient, adapting to new ways of working and different priorities.

As an intergovernmental organisation made up mainly of developing countries, INBAR is concerned about the impact COVID-19 could have on the most vulnerable communities across its Member States and the world. During this unique time, INBAR has continued to work with its Member States to support the continued development of their bamboo and rattan sectors for poverty alleviation and green growth, all while abiding by strict health and safety measures.

In the early days of 2020, INBAR offered its support to host country China. In February, INBAR donated 15 tonnes of bamboo tissue paper to the government to help hygiene and health workers across the country. INBAR Director General Mr. Ali Mchumo also wrote a letter to President Xi Jinping to extend the organisation’s support for ongoing

measures to combat the virus.

As the year progressed and the situation in China improved, staff at INBAR Headquarters were able to continue organising and attending events across the country. This included starting work on the design for the upcoming International Horticultural Exposition 2021 and attending bamboo exhibitions, design competitions, forums and events in the south of China. A full list of INBAR’s events can be seen from page 21.

In the light of the new challenges brought about by COVID-19, much project work in 2020 focused on training in income-generating activities, from sustainable harvesting to furniture making. More in-depth summaries of INBAR’s project work are available from page 8.

The way we learn and share information is also changing. For the second half of 2020, INBAR’s themed online webinar series (page 7) brought bamboo and rattan experts from all over the world together to educate, inspire and discuss key issues without the need for travel. Additionally, in September, INBAR launched a new quarterly magazine, *BRU* (page 6), as a platform to promote the latest news, activities and research across the sector.

More generally, INBAR has continued to raise awareness about the importance of bamboo and rattan for sustainable development, including their role in pandemic prevention and sustainable post-pandemic growth. In recognition of the additional challenges to sustainable development in INBAR’s Member States brought about by COVID-19, in 2020 INBAR established the Green Bamboo Fund: a means for countries, philanthropists, foundations, donors, companies and people to contribute to the organisation’s work moving forward.



*Staff follow strict health and safety measures.*



*The winning image of the 2020 INBAR international photo competition. Credit: Raphael Paucar & Noelia Carolina Trillo Mendoza.*

## The Green Bamboo Fund

***INBAR's new fund aims to help realise the organisation's mission.***

In 2020, INBAR established the Green Bamboo Fund. The Fund will serve as a way for donors to support INBAR's work, mobilising funds for projects in more Member States, and meeting the operational costs of the organisation.

The Fund was established in response to the changing demands INBAR faces as a fast-growing organisation. Since it was founded in 1997, INBAR has expanded from a network of nine Member States to 47. Whereas in the past, INBAR has relied on funding from donor agencies and annual membership fees, this is no longer sufficient to cover all its work. This means that a number of Member States are often excluded from INBAR's projects.

In 2020, the Green Bamboo Fund was established with an advisory committee of 10

members, including the INBAR Director General, Deputy Director General and Treasurer.

Financing priorities will include work which promotes bamboo and rattan for peace and green development, climate change mitigation and adaptation, COVID-19 economic recovery, landscape restoration, South-South and triangular cooperation, poverty alleviation and livelihood development, women and youth empowerment, and support for greening China's Belt and Road Initiative.

In the coming years, the Fund aims to attract donations from a wide range of actors committed to promoting nature-based solutions, including national and subnational governments, trust funds and foundations, the private sector and international and regional economic organisations.

## Educating and Inspiring

*In 2020, INBAR undertook much of its awareness-raising work online.*

### Launch of BRU

In 2020, INBAR launched a new magazine. *BRU* provides a platform for policy makers, researchers and development practitioners to showcase their news, research and activities from across the world. It is published four times a year: in March, June, September and December.

So far, two issues have been published. In Issue 1 (September 2020), ‘Bamboo, Rattan and Sustainable Development’, the authors reflected on the development of the bamboo and rattan sectors in recent decades, as well as some of the research which has shaped our understandings about these plants’ applications for sustainable development. The issue featured contributions from a range of renowned experts, including wood biologist Professor Walter Liese, Executive Director General of the International Centre for Bamboo and Rattan Dr. Fei Benhua, and botanist Ximena Londoño.

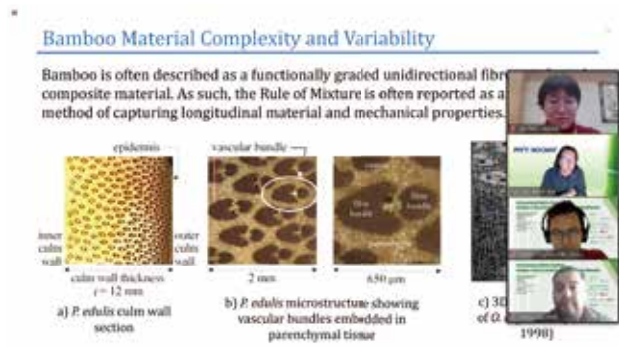
In Issue 2 (December 2020), ‘Communities and

Conservation’, experts considered the intertwined relationship between bamboo, rattan and other species. Dr. Jake Owens, Director of Conservation at the Los Angeles Zoo, and Professor Zhou Shiqiang of the China Conservation and Research Center for the Giant Panda, described the relationship between the giant panda and bamboo and the efforts being made to conserve both. Ms. Bouavanh Phachomphonh, a project leader in World Wildlife Fund for Nature in Laos, detailed the ongoing work to conserve biodiversity and create more sustainable livelihoods with rattan in the Mekong region.

In addition to featured articles from expert authors, every issue of *BRU* contains news, reviews and analyses from the bamboo sector around the world, as well as updates from INBAR’s project work. Issues are published online on INBAR’s website and are circulated to all subscribers of the INBAR newsletter.



*The BRU editors welcome submissions from all bamboo, rattan and forestry experts. More information about how to submit to the magazine or subscribe to the newsletter can be found on the INBAR website: [www.inbar.int/bru-magazine/](http://www.inbar.int/bru-magazine/).*



## A new webinar series

In 2020, INBAR launched a new webinar series about bamboo, rattan and their sustainable development applications. This series was created in response to the restrictions imposed on INBAR's conventional training courses due to COVID-19.

Capacity building has always been an important part of INBAR's work. Since 1997, the organisation has trained tens of thousands of people across the world in all aspects of the bamboo and rattan value chain. With physical workshops near impossible in 2020, INBAR training staff turned their efforts to producing online-only events, which could be viewed around the world. Each webinar featured experts in the relevant field and included a question and answer session to allow participants to dig deeper into specific topics.

Starting in May, INBAR organised 51 webinars under a number of themes, including bamboo's uses for environmental management, for poverty reduction and livelihood development, for health and welfare, and in construction. The series also looked at how to develop the bamboo sector in a sustainable way, examining technical and policy innovations in countries and regions around the world and how to sustainably manage and use rattan. INBAR's Regional Offices in Latin America and the Caribbean, South Asia and East Africa either hosted or co-hosted regional webinars on a wide range of topics, from local development models to regional initiatives.

In keeping with INBAR's mission to raise awareness about bamboo and rattan, all webinars

were provided free following registration, and certificates were awarded for the completion of certain webinars.

The webinars attracted a diverse range of viewers, including policymakers, scientists, planners, entrepreneurs, development practitioners and farmers. In total, nearly 1700 participants from 85 countries registered for the INBAR webinars and became regular followers of the series. Some 7500 people attended the live webinars. Following this, videos of each session were also uploaded to INBAR's YouTube channel (@INBAROfficial), where they garnered more than 100,000 new views between May and December.

Feedback from participants has been overwhelmingly positive: the webinar content was "very informative" and relevant to the topics, and many trainees appreciated having the opportunity to discuss technical issues directly with expert panellists. The most popular webinar topics included sustainable bamboo construction, bamboo's uses for climate change and environmental management, and innovative bamboo products.

The series will continue in 2021, with webinars every fortnight in diversified formats, including policy dialogues, online training courses on specific technologies, 'field classrooms' and virtual study tours. Scheduled webinars will cover topics such as bamboo and rattan's role in reducing plastic use, contribution to more circular economic growth, and sector development.

*More information about INBAR's past and upcoming webinars can be found at [www.inbar.int/inbar-webinars/](http://www.inbar.int/inbar-webinars/).*

## Supporting Countries

***In 2020, INBAR continued to work on pilot projects across a number of Member States.***

### Improving smallholder farmers' livelihoods with bamboo

The Inter-Africa Bamboo Smallholders Livelihood Development Programme, funded by the International Fund for Agricultural Development, aims to enhance incomes, livelihoods and climate change adaptive capacities of African smallholder farmers, women and youth by upscaling and increasing their participation in climate-smart bamboo value chains. The programme has been running since 2018 across Cameroon, Ethiopia, Ghana and Madagascar.

Understanding what bamboo resources a country has and where they are is a crucial first step to scaling up their use. In 2020, the project team helped organise resource assessments in Cameroon and Ghana, as well as a study of key bamboo value chains to promote in Ghana. More than 100 professionals in both countries were trained in how to conduct resource assessments in the future, using remote sensing and geographic information system technology.

Training and capacity development is another important part of incentivising sector development. In 2020, some 14,600 people were trained in a wide range of areas, from enterprise and bamboo business development to furniture and craft making,

agroforestry system management, and sustainable bamboo propagation and management. Future training efforts have been ensured by the recruitment of 91 'community stewards' to supervise training programmes and the establishment in 2020 of two new Common Production and Training Centres, which are operational in Cameroon and Ghana. Project staff also produced a number of manuals on bamboo management, agroforestry, treatment and preservation.

In terms of resource security, the project established or upgraded eight bamboo nurseries, producing and distributing seedlings to smallholder farmers, individual enterprises and the government for plantation and restoration projects.

Finally, the project continued to strengthen political support for bamboo sector development. With INBAR's inputs, a National Bamboo Strategic Plan for Ghana was published and launched in 2020. INBAR also strengthened its partnerships with a number of governments and organisations to cement support for continued training and scaling up of important bamboo value chains in Cameroon, Ethiopia, Ghana and Madagascar.



*Bamboo plants were distributed among villages in Ghana as part of the Inter-Africa Programme's work.*



*A gazebo being constructed in Busia county, Kenya, as part of the Dutch-Sino-East Africa Programme.*

## Supporting bamboo sector development in East Africa

Now in its second phase, the Dutch-Sino-East Africa Bamboo Development Programme uses international expertise to help develop the bamboo sector in Ethiopia, Kenya and Uganda. Although these countries have abundant native bamboo resources, their bamboo sectors remain relatively underdeveloped. The overall goal of the project is to support livelihood development, food security and better environmental management by developing robust bamboo value chains and a sustainable bamboo industry. The project is funded by the Ministry of Foreign Affairs of the Netherlands and the National Forestry and Grassland Administration, China.

The first phase of the programme made great strides forward in raising awareness, building capacity and integrating bamboo into national policies. Launched in April 2020, the second phase aims to build on these achievements.

Throughout the year, the programme organised 37 training courses for over 1000 trainees, which focused on how to establish bamboo micro-enterprises and how to link these to larger bamboo companies. A more formal vocational education curriculum is being developed, which will focus on training occupational skills for industrial

bamboo processing and small- and medium-sized enterprises (SMEs). In addition to SMEs, the programme is working to assist two new, larger bamboo businesses: GreenPot Enterprises in Kenya and Kontiki Bamboo Works in Uganda.

A robust bamboo sector requires a sustainable supply of bamboo. In 2020, the programme facilitated the establishment of 24 bamboo nurseries for the government and private sector, and supported smallholder farmers to plant bamboo on almost 1000 hectares (ha) of land. More than 1100 smallholder bamboo growers received training on how to sustainably manage their bamboo resources.

The programme has also been working to promote bamboo business development. Bamboo knowledge centres have been established in Ethiopia, Kenya and Uganda to provide business advice and support to prospective entrepreneurs. Locations have been identified to create bamboo depots: an important requirement for creating steady supply chains for enterprises.

Finally, the programme has been supporting Ethiopia, Kenya and Uganda to finalise bamboo product standards and kickstart the process for forestry certification by the Forest Stewardship Council in Ethiopia.

## Sustainable bamboo construction in Ecuador

Manabí is a coastal province of Ecuador with abundant bamboo resources. Since 2020, INBAR has been working on a project to create bamboo housing in the region as a means to reduce vulnerability to climate change and generate local employment. The project is funded by the Spanish Agency for International Development Cooperation.

Although bamboo housing can be affordable and resilient, more support is needed to train people in construction techniques and promote bamboo as a feasible building material. In 2020, the project made a number of breakthroughs. With INBAR's support, Ecuador's Ministry of Urban Development and Housing decided to include bamboo in the country-wide 'Sustainable Habitat Agenda of Ecuador 2036'. In addition, the project team worked with a number of municipalities and local governments to develop local regulations for promoting bamboo constructions and the sustainable management of their native resources. In one municipality,

students have become involved in local construction projects.

INBAR also developed a training curriculum for bamboo construction. With funding from the European Investment Bank, a new course on bamboo construction was developed for employees at the Ministry of Urban Development and Housing and local governments. A training curriculum on bamboo construction was developed for future students of the Manabí Workshop School, which will teach people from low-income areas how to build with bamboo. Finally, the project implemented a 'train the trainers' course on sustainable bamboo management, linking teachers from local universities with officials from the Ministry of Agriculture and Livestock and the Manabí government.

In terms of outreach, in 2020, INBAR's Spanish-language social media remained an influential way to disseminate information about ongoing project work, with over 100,000 people viewing content in 2020.

## Forest landscape restoration in Viet Nam



*Farmers learn how to propagate Lung bamboo at a nursery in Viet Nam.*

INBAR is continuing to work in Viet Nam, implementing the project 'Production-driven forest landscape restoration under REDD+ through private sector-community partnerships', or 'FLOURISH', which aims to enhance the climate change mitigation and adaptation potential of forests through production-driven landscape restoration. The project is funded by Germany's Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

In 2020, INBAR completed a life-cycle assessment of selected bamboo products in different

provinces of Viet Nam. The report analysed carbon flows and storage for the lifespan of bamboo-based products. The results will be used to attract investments in low-carbon bamboo products and spur further development of the sector.

A key issue with forest management is the lack of participation by local communities, who are often 'locked out' of these processes, despite being most affected by them. In 2020, the project continued strengthening locals' legal rights to land by helping farmers prepare application forms for forest land titles. The result was a massive upturn in applications for land: so far, most trainees have applied for the forest land titles, and more than 100 trained households have already received titles equivalent to just over 700 ha of forest land.

In Viet Nam, local Lung bamboo (*Bambusa longissima* sp. nov) forests are threatened by overexploitation. In 2020, INBAR successfully demonstrated how to propagate Lung bamboo with a high survival rate, to enrich and restore the depleting forests. Community forest managers have now been trained in these techniques using a manual created by the project. So far, this training has improved the direct management of about 200 ha of natural Lung forests. In addition, INBAR continued to facilitate and implement partnership agreements between larger companies and local community suppliers in Nghe An province. The agreements commit all involved to collaborate on surveying and preserving bamboo forests, and to more transparency regarding standards and pricing.

## Reforestation in Cameroon

INBAR is supporting the government of Cameroon to restore degraded land with bamboo as part of The Restoration Initiative, a project funded by the International Union for Conservation of Nature under the Global Environment Facility. The project contributes to the restoration and maintenance of critical landscapes to provide environmental benefits and resilient economic development in support of the Bonn Challenge, a global land restoration goal.

Last year, The Restoration Initiative provided technical support to national policy documents about sustainable bamboo forestry management and forest landscape restoration, which were developed with the Ministry of Forestry and Wildlife and the Ministry of Environment, Nature Protection and Sustainable Development. The documents will help ensure the long-term sustainability of bamboo planting efforts in Cameroon.

The project also helped establish eight new nurseries for bamboo and other non-timber forest plants, which in 2020 produced 37,000 plants for distribution. More than 100 ha of land were secured for restoration in an effort involving 150 locals, most of whom received training on bamboo agroforestry.



Training on bamboo nursery establishment in Cameroon.



*From left to right: Bamboo can be a low-carbon substitute for timber and other materials, if it is managed and used well. (See top story.) Bamboo shoots are a delicacy in China, and a potentially lucrative source of income. (See bottom story.)*

## Promoting sustainable bamboo trade

The Trade, Development and the Environment Hub is a global initiative to promote the sustainable trade of major global agricultural and forestry products and commodities. It is financed by the UK Research and Innovation's Global Challenges Research Fund, led by the UN Environment Programme World Conservation Monitoring Centre, and jointly implemented by more than 50 institutions around the world. INBAR contributes to the Hub by studying the impact of China's international trade of bamboo products on biodiversity and making recommendations for greener trade.

In 2020, the project produced a policy review of bamboo and timber trade regulations around the world and possible ways to facilitate bamboo product trade. A review of the impacts of bamboo value

chains on biodiversity is also being prepared. Once finalised, these reviews will contribute to a larger study on how bamboo trade affects biodiversity and the environment, and recommendations for improving value chains.

In November 2020, the project team also conducted a pilot field survey of bamboo. Staff travelled to a number of counties and cities in Fujian and Zhejiang provinces, China, to interview key export-oriented bamboo businesses about their value chains, raw material supply, product development and international trade and markets. In total, the team visited more than 40 enterprises in 12 counties and cities. The results will form the basis for future interviews and will be included in INBAR's overall review for the Hub.

## Supporting bamboo shoot production in China

INBAR has been working with the Lin'an Bamboo Industry Association on a project to improve the incomes of smallholder farmers in Lin'an, a district of Hangzhou city in Zhejiang province, China.

Between 2019 and 2020, this project helped to establish a new cooperative for farmers specialising in edible bamboo shoots and provided support to an existing one. The team's management, demonstration work and training on

new technologies resulted in the improved quality of shoots, more environmentally friendly forest management, resilience to risks and higher incomes for more than 400 farmers involved.

The project also established a training centre for long-term capacity-building work, as well as a 20-ha 'model' plantation to showcase sustainable bamboo management.

## Conserving landscapes and cultural heritage in China

Between 2019 and 2020, INBAR worked with the UN Educational, Scientific and Cultural Organization (UNESCO) and the Chishui Natural World Heritage Management Bureau to support more sustainable livelihood generation in Chishui, a region of Guizhou province, China.

With its unusual Danxia stone formations, Chishui is part of a UNESCO World Heritage Site, which means a number of residents' traditional livelihoods, such as hunting, logging and mining, are restricted there. The UNESCO-led project supported the revival of bamboo weaving, a traditional craft and intangible cultural heritage in the region.

The project provided hands-on technical and online training on bamboo weaving techniques for almost 400 trainees and identified a number of 'leaders' to strengthen knowledge and awareness of the craft. As a result of the training, a number of Chishui residents set up their own bamboo weaving workshops, producing handicrafts. One workshop, run by Ms. Mou Xiaoyan, now employs 30 workers and produces around 60 woven items a day. Many of the project's direct beneficiaries are women, who are now employed in local workshops or producing their own bamboo handicrafts at home and putting them for sale.

## Promoting bamboo development in the Amazon

Bamboo could be an important nature-based solution in over-logged areas of the Amazon as a way to improve soil quality, regulate water flow and prevent erosion and landslides. It could also be a lucrative and sustainable source of income for locals. Between 2019 and 2020, the 'Bamboozonia' project worked with smallholder farmers across Amazonia territories in Colombia, Ecuador and Peru to improve local governance of the bamboo sector and promote more sustainable management and use of these plants.

In its 15-month run, the project has produced policy studies in each country, which analysed the regulations which support or impede the development of the bamboo sector, and provided recommendations for change. A number of bamboo sector 'round table' discussions were held, which included more than 70 public, private and civil society institutions.

A major focus of the project is transferring knowledge and building capacity for local farmers to manage bamboo. In 2020, everyone from

local leaders and journalists to technicians and farmers took part in 'train the trainers' workshops and courses on sustainable bamboo species identification, management and construction. With the project's support, local radio stations aired awareness-raising content about bamboo's benefits and uses in a number of local languages, including Spanish, Kichwa, Shuar and Ashaninka.



*Participants of a training course in Ecuador learning how to use and manage bamboo.*

## Advocating for Bamboo and Rattan

**INBAR continues to raise awareness about bamboo and rattan on the international stage.**

### Maintaining and building INBAR's network

Despite the challenges imposed by COVID-19, INBAR has continued to engage more countries in its work and build stronger relationships with its Member States.

Throughout 2020, INBAR worked to expand its membership. In the first few months of the year, INBAR Director General Mr. Ali Mchumo travelled to Chad and Gabon, where he held discussions with senior government officials to introduce INBAR's work and discuss how bamboo and rattan can contribute to more sustainable development in these countries. In Beijing, Mr. Mchumo also met with representatives from Burkina Faso, the Dominican Republic, Spain and Sudan. Pakistan has also expressed interest in INBAR membership: in mid-September, Co-Chair of the INBAR Board of Trustees Professor Jiang Zehui held a meeting with the Ambassador of

Pakistan to China, and the issue of membership is now under discussion for approval by the national government.

2020 also provided INBAR with the opportunity to strengthen relationships with existing Member States. In February and March, Mr. Mchumo visited Cameroon, Ghana and Nigeria and talked with key ministries and other stakeholders about ongoing bamboo projects across Central and West Africa. Throughout the year, INBAR Headquarters also hosted a number of meetings with representatives from Member State embassies in Beijing, including the first working group meeting of the 12th INBAR Council, which was well attended by representatives from many INBAR Member States. These meetings enabled INBAR to keep its network informed of ongoing work and activities in an otherwise challenging year for communication.



*Mr. Mchumo (second from left) met with the Prime Minister of Cameroon, His Excellency Professor John Dion Ngute (third from left) in Yaoundé.*



*INBAR staff spoke at a number of bamboo festivals in China, and met with leading representatives from the bamboo sector.*

## Preparing for events in 2021

INBAR is preparing for two events in 2021: the Asia-Pacific Bamboo Symposium (APBAMBOO) 2021 and the International Horticultural Exposition 2021.

Originally scheduled to take place in 2020, APBAMBOO was postponed following the outbreak of COVID-19. During 2020, preparations continued for the tentative new date in 2021, and INBAR is working with the Government of Thailand and local partners in Nan province. The aim of the conference is to provide a platform for leading experts to share knowledge, ideas and technologies related to bamboo's use in the Asia-Pacific region and to develop substantive cooperation in this region and beyond. So far, more than 50 abstracts have been

received from interested participants.

In China, 2020 saw work begin on the INBAR Garden for the International Horticultural Exposition 2021. The event, which will take place from April to October 2021 in Yangzhou, Jiangsu province, aims to showcase how horticulture and greening can be an important part of future urban planning and sustainable lifestyles. INBAR began work on the design and construction of a Garden, featuring two bamboo pavilions and other structures, which will serve as a hub for events which promote bamboo and rattan, including awareness-raising activities, a concert with bamboo musical instruments, and a display of winning pieces from the photo exhibition 'Bamboo and Life'.

## Developing partnerships in China

With rich resources and well-developed bamboo products, markets and technologies, China's bamboo regions have long served as a source of inspiration and technical training for other INBAR Member States. Throughout 2020, INBAR staff visited a number of China's key bamboo-producing areas to strengthen partnerships and promote future international knowledge sharing.

In October, INBAR Deputy Director General Professor Lu Wenming attended the Fourth China (Shanghai) Bamboo Industry Development Summit

Forum to introduce INBAR's achievements and projects to the participants of policymakers, researchers and private sectors. In Qingyuan county, Zhejiang province, staff presented a bamboo product design competition and technology summit for a potential partnership with local government on bamboo industry development.

In November, INBAR took part in bamboo festivals. INBAR Director General Mr. Ali Mchumo delivered speeches at both the 2020 China International Bamboo Industry Fair in Meishan, Sichuan province, and the 2020 International (Yong'an) Bamboo Ware Fair in

Yong'an, Fujian province, about INBAR's mission and strategy to strengthen partnerships with Chinese local governments in bamboo areas. Other INBAR staff also gave presentations at these events. Mr. Mchumo also led a delegation to Hangzhou and Anji, two important bamboo areas of Zhejiang province, to conduct meetings and build partnerships with local governments, research institutes and bamboo companies. All areas are critical bamboo 'hubs' in China, with a long history of supporting INBAR knowledge sharing and training.

In December, INBAR signed a strategic agreement with Zixi county, Jiangxi province, shortly after attending the Third China (Zixi) Bamboo Industry Development Forum. As an emerging bamboo hub in China, Zixi can help INBAR promote sector development in other Member States. Staff also attended the Bo'ao International Plastics Ban Industry Forum in Hainan province, where they organised a bamboo session during the plenary and set up an INBAR booth with leading bamboo enterprises to showcase their biobased products.

## A strategic partnership with FAO

On 18 November, the Food and Agriculture Organization of the UN (FAO) and INBAR signed a memorandum of understanding, launching a five-year partnership to promote the use of bamboo and rattan for sustainable development.

FAO is a specialised agency of the UN system, established in 1945 to raise levels of nutrition and living standards across its member countries. The new partnership with INBAR aims to scale up work on a number of common goals, such as using bamboo and rattan to contribute to food security, income generation, biodiversity restoration and climate change mitigation and adaptation. Speaking

at the signing ceremony on 18 November, Dr. Qu Dongyu, Director General of FAO, said that the partnership will provide "more prospects to generate, exchange and share key knowledge, innovative products and technologies, as well as data and information related to bamboo and rattan."

A 30-person task force has already been created and is working to put into action a work plan through 2022, which includes joint proposals for resource mobilisation, the coordinated implementation of projects, the development of knowledge products and the exchange of data and information.



*FAO Director Dr. Qu Dongyu addressed participants of the FAO-INBAR Memorandum of Understanding signing ceremony.*

## Conducting Research

***In 2020, INBAR continued to promote the application of new research about bamboo and rattan's applications for sustainable development.***

### Key publications in 2020

INBAR staff finalised 25 publications in 2020, written in Chinese, English, French and Spanish. A full list can be seen on page 19.

At the start of the year, INBAR and the Consultative Group on International Agricultural Research's (CGIAR's) Research Programme on Forests, Trees and Agroforestry (FTA) published the *Manual for Sustainable Management of Clumping Bamboo Forest*: a set of guidelines that comprehensively outline current best practices in the sustainable management of clumping bamboo. Other technical guidelines included a Technical Report, *Establishment of Rattan Plantations*, which was produced by members of INBAR's Rattan Task Force.

Throughout the year, INBAR produced a number of introductory materials, including

brochures for new projects and a longer, more comprehensive brochure, in addition to the 2019 Annual Highlights.

In Africa, INBAR continued to provide technical support to national governments to create strategies for bamboo sector development. In 2020, the national bamboo strategies and action plans for Ethiopia, Ghana and Uganda were published on INBAR's website.

On the national level, INBAR published a number of assessments and analyses relevant to several of its Member States. This included technical manuals and assessments related to ongoing project work in Colombia, Ecuador and Viet Nam, as well as advice on how to integrate bamboo into existing policy priorities for Cameroon, Ethiopia and Ghana.

### Promoting global standards

In 2020, INBAR remained active in developing international standards for bamboo and rattan products as part of the International Organization for Standardization's Technical Committee (ISO/TC) 165, on timber structures, ISO/TC 287, on creating sustainable processes for wood and wood-based products, and ISO/TC 296, on bamboo and rattan.

INBAR is the convener of an ISO/TC 165 Working Group focusing on structural uses of bamboo. In 2020, the Working Group continued its efforts to develop three standards for structures using round bamboo, engineered bamboo products and bamboo composites. Once completed, the standards should allow for uniform testing of these structures' physical and mechanical properties.

In its capacity as a 'liaison A' organisation of ISO/TC 296, INBAR continued to provide technical advice to the work of the Committee and to encourage more countries to become participating members. With INBAR's support, in 2020 the Committee published four ISO standards: one on standard terminology for bamboo and bamboo products, and three for bamboo charcoal. An additional four standards are currently being developed, of which INBAR is leading two.

INBAR is also a liaison A organisation of ISO/TC 287, meaning that it provides technical advice and inputs to the work of the Committee. INBAR Deputy Director General Professor Lu Wenming attended the virtual plenary meeting of TC 287 in March.

## Providing technical expertise

INBAR's Task Forces, which comprise experts from around the world, are playing an increasingly important role in the fulfilment of INBAR's mission as advocates, technical advisors and trainers.

In 2020, members of INBAR's Construction Task Force contributed to the INBAR online seminars 'Bamboo: A Very Sustainable Construction Material', which attracted more than 1300 participants from 74 countries. Topics included the architectural and structural uses of round bamboo construction and engineered bamboo. The 2019 International Bamboo Construction Competition, which was developed with the support of Task Force members, won an award from the Chinese Society

of Forestry in 2020.

Members of the Task Force on Rattan Uses and Development published an INBAR Technical Report, *Establishment of Rattan Plantations*, which contains voluntary guidelines. Several members also took part in a September webinar on the sustainable management and use of rattan resources.

2020 also saw the establishment of two new Task Forces: one on sustainable bamboo management, and one on renewable energy. In the coming years, these Task Forces are expected to play an important role in pooling knowledge and generating new research in and understanding of these areas of bamboo.

## Contributing to international forestry research

CGIAR's research programme FTA is the world's largest research for development programme to enhance the role of forests, trees and agroforestry in sustainable development and food security and to address climate change. As one of the partner organisations of FTA, INBAR has continued working on a number of research items with FTA support to build a knowledge database for bamboo and rattan.

Research areas in 2020 included bamboo forests' ecosystem services, a global review of bamboo's potential to reduce emissions and

how this can be measured, bamboo and rattan conservation and sustainable management, bamboo renewable energy, and bamboo's role in the circular economy, for landscape restoration, as fodder and in water regulation. Seven research reports have been published online, with another seven on the way. (A full list of FTA-supported reports published in 2020 can be seen in the Publications section at the back of this report.) INBAR staff have presented this research at such events as the Global Landscapes Forum (GLF) in June and the FTA digital Science Conference in September.



*The guidelines developed by the Rattan Task Force should promote more sustainable rattan management and use.*

## Publications

A full list of INBAR publications can be found on the online Resource Centre: [www.inbar.int/resources/](http://www.inbar.int/resources/). All the publications listed below are in English unless otherwise stated.

\* indicates publications produced with FTA funding.

### • Annual Highlights

*Annual Highlights 2019* (Chinese, English, French and Spanish)

### • General Information

*The International Bamboo and Rattan Organisation: An Introduction* (Chinese, English, French and Spanish)

Brochures: *Dutch-Sino-East Africa Bamboo Development Programme: Phase II; Cameroon 'The Restoration Initiative' Project*

### • BRU

Volume 1 Issue 1 (September): 'Bamboo, Rattan and Sustainable Development'

Volume 1 Issue 2 (December): 'Conservation and Communities'

### • Technical Reports

\**INBAR Technical Report #42: Establishment of Rattan Plantations*

### • National Bamboo Strategies

*2019-2030 Ethiopian Bamboo Development Strategy and Action Plan*

\**2019-2029 Uganda National Bamboo Strategy and Action Plan*

*Ghana Bamboo and Rattan Development Strategic Plan, 2020-2024*

### • Working Papers

\**Assessment of Bamboo Forest Ecosystem Services in Thanh Hoa Province, Viet Nam*

\**Assessment of Ecosystem Services from Bamboo-dominated Natural Forests in the Coffee Region, Colombia*

*Bamboo Policy Integration Analysis: Cameroon*

*Bamboo Policy Integration Analysis: Ethiopia*

*Bamboo Policy Integration Analysis: Ghana*

*Bamboo Resource Assessment in Five Regions of Ghana*

*Bamboo Value Chain Study: Ghana*

*Evaluación regional de recursos de bambú mediante la aplicación móvil* (Spanish only)

\**Guidelines for Lung Bamboo (Bambusa longissima sp. nov.) Propagation by Offsets and Planting*

*Life Cycle Assessment for Key Bamboo Products in Viet Nam*

*Manual for Bamboo Agroforestry Systems in Ghana*

\**Manual for Sustainable Management of Clumping Bamboo Forest*

\**The Use of Bamboo for Landscape Restoration in Central and West Africa*

## • Academic articles published by INBAR staff in 2020

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- Leng, Y., Xu, Q., Harries, K., Chen, L. and Liu, K. (2020) 'Experimental study on mechanical properties of laminated bamboo beam-to-column connections', *Engineering Structures*, 210, p110305.
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## Events

*INBAR webinars are presented in italics in the list below.*

<b><i>Webinar: Green Development with Bamboo in Europe, 28 May</i></b>	<i>A discussion of bamboo's potential uses in Europe.</i>
<b>GLF Digital Summit 2020, 3–5 June, Virtual</b>	INBAR staff took part in this forum to discuss bamboo and rattan's contributions to the theme 'Food in a time of crisis'.
<b><i>Webinar: Assessing Ecosystem Services from Bamboo Forests, 16 June</i></b>	<i>An introduction to the framework for assessing ecosystem services from bamboo forests.</i>
<b><i>Webinar: Innovation, Application and Diversification of Bamboo Products, 17 June</i></b>	<i>Technical advice on how to promote bamboo sector industrialisation.</i>
<b><i>Webinar: Bamboo for Climate Change and Carbon Market Opportunities, 23 June</i></b>	<i>A summary of bamboo's potential for reducing carbon emissions.</i>
<b><i>Webinar: Soil and Water Conservation with Bamboo, 30 June</i></b>	<i>A discussion of the most recent research into bamboo's role in soil and water conservation.</i>
<b><i>Webinar: Land Restoration with Bamboo, 7 July</i></b>	<i>A look at how bamboo can be used to restore degraded landscapes.</i>
<b><i>Webinar: Bamboo in Conservation of Endangered Species, 14 July</i></b>	<i>An introduction to the relationships between bamboo, other species and conservation.</i>
<b><i>Webinar: Bamboo Farming Systems Development, 21 July</i></b>	<i>An overview of the ways and means by which bamboo can be integrated into farming systems.</i>
<b><i>Webinar: Bamboo for Smallholder Income and Food Security, 23 July</i></b>	<i>Examples of bamboo value chains for shoots, juice, wine and fodder.</i>
<b><i>Webinar: Bamboo for Smallholder Income and Energy Security, 30 July</i></b>	<i>A focus on different enterprise models related to bamboo and energy.</i>
<b><i>Webinar: Pro-poor Livelihood Development Approach using Bamboo, 4 August</i></b>	<i>An exploration of different pro-poor rural livelihood development approaches used by different countries and organisations.</i>
<b><i>Webinar: Green Economy Development in Mountain Regions with Bamboo, 7 August</i></b>	<i>Examples of how bamboo can be used for socio-economic development in mountainous regions.</i>
<b><i>Webinar: Affordable and Clean Energy: Harnessing the Potential of Bamboo for Renewable Energy, 12 August</i></b>	<i>An introduction to bamboo energy technologies used in African countries, and their environmental implications.</i>

<b>Webinar: Three Case Studies of National Bamboo Industry Development</b> , 14 August	<i>Three cases of bamboo sector development from China, India and Viet Nam.</i>
<b>Webinar: Bamboo Standardisation and Innovation</b> , 18 August	<i>An outline of the latest work creating standards for bamboo products.</i>
<b>UN Day for South-South Cooperation</b> , 12 September, Global	INBAR staff took part in a number of events, including a roundtable discussion in China and an online webinar hosted by the UN Office for South-South Cooperation.
<b>Webinar: Production of Bamboo Charcoal, Briquettes and Pellets and their Applications</b> , 15 September	<i>An introduction to different bamboo energy products and their applications.</i>
<b>World Bamboo Day</b> , 18 September, Global	INBAR Headquarters, Regional Offices and Member States held events to celebrate bamboo's uses around the world.
<b>Webinar: Bamboo Machine and Equipment Development</b> , 22 September	<i>An overview of the development of bamboo processing technologies.</i>
<b>Webinar: Sustainable Management of Rattan Resources and Establishment of Rattan Plantations</b> , 30 September	<i>Best practices for rattan plantation establishment and management.</i>
<b>'Under the Bamboo Tree': Labarintho dell Masone Event</b> , 3–25 October, Parma, Italy	This event was coorganised by INBAR and took place during October, with each week dedicated to a different aspect of bamboo use.
<b>Fourth China (Shanghai) Bamboo Industry Development Summit Forum</b> , 10–12 October, Shanghai, China	INBAR staff delivered a speech at the forum.
<b>Webinar: Bamboo Pulp and Paper</b> , 13 October	<i>A discussion about the sector's development so far and in the future.</i>
<b>Webinar: Introduction to Bamboo Panel and Board Production</b> , 20 October	<i>The different processing technologies, product development and applications of bamboo panels, boards and fibre composites.</i>
<b>Bamboo Product Innovation Design Competition (Qingyuan)</b> , 26–27 October, Zhejiang, China	INBAR staff made up part of the jury at this competition.
<b>Flag-Raising Ceremony for the Republic of Fiji</b> , 27 October, Beijing, China	Representatives from embassies of INBAR Member States, Observer States and several non-Member Pacific island countries joined this event to celebrate the accession of Fiji to INBAR.
<b>Webinar: Bamboo Eco-tourism Models</b> , 27 October	<i>A discussion of the benefits and economic potential of bamboo eco-tourism.</i>
<b>GLF Biodiversity Digital Conference</b> , 28–29 October, Virtual	INBAR staff spoke in a number of sessions at this conference about bamboo and rattan's role in biodiverse landscapes.

<b>Webinar: Bamboo Products and Health</b> , 29 October	<i>A look at some of the bamboo and bamboo-derived products with applications for health and welfare.</i>
<b>Webinar: Architectural Use of Bamboo Culms</b> , 3 November	<i>The first webinar in the series 'Bamboo: A Very Sustainable Construction Material', which considered different forms of bamboo construction.</i>
<b>2020 China International Bamboo Industry Fair (Meishan)</b> , 3–4 November, Sichuan, China	INBAR representatives delivered a keynote speech and held bilateral meetings with the local government.
<b>2020 International (Yong'an) Bamboo Ware Fair</b> , 6–8 November, Fujian, China	INBAR staff gave a keynote speech and presentations at this event.
<b>Webinar: Structural Use of the Bamboo Culm (part 1)</b> , 10 November	<i>The second webinar in the series 'Bamboo: A Very Sustainable Construction Material'.</i>
<b>Webinar: Structural Use of the Bamboo Culm (part 2)</b> , 17 November	<i>The third webinar in the series 'Bamboo: A Very Sustainable Construction Material'.</i>
<b>FAO and INBAR Memorandum of Understanding Signing Ceremony</b> , 18 November, Virtual	The two organisations signed a strategic five-year partnership for future collaboration.
<b>Webinar: Architectural Use of Engineered Bamboo</b> , 24 November	<i>The fourth webinar in the series 'Bamboo: A Very Sustainable Construction Material'.</i>
<b>FAO-Center for International Forestry Research Workshop: Innovative Technologies for Sustainable Forestry and Sustainable Forest Management in Asia and the Pacific</b> , 30 November–3 December, Virtual	INBAR staff gave presentations on the international market of bamboo and rattan commodities.
<b>Webinar: Structural Use of Engineered Bamboo</b> , 1 December	<i>The final webinar in the series 'Bamboo: A Very Sustainable Construction Material'.</i>
<b>Webinar: Local Bamboo Development Cases (China)</b> , 8 December	<i>Three examples of bamboo sector development in China: Anji, Qingyuan and Yong'an counties.</i>
<b>Third China (Zixi) Bamboo Industry Development Forum</b> , 16–18 December, Jiangxi, China	Shortly after attending this event, INBAR signed a strategic partnership agreement with Zixi.
<b>Webinar: Bamboo for Conservation of the Giant Panda</b> , 22 December	<i>A discussion of giant panda conservation, including recommendations for the future.</i>
<b>Bo'ao International Plastics Ban Industry Forum</b> , 29–31 December, Hainan, China	Bamboo was the subject of several speeches, a panel discussion and an exhibition booth at this forum.

## The Republic of Fiji joins INBAR



INBAR was delighted to welcome the Republic of Fiji as its latest Member State in September 2020. Fiji is INBAR's 47th Member State, and the 15th in the Asia-Pacific region.

INBAR has cooperated with the government of Fiji before on a number of activities. Over the past few years, Fiji's Minister for Women, Children and Poverty Alleviation and Minister for Forestry have both visited INBAR Headquarters; INBAR also coorganised an event with the government, 'Bamboo for climate change action in Small Island Developing States', at the UN climate change conference in 2017, for which Fiji held the presidency.

In October, a flag-raising ceremony was held at INBAR Headquarters in Beijing to mark Fiji's accession. Speaking at the ceremony, the Ambassador of Fiji to China, His Excellency Mr. Manasa R. Tagicakibau, said that bamboo was already a key part of life and culture for Fiji and other Pacific island states, and assured attendees that Fiji would be "taking bamboo seriously" for sustainable development moving forward. Professor Jiang Zehui, the Co-Chair of INBAR's Board of Trustees, expressed her hope that Fiji's membership of INBAR would "usher in a new era of... sustainable development of the bamboo and rattan industry in Oceania and the world."



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