

## INBAR welcomes Liberia as its 41<sup>st</sup> member



With its accession to INBAR, Liberia is now the Network's 18th African member, an important development in a continent that is showing increasing interest in harnessing bamboo and rattan for improved rural livelihoods and the development of green economies. Liberia has a long history of using bamboo and rattan: the plants are used in a range of economic activities that benefit rural communities, and many local businesses produce bamboo and rattan furniture, crafts, and household items.

And with its membership in INBAR, the country is now poised to gain valuable new knowledge and expertise from its African neighbours to boost the productivity of its bamboo and rattan resources further. Speaking at the accession ceremony in Beijing, Liberia's Ambassador to China, H. E. Dudley McKinley Thomas, explained that bamboo and rattan are a part of daily life in many parts of the country, and that working with INBAR has big potential for developing these sectors: "The fact that we are a bamboo and rattan resource country makes us a natural partner for INBAR. We look forward to sharing our expertise and gaining useful policy, technical, and business knowledge from other countries."

# ANNUAL REPORT 2015

## South-South Cooperation

- Launching the Global Assessment of Bamboo and Rattan**
- Informing policy processes**
- Promoting bamboo and rattan for climate change**
- Strengthening international standards**

## International Network for Bamboo and Rattan (INBAR)

INBAR, the International Network for Bamboo and Rattan, is an intergovernmental organization bringing together some 41 countries for the promotion of the ecosystem benefits and values of bamboo and rattan.

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## International Network for Bamboo and Rattan (INBAR)

The International Network for Bamboo and Rattan (INBAR) is the multilateral development organisation of 41 Member States for the promotion of bamboo and rattan. INBAR supports its members to include bamboo and rattan in their sustainable development action plans and green economy strategies. It promotes innovative ways of using bamboo and rattan to improve rural livelihoods, protect the environment, address climate change and issues of international bamboo and rattan trade and standards. INBAR connects a global network of partners from government, private and NGO sectors to promote a global agenda for sustainable development using bamboo and rattan.



## International Network for Bamboo and Rattan (INBAR)

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## Message from the Chair and Co-chair

Last year was a pivotal one for sustainable development. For the first time, the international community agreed on a commitment to limit global temperatures to 2°C, and the United Nations launched its Sustainable Development Goals (SDGs), ambitious successors to the Millennium Development Goals.

These major accomplishments demonstrate a global commitment to sustainability and green economic development. They also represent a unique opportunity to promote bamboo and rattan as strategic resources to reduce the impacts of climate change and bring climate-smart solutions to millions of rural communities across the Global South.

Six of the 17 SDGs adopted by the UN are directly relevant for bamboo- and rattan-producing countries. They target poverty reduction, energy, housing and urban development, sustainable production and consumption, climate change, and land degradation.

Bamboo and rattan could be used as alternative crops, for instance, to aid land restoration, strengthen resilience, and support post-disaster recovery. Their production could also generate sustainable livelihoods, and bamboo in particular could provide an important source of biomass energy.

The UN Framework Convention on Climate Change (UNFCCC) is a high level political agreement that will guide countries and international actors on how they will progress to address climate change in the years ahead. As such, this agreement can be used to unlock new investments in bamboo and rattan development.

These plants offer multiple climate change mitigation and adaptation solutions, and as countries set targets to reduce emissions and global warming, they can be harnessed to increase forest coverage, provide clean energy, reduce land degradation, support climate-smart agriculture, and deliver sustainable options for rural development across Asia, Africa and Latin America. The potential is immense.

As the global community strengthens its resolve and rises to the many challenges presented by climate change, INBAR will continue to promote the benefits of bamboo and rattan. Building on the support delivered to our Member Countries last year, and our input to major international events and meetings – from the World Forestry Congress to COP 21 – we will continue to press the case for bamboo and rattan, and ensure that these strategic resources are properly recognized by decision makers and planners.



**Maharaj Muthoo**  
Chair, INBAR Board of Trustees



**Jiang Zehui**  
Co-chair, INBAR Board of Trustees

## Message from the Director General

2015 was an important year for INBAR as we continued to raise the global profile of bamboo and rattan. We were invited to contribute “on a regular basis” to the UN’s main advisory body on sustainable development, the Economic and Social Council, and presented evidence at a series of important international meetings, including: the United Nations Forum on Forests, the Conference of Parties (COP) 12 of the United Nations Convention to Combat Desertification (UNCCD), the World Forestry Congress, and the United Nations Framework Convention on Climate Change, COP 21.

We also welcomed our 41st member, Liberia, and launched a major new initiative, the Global Assessment of Bamboo and Rattan (GABAR), designed to help countries and development partners harness the many climate-smart benefits of bamboo and rattan in their national green economy plans and development agendas.

Planned as a \$100 million programme, GABAR aims to transform bamboo and rattan production across the Global South, delivering a range of support to countries and development partners, including: a comprehensive assessment of opportunities and challenges; policy and strategy recommendations; detailed inventories; and an information and knowledge sharing platform. GABAR has already received important commitments from Member States and collaborating organizations: the UK’s Kew Botanical Gardens and China’s International Center for Bamboo and Rattan (ICBR) are helping INBAR to produce a peer-reviewed checklist of bamboo and rattan species; we are working with FAO to collect national forestry statistics for bamboo and rattan in INBAR member states; and the International Union for Conservation of Nature (IUCN) is carrying out a study into the invasiveness of bamboo with recommendations for bamboo plantations.

The core of GABAR and INBAR activities is South-South collaboration – the sharing of knowledge and expertise among partners in the Global South. In 2015 this involved three China-funded international training courses with our partner, the International Center for Bamboo and Rattan (ICBR), and the development of two major training facilities – an African bamboo center in Ethiopia and a tropical bamboo training center in Sanya, China. Bamboo and rattan are natural elements for South-South cooperation: they grow in Africa and Latin America close to millions of rural communities, and much of the expertise required to manage and develop bamboo and rattan resides in Asia. Last year, INBAR took part in several UN-sponsored global debates about South-South Cooperation to make this point.

In 2015, this also evolved into an exciting South-South-North collaboration, with INBAR harnessing the know-how of partners in Europe and Asia. One particular initiative will see the Netherlands, a major importer experienced in bamboo production, marketing and standards, join China and support the development of fledgling bamboo sectors in Ethiopia, Kenya and Uganda. INBAR can look back on 2015 as a pivotal year for the organization – one that we can build upon to deliver the solutions that countries need to tackle climate change, alleviate poverty, and achieve green and inclusive development for all.



**Hans Friederich**  
Director General

# Strategic Direction: South-South partnerships

*For South-South cooperation and the exchange of know-how, bamboo and rattan are natural elements. INBAR uses a South-South partnership approach to support bamboo and rattan resource countries, using these strategic resources to protect landscapes, create jobs and grow green economies.*

## Bamboo driving Africa's green economy

**A new trilateral partnership launched last year transfers know-how on bamboo development between China, The Netherlands and three African countries - Ethiopia, Kenya and Uganda. Facilitated and managed by INBAR, the initiative links China's bamboo business knowledge for poverty reduction and livelihoods development, with the Netherlands' bamboo sector expertise in production, marketing and standards.**

Bamboo brings to many African countries a significant untapped potential for generating rural income, restoring degraded landscapes, and combating climate change. While fledgling bamboo sectors in Ethiopia, Kenya and Uganda demonstrate significant promise, they require additional capacity to substantially enhance production and initiate green economies.

This capacity is being delivered by China and the Netherlands – part of an initiative launched last year at COP 21. Facilitated and managed by INBAR, this South-South-North knowledge sharing partnership will help the three African countries assess their bamboo resources and build business models that create jobs and expand local industries.

China, as the world's largest producer of bamboo products, offers guidance on using bamboo to alleviate poverty and create viable rural livelihoods, and the Netherlands, as the world's largest importer of bamboo products, provides additional expertise in production, marketing and international standards.



### Assessing and developing bamboo resources

The initial step in any effort to develop a bamboo sector is assessing what varieties exist - and where. The initiative will conduct surveys and assessments of bamboo resources and value chains, and use this information to develop business plans, transfer new technologies, and provide capacity strengthening opportunities – on bamboo resource management, processing, design and marketing.

In order to encourage investments in bamboo development, the partnership will also include investor and industry tours and workshops; trade dialogues – on policy, custom codes and standards; and capacity building on bamboo standardization for African national standards bureaus and the private sector.



*African bamboo sectors require additional capacity to enhance production.*

## Harnessing bamboo for land restoration

In addition to the income-generating potential of bamboo, the initiative will also help Ethiopia, Kenya and Uganda reap benefits from the plant's land restoration benefits. The partnership will plant bamboo on degraded lands; conduct life-cycle analyses and develop carbon accounting methodologies for industrial bamboo products; and develop climate-financing for bamboo reforestation efforts.

These plans were presented at COP 21 in Paris where a panel of senior policy makers and a bamboo business leader held a special consultation outlining how they will work together and use bamboo as a climate-smart tool – to drive economic growth, reduce poverty, and help protect forests and landscapes.

Describing the potential in Uganda, State Minister for Environment, H. E. Flavia Munaaba, commented: "Bamboo can produce fuel, food, and income for rural communities. We also see its value for land restoration, for conserving biodiversity, and as a practical and sustainable material for our construction sector."



## NEWS IN BRIEF

### A bamboo strategy for Kenya

INBAR helped facilitate a national consultation to integrate bamboo policy guidelines with Kenya's national forestry policy – providing expertise and development options informed by the organization's long international experience. The consultation brought together several government agencies, development partners, and private sector players to discuss how Kenya could harness its bamboo resources. The result was a framework that promotes bamboo trade, land restoration efforts, biomass gasification for small-scale electricity production, and a trial tobacco-to-bamboo replacement scheme.



Kenya State Secretary, Alice Kandia (left), leads discussions at the Kenya National Bamboo Consultation.

## Supporting China's lead on South-South partnerships

INBAR contributed to two international south-south meetings hosted by China last year. The first, Eco-Forum Global, held in Guiyang in June, brought together ministerial officials, UN representatives, and entrepreneurs and experts from across China and beyond. INBAR organized a side event promoting bamboo and rattan as natural elements of South-South cooperation. The event included the Ambassadors of Peru and Ethiopia, and Liu Dongsheng, Vice-Minister of China's State Forestry Administration.

INBAR also attended the South-South Cooperation on Climate Change (SSCCC) Forum at COP 21 in Paris where we presented the benefits of bamboo and rattan for climate change adaptation/mitigation. Held at the China Pavilion, the event provided an opportunity to engage with decision makers and development planners and propose ways they could harness these strategic resources. The INBAR presentation also showcased China's leadership and the myriad ways in which the country had harnessed bamboo and rattan as drivers of its growing green economy.



INBAR's team at the China Pavilion, pictured alongside Dr. Xie Zhenhua (Center-left), China's Special Climate Change Representative.

## Strengthening Latin America's bamboo sector

In 2015 INBAR organized a meeting in coordination with Argentina's Ministry of Agriculture and the Provincial Government of Buenos Aires to bring together regional partners and specialists to discuss the opportunities and challenges facing Latin America's bamboo sector. The Conference was the first in Latin American to focus on the region's monopodial bamboo resources.

Delegates from Argentina, Brazil, Chile, and other Latin American countries shared new innovations, business strategies, and development projects, offering insights and solutions to drive the region's green economic development forward. INBAR had positive discussions with officials from Argentina's Ministry of Agriculture who showed significant interest in future collaborations. Meetings were also held with the School of Industrial Design at the University of Buenos Aires, Argentina's National Bamboo Project, and several private sector enterprises.

# Informing and influencing global policy

*Informing and influencing policy are key strategies that INBAR uses to increase awareness of the benefits of bamboo and rattan and accelerate the development of these resources in low and middle-income countries. In 2015 we contributed to the development of new standards to help strengthen the trade of bamboo products, and provided new insights and input to high-level dialogues and events.*

## Supporting the development of new bamboo and rattan standards

**Without industrial, technical, environmental and other standards, international business cannot function. For bamboo and rattan, INBAR is involved in ongoing standards development with a number of international groups and technical committees to ensure that the trade of these strategic resources continues to grow.**

Although bamboo and rattan are already guided by standards – international trade and forest products, for example - more specific standards, and the guidelines and certifications they inform, are needed to strengthen international business and improve the livelihoods of the local communities that maintain these resources.

INBAR's building code standards work with national partners has resulted in the creation of national and provincial building codes in Colombia, Ecuador, Peru, and India.

Last year, INBAR also provided input and advice to a process resulting in the creation of a new bamboo and rattan Technical Committee approved by the ISO, to be hosted by China. INBAR works with colleagues at China's International Center for Bamboo and Rattan (ICBR) who are responsible for its finalization.



*ISO Secretary, Rob Steele (Seated Center), on a visit to INBAR headquarters in Beijing.*

INBAR works with a number of technical partners and the International Standards Organization (ISO) to improve existing standards and develop new ones. Alongside experts and member countries, for example, INBAR has been funding and helping to update a standard for round culm bamboo construction under ISO Technical Committee 165 (timber structures: ISO22157-1).

This covers structural applications of bamboo used in construction and technical work towards a new standard on strength grading. This standard specifies test methods for evaluating the physical and strength properties of bamboo culms: moisture content, mass per volume, shrinkage, compression, bending, shear, and tension.

The Committee is needed because existing timber-related standards and committees do not fully cover bamboo and rattan. It will help specify definitions of bamboo and rattan products to reduce disputes, and improve product quality to comply with the requirements of import criteria for green products.

China's State Forestry Administration (SFA) and the Standardization Administration of China (SAC), ISO's member in China, have provided significant support to the Committee. Referring to the Committee's creation, Mr. Chenguang Guo, member of the new technical committee and Deputy Director General of SAC's International Cooperation Department commented: "We look forward to advancing this important area through the new ISO technical committee and working with other organizations to develop high quality, relevant international standards for bamboo and rattan."

### Achieving a post-2020 climate change agreement

To non-experts, the COP negotiations are a complex political process. INBAR has worked to demystify these for its Member States, reviewing the treaty texts, matching them to Sustainable Development Goals, and presenting a practical briefing for countries to use which outlines clear entry points where bamboo and rattan can attract new investments as part of their national climate change action plans.



*INBAR Co-Chair, Prof. Jiang Zehui, met Canada's Ambassador to China, Mr. Guy Saint-Jacque, to discuss Canada's climate change agenda.*

INBAR's briefing shows that potential new funding for bamboo and rattan lies in national targets and action areas that countries will prepare for the COP negotiations – called Nationally Determined Contributions. These targets specify where each country will act to reduce emissions that cause global warming, including: forest cover, clean energy technologies, reducing land degradation, climate-smart agriculture, capacity strengthening for rural development, and the transfer of new technologies and best practices for rural livelihoods.

### Helping countries meet their Sustainable Development Goals

In September 2015, the global development community finalized the '2030 Agenda for Sustainable Development' at the United Nations General Assembly, and INBAR worked with its member countries to promote the important benefits that bamboo and rattan could bring to the outcome of this important event – the Sustainable Development Goals (SDGs). INBAR produced a policy briefing explaining how countries and development partners can harness these resources to add value to their actions plans for sustainable development and achieve their SDGs. Six of the 17 SDGs are directly relevant for bamboo and rattan producing countries and their green economy plans. They target: poverty reduction, energy, housing and urban development, sustainable production and consumption, climate change, and land degradation. They all contribute to a seventh goal – stronger implementation and partnerships.

### Bamboo and rattan at the United Nations Forum on Forests

INBAR presented two statements at the plenary during the High Level Segment of the 11th session of the United Nations Forum on Forests (UNFF). INBAR's main statement stressed the importance of GABAR, the Global Assessment of Bamboo and Rattan, and requested UNFF members to support the programme. A second statement reconfirmed INBAR's interest in joining the Collaborative Partnership on Forests, an informal voluntary partnership between 14 organizations and secretariats to promote sustainable forestry management. INBAR's statement in support of its inclusion in the Partnership stated: "Bamboo and rattan are arguably the most valuable Non-Timber Forest Products (NTFPs). They bring significant benefits for climate change adaptation, mitigation, livelihoods, the green economy, and the Aichi Targets for biodiversity conservation."



*INBAR's Director General, Dr. Hans Friederich, making the case for bamboo and rattan.*

# Advocacy: raising the profile of bamboo and rattan worldwide

*Last year marked a new stage in INBAR's advocacy efforts. We were invited to contribute on a continual basis to the UN's primary forum on sustainable development, the Economic and Social Council, and contributed to a series of international events – culminating in December's COP 21 in Paris. These offered opportunities to engage with a global audience and raise the profile of bamboo and rattan.*

## INBAR at COP 21

**COP 21 offered a unique opportunity to raise the profile of bamboo and rattan worldwide. INBAR's input to this high-level international event demonstrated the many 'climate-smart' benefits of these strategic resources and how they could be harnessed by countries and development partners to drive green and inclusive development.**

Bamboo and rattan are strategic resources that countries can use to reduce the effects of climate change. This was INBAR's main message at COP 21 in Paris - the culmination of an extremely busy year during which INBAR continued to raise its engagement with decision makers and development partners.

We addressed the event's general assembly – delivering a statement to ministers and political leaders – and participated in a series of meetings and events to discuss 'climate-smart' development and introduce new initiatives designed to leverage bamboo and rattan for green economic growth.



*INBAR Director General, Dr. Hans Friederich, addressing the General Assembly at COP 21.*

### Promoting South-South partnerships

These included contributions to the South-South Cooperation on Climate Change Forum in the China Pavilion where we argued that bamboo and rattan were natural elements for south-south cooperation and launched a new south-south-north initiative that transfers knowledge and expertise from China and the Netherlands to developing bamboo sectors in Kenya, Ethiopia, and Uganda.



*Mr. Xie Zhengdu, China's Special Representative on Climate Change: INBAR is an important player for south-south cooperation.*

INBAR also participated in a session on 'climate-smart' agriculture, hosted by the Association of International Research and Development Centers for Agriculture (AIRCA), where we presented the solutions that bamboo and rattan could bring to millions of rural communities on the frontline against climate change.

These efforts were well received – including by many decision makers. Uganda's State Minister for Environment, H. E. Flavia Munaaba, commented: "Bamboo can produce fuel, food, and income for rural communities. We also see its value for land restoration, for conserving biodiversity, and as a practical and sustainable material for the construction sector." And Mr. Xie Zhenghu, China's Special Representative on Climate Change, emphasized INBAR's unique contributions to South-South development, arguing: "INBAR is an important player for South-South cooperation and bamboo and rattan can play a unique role in efforts to fight global climate change."



### Presenting GABAR

COP 21 provided the perfect forum to introduce the Global Assessment of Bamboo and Rattan (GABAR), INBAR's new flagship project planned as a \$100 million programme which will deliver a full range of support to countries, including the global assessment and inventory of bamboo and rattan, knowledge sharing, capacity building, policy shaping and technical advice.

Two initial contributions were presented – an inventory of known bamboo and rattan resources, compiled by the UK's Kew Botanical Gardens, and a lifecycle analysis report which measured bamboo's environmental impact for the manufacture of durable products and demonstrated that many bamboo products and their processes are carbon neutral.

A collaboration between INBAR, the Netherlands-based company MOSO, and Delft University, the analysis outlines the first scientifically validated process to assess the green credentials of products made from bamboo – a framework for other bamboo producers to assess their environmental performance and strengthen consumer confidence in bamboo's green credentials.

### Post-Paris support to countries

The Climate Change Agreement finalized at COP 21 brings new opportunities for countries to unlock the long-term development investments of bamboo and rattan development. Having tracked the COP 21 process, INBAR is now providing members with practical information on how they can link bamboo and rattan to their national development plans.

## NEWS IN BRIEF

### Contributions to the Bonn Challenge

The Bonn Challenge is a global aspiration to reforest 150 million hectares of the world's degraded and deforested lands by 2020. INBAR attended the initiative's summit in 2015, delivering a statement that reiterated its commitment to restoring five million hectares using bamboo, and further efforts to leverage bamboo resources and link rapid land restoration with improved ecosystem health, increased incomes, climate change adaptation and resilience.



### Rehabilitating degraded land with bamboo

Bamboo has huge potential to rehabilitate degraded lands and protect land under threat from degradation. INBAR took this message to the United Nations Convention to Combat Desertification (UNCCD) for the first time in 2015 – stressing that bamboo is a strategic resource that countries can use to restore their degraded landscapes and reverse the dangers of desertification. The UNCCD's Conference of Parties (COP) 12 provided an opportunity to engage directly with policy makers, natural resource managers and rural development planners – explaining how the unique properties of bamboo could help them in their policies and action plans to combat desertification.



### Bamboo and rattan at the World Forestry Congress

At the World Forestry Congress in Durban, INBAR brought new perspectives and insights on how bamboo and rattan add value to forestry strategies – to seven sessions and events. The meeting provided a platform to launch INBAR's new flagship initiative, the Global Assessment for Bamboo and Rattan (GABAR), and the organization's contributions to Ethiopia's Sustainable Land Management Programme which will use bamboo to reverse degradation across six pilot watersheds.

Speaking at the GABAR launch event, Mr. Zhang Jianlong, Minister for China's State Forestry Administration, welcomed the initiative, commenting: "GABAR is a strategic and worldwide action for the sustainable development of bamboo and rattan." INBAR also hosted a 'bamboo business leader's dialogue' with leading figures in the growing global bamboo sector – to discuss new business models and innovations.



Mr. Zhang Jianlong, Minister for China's State Forestry Administration, welcomes INBAR's launch of GABAR.

## Action research and country support

*INBAR supports its member countries and development partners to harness bamboo and rattan for sustainable development and livelihoods. It does this by managing efforts to develop these strategic resources, demonstrating their 'climate-smart' benefits, and helping countries to include bamboo and rattan in their development policies and strategies. Efforts last year included policy support to Vietnam, Kenya and Ghana, and several capacity strengthening initiatives.*

## Using bamboo to fight climate change

**Bamboo is a strategic resource that helps mitigate and adapt to the effects of climate change. A new initiative launched in China's Guizhou Province last year helped local communities maximize the plant's climate-smart benefits.**



Rising temperatures, increasingly unpredictable rainfall, and extreme weather events pose a significant threat to China's biodiversity and development. Effects are predicted to be particularly harsh in the southern province of Guizhou, where warmer, drier conditions threaten to damage ecosystems and seriously undermine the region's agricultural productivity.

*China's Guizhou Province has one crucial ally in its fight against climate change - bamboo.*

Fortunately, the province has one crucial ally - bamboo. INBAR worked with local forestry bureaus and the Swiss Agency for Development and Cooperation last year to explore how this strategic resource could be harnessed to strengthen community resilience in the Province's Chishui District – an area already targeted by large-scale national conservation and land restoration efforts.

### Climate-smart management – for increased productivity

The initiative introduced practical climate-smart management activities at three pilot sites covering 10 hectares (ha) - 6.7 ha reserved for bamboo culm production and 3.3 ha for bamboo shoots. Management techniques included: appropriate harvesting; removing shrubs and grass; adding bio-fertilizer to soil; preventing the intrusion of livestock, pests and disease; and inter-cropping – introducing other income-generating forest resources.

The application of these management techniques helped participating farmers achieve significant increases in productivity: from 10.8 tons per hectare (t/ha) to 18.73 t/ha for bamboo culms and from 2070 kilograms per hectare (kg/ha) to 5025 kg/ha for bamboo shoots. The increase in bamboo culm production brought additional carbon capture – from 2.8 tons of carbon per hectare (t C/ha) to 3.9 t C/ha, depending on the species of bamboo.

### Socio-economic impacts

There were also important socio-economic impacts since local communities were able to harvest the bamboo and tap into growing markets for sustainable products. As a result, farmer incomes increased by 600 yuan per hectare (yuan/ha) for bamboo culms and 8895 yuan/ha for bamboo shoots.

If the project is replicated and scaled-out across an additional 63,000 ha of China's productive bamboo forests, it is estimated similar interventions could generate 140 million yuan per year, capture up to 213,000 tons of carbon, and mitigate 780,000 tons of CO<sub>2</sub> greenhouse gas emissions.

Bamboo production has also initiated local businesses and enterprises. One of the more lucrative is a pulp and paper mill which uses 100% bamboo - owners claim it is the largest mill of its kind anywhere in the world, producing 800,000 tonnes of pulp per year.

Communities can earn additional gains from the plant's rapid establishment and growth, which allows frequent harvesting, limits exposure to disaster, and provides a quick solution to land degradation - bamboo thrives on problem soils and steep slopes that are unsuitable for other crops, the plant is an effective windbreak, and its sturdy rhizomes and roots regulate water flows and prevent erosion.



### Rising to remaining challenges

But, challenges remain. In particular, the area's bamboo plantations require improvements to their structure and species composition – monoculture continues to expose plantations to the destructive effects of climate change.

In response, the initiative identified risks and proposed practical solutions. Reflecting on field research conducted in the region late last year, which examined the distribution and growth status of several bamboo forests at different altitudes, farmers are encouraged to: match bamboo species with optimal temperatures and precipitation; improve forest structure – introducing species less vulnerable to the pests and diseases likely to emerge under new climate scenarios; and maintain optimal bamboo culm numbers, sizes, ages and density.

Provided these recommendations are taken on board, communities in Guizhou – and beyond - have a resilient and strategic resource to help shield them from the negative impacts of climate change.

### Promoting bamboo charcoal in Jamaica

Jamaica's fledgling bamboo charcoal sector received a significant boost last year – thanks to INBAR, which facilitated the transfer of Chinese knowledge and expertise to the island's bamboo producers. Chinese experts have helped identify and develop value chains, shared national standards, and hosted a visit by Jamaican policy makers and entrepreneurs to see China's strong and growing bamboo charcoal sector in action. The new information will help Jamaica build on current progress. One example is the creation of a national bamboo organization to drive capacity building and investment promotion across Jamaica's rural areas that can benefit from bamboo. Cooperation between China and Jamaica, facilitated by INBAR, promises to bring many benefits and help the country shift to a greener economic approach.



### New tropical bamboo and rattan training center

INBAR contributed to the development of a new research hub last year, designed to promote the climate-smart benefits of tropical bamboo and rattan. Located in Sanya on China's Hainan Island, the Center combines state of the art training facilities and a platform for knowledge exchange. It will offer technical support and training on bamboo and rattan processing and utilization – not only targeting producers in China, but those working across Africa, Asia and Latin America.



Prof. Jiang Zehui (Left), Co-Chair of INBAR's Board of Trustees, opening the new training center in Sanya.

Speaking at the launch in November last year, Jiang Zehui, INBAR's Co-Chair, commented on the Center's vital importance to the continuing global development of bamboo and rattan resources, arguing that other countries could harness China's extensive expertise to ensure rural communities improve production and maximize gains from these strategic resources. The Center received support from China's Ministry of Finance, the State Forestry Administration, and the municipal governments of Sanya and Hainan.



In 2015, INBAR advised Ghana on livelihood options for bamboo and rattan artisans.

### Vietnam: A bamboo development plan for Thanh Hoa

Thanh Hoa province in Vietnam is one of the nation's leading bamboo producers, and also home to some of the country's poorest people. Decades of poorly managed and heavily exploited land have severely degraded farm and forestland. INBAR with the development NGO, Winlock, is working with local government on a provincial plan to develop its Luong bamboo industries. With an estimated 100 million Luong bamboo stems on some 70,000 hectares, the province demonstrates significant potential for bamboo-led economic regeneration. The government has approved the plan, and asked for INBAR's continued support for implementation.

### Strengthening Ghana's bamboo and rattan sectors

Working with the Netherlands Development Organization (SNV) on its project 'Energy, Poverty and Gender in Agro-Processing,' INBAR helped develop several bamboo plantations in northern Ghana last year. In a country where an estimated 78 percent of home and industrial energy is sourced from firewood and charcoal, the main drivers of the country's devastating land degradation, bamboo offers a sustainable alternative.

INBAR also advised the Ghanaian government on the development of its Bamboo and Rattan Craft Village to promote sustainable livelihoods and provide development opportunities for bamboo and rattan artisans in Accra. Assistance was also provided to rattan producers in Kumasi where INBAR continues to provide support and training to District Authority-managed common facility centers.



# Knowledge sharing & learning

*INBAR captures and synthesizes expertise and new learning, targeting this information at specific user groups to inform and influence them. In 2015 our efforts evolved into the Global Assessment of Bamboo and Rattan (GABAR), a learning platform that shares information and knowledge between bamboo and rattan resource countries.*

## South-South approaches to knowledge sharing and learning

**For South-South cooperation and the exchange of know-how, bamboo and rattan are natural elements. They grow mainly in the planet's tropical belt, close to millions of rural communities. And the core expertise in developing bamboo and rattan to protect landscapes, create jobs and promote green economies resides there.**

Local communities are the first step in processing and transforming bamboo and rattan in the value chains that connect these resources with regional and global economies. This illustrates the importance of South-South cooperation as the primary vehicle for bamboo and rattan development. In 2015, INBAR built on its two-decade 'South-South' strategy with two new initiatives: a program to share expertise on bamboo and rattan development between India, Tanzania, Ethiopia and Madagascar; and GABAR – the Global Assessment of Bamboo and Rattan, which will evolve into a knowledge platform offering inventories, assessments and advice on resources, challenges, opportunities, policies and new technologies. In August we provided input to a scoping meeting in Beijing, planned to discuss the strategic directions of the South-South Cooperation on Climate Change (SSCCC).

Our message – bamboo and rattan were natural elements of South-South collaboration and strategic resources that countries could harness to mitigate/adapt to climate change – was then repeated in Paris at COP 21 in the China Pavilion where SSCCC was convened to discuss the role South-South partnerships could play to mobilize support for a post-2020 climate agreement. South-South learning and technical cooperation are the main thrusts behind INBAR's capacity building programme. Alongside China, INBAR's host country, we facilitate technical training, bringing bamboo and rattan professionals and government officials to China from across Africa, South Asia and Latin America. Here, they see the country's well-developed bamboo sector in action - in 'bamboo provinces' such as Anji and Young'an which produce many value-added products and provide jobs and local income for thousands of families. In 2015, over 160 professionals from 32 countries visited China to learn about bamboo and rattan innovations.



*In 2015, professionals from 32 countries visited China to learn about bamboo and rattan innovations.*

## NEWS IN BRIEF

### Learning and technology transfer - India, Tanzania, Ethiopia and Madagascar

Last year INBAR initiated a new programme on South-South knowledge strategies, funded by IFAD, which draws upon the organization's experience and country partnerships to scale-up pro-poor bamboo livelihoods, income generation, and employment creation between three African countries and South Asia. Practices tested and demonstrated in past INBAR-IFAD livelihood programmes are now being promoted to government and development partners in India, Ethiopia, Madagascar and Tanzania. The programme provides training in environmental management and bamboo farming systems development. Partner country agencies in Madagascar and Tanzania have responded by providing funding to create nurseries, paving the way for larger-scale production of bamboo planting material.



*Practices and innovations are being promoted in India, Tanzania, Ethiopia, and Madagascar.*

### Innovations in bamboo housing – Peru and Ecuador

In 2015 INBAR developed discussion and exchange platforms to facilitate mutual agreement on the future technical and institutional reforms needed to further strengthen Latin America's bamboo housing sector. The platforms generated and shared useful knowledge and skills, and trained some seven thousand people – one third of them women. Studies that evaluated and predicted the vulnerability of bamboo forests and bamboo housing to the potential effects of climate change allowed long-term planning, and the development of standards for bamboo housing in Peru and Ecuador have given the housing sector a legal basis that will enable investment and market development. Coordinated with national and local governments in Ecuador and Peru, the project also involved collaborations with SENDAS, CICAP, the Catholic University of Guayaquil, PROGRESO, University San Martin in Lima, and local producer associations: NORANDINO, CECANOR, and Comunidad Campesina de Morrope.

### Raising rattan production in south-east Asia

An INBAR seminar in Hainan, China, brought together representatives from nine countries to share experiences and ideas, and agree on a framework for sustainable rattan development across Asia. Although rattan is one of the most important non-timber forest products in the region, and the core input of its cane furniture industry, production continues to be held back by the absence of platforms that effectively facilitate knowledge exchange. The framework encompasses efforts that include: assessments on what rattan resources are available and where; improvements to the supply of rattan; efforts to broaden markets for rattan products; efforts to enhance understanding of the 'green' credentials of rattan; improvements to production chains; and helping governments to understand and amend policies.



*Participants from nine countries in south-east Asia studied the potential of rattan.*

## Publications

- Annual Report 2014

### Working Papers

- Bamboo construction in Bhutan: A feasibility and marketing study

### Policy Synthesis Reports

- Bamboo for Africa: A strategic resource to drive the continent's green economy
- El bambú: Un recurso estratégico para que los países reduzcan los efectos del cambio climático

### Technical Reports

- Bamboo and rattan species in Africa: Preliminary checklists for consultation and discussion
- Production Consumption Study of the bamboo value chain in Ecuador
- Production Consumption Study of the bamboo value chain in Peru
- Manual for construction with bamboo in Peru

### Technical Bulletins

- Bamboo propagation (8 issues)
- Construir con bamboo

### Position Papers and Statements

- Bamboo, rattan and the SDGs
- Bamboo, rattan and the UN Convention on Climate Change
- Bamboo for land restoration (COP12, UNCCD)
- The climate-smart benefits of bamboo and rattan (COP 21)
- Bamboo and rattan are natural elements for south-south partnerships (SSCCC Forum)

### Background Papers

- Towards a framework for rattan sector development in ASEAN countries

### Fact sheets

- Bamboo as a resource for disaster relief and post-conflict needs: How bamboo can help rebuild the lives of displaced people
- Restoring green and healthy lands
- Bamboo: A strategic resource that can help green the future
- Rattan: A strategic forest resource with a bright future
- INBAR's Global Bamboo Housing Programme: Harnessing technologies for housing
- Engineered bamboo structures: Showcasing sustainable housing technologies

### Brochures

- IFAD-INBAR partnership: IFAD's pioneering support to bamboo development as an engine to improve rural livelihoods
- Global Assessment of Bamboo and Rattan
- The Promise of bamboo and rattan: Two unique resources for green development and rural regeneration
- INBAR's contribution to the Sustainable Development Goals.



## Training and Events

### Training courses and workshops

<b>Training on Bamboo Development and Propagation, February 17-19, Asossa and Benishangul Gumuz, Ethiopia.</b>	This training involved 48 participants, in collaboration with Ethiopia's Ministry of Agriculture.
<b>Training Seminar on Bamboo Industry Small and Medium Sized Enterprises (SMEs), April 9-23, China.</b>	18 young and mid-career officials from 13 selected countries were invited to China to participate in this visiting scholarship programme. It provided a platform for participants to discuss opportunities, challenges, and ideas for bamboo sector development.
<b>RECOFT Study Tour, April 22-28, China.</b>	Participants included 8 government officials from Laos and one RECOFT programme officer. Participants studied the Chinese bamboo sector, particularly processing innovations and policy development.
<b>Training Seminar on the Scientific and Technological Innovation Capacity and Policies of the Bamboo Industry for Asian countries, May 20-June 9, China.</b>	38 participants from 7 Asian countries participated in this training course. In addition to in-house lectures, the group also visited Haikou and Anji to witness China's bamboo sector in action.
<b>WWF New Generation Plantation Study Tour of Bamboo Plantations, June 15-19, Zhejiang, China.</b>	This practical study tour, workshop, and discussion forum showcased eastern China's bamboo plantations and sector.
<b>Training Seminar on Bamboo and Rattan Standardization for Developing Countries, July 2-15, China.</b>	38 participants from 14 developing countries participated in this training course. The training comprised of a series of workshops and six days of fieldtrips in Anji and Taiping.
<b>International Workshop on Industrial and Commercial Development of Non-Timber Forest Products (NTFPs) in a Sustainable Context, August 25-September 13, China.</b>	35 participants from 15 countries participated in a 10-day workshop held in China focused on sustainable bamboo development and integrated rural development, which incorporated lectures and field visits to Anji and Lin'an.
<b>Helping Thanh Hoa Develop a Provincial Bamboo Sector: Learning and Sharing Experience and Lessons from China, September 9, Thanh Hoa City, Vietnam.</b>	14 government participants from Thanh Hoa province in Vietnam studied the development of China's bamboo sector.
<b>Training Seminar on the Sustainable Management and Utilization of Bamboo Resources for African countries, October 8-30, China.</b>	21 participants from 5 African nations were instructed on bamboo industry development and visited China's Zhejiang and Anhui provinces to see successful bamboo sectors in action.

### 2015 Events

<b>International Mountain Forestry Symposium for Hindu Kush Himalayas, January 18-22, Dehra Dun, India.</b>	INBAR made a presentation and discussed collaboration in the region.
<b>Asian Development Bank 4th Meeting of Ministers of Environment of the Greater Mekong Sub-Region, January 26-30, Nay Pyi Taw, Myanmar.</b>	INBAR gave a presentation about inclusive development with bamboo and rattan and contributed to discussions on value chains.
<b>World Sustainable Development Forum, February 5-7, New Delhi, India.</b>	INBAR participated in and gave two presentations at the special event 'Bamboo as Change Agent'.
<b>FICCI - ICIMOD Workshop on Role of the Corporate Sector in Sustainable Mountain Ecosystem Goods and Services, February 6, New Delhi, India.</b>	INBAR participated in the workshop to discuss potential areas of collaboration between INBAR and ICIMOD.
<b>Ministerial Meeting on Bamboo Sector Development, February 12, New Delhi, India.</b>	INBAR made a presentation and held discussions on supporting rural livelihoods.
<b>International Union for Conservation of Nature (IUCN) Headquarters, February 14, Geneva, Switzerland.</b>	INBAR gave a 'brown bag lunch' presentation about bamboo and rattan for nature conservation.
<b>IFAD - EU - INBAR Phase II Project Inception Workshops, March 2-7, Addis Ababa, Ethiopia; Dar es Salaam, Tanzania; Antananarivo, Madagascar.</b>	These inception workshops brought together national project partners to share project procedures and methods, ideas and experiences.

<b>International Workshop on the Role of Small and Medium Enterprises (SMEs) in Bamboo Industry Development, April 9-23, Beijing, China.</b>	This was the first INBAR workshop on SMEs. The wide ranging presentations and discussions highlighted the essential roles that SMEs in the bamboo and rattan sector play, and their potential to contribute more.
<b>Kenya National Bamboo Workshop, April 20-22, Nairobi, Kenya.</b>	INBAR provided expert advice on the development of a national bamboo policy.
<b>11<sup>th</sup> Session of the United Nations Forum on Forests, May 4-15, New York, USA.</b>	INBAR represented its member countries with statements and interventions.
<b>Africa Bioenergy Workshop, May 26-31, ICRAF, Nairobi, Kenya.</b>	INBAR contributed to a policy brief that calls on Sub-Saharan African nations to give more prominence to bioenergy.
<b>International Seminar on Sustainable Rattan Management and Utilization in South-East Asia, June 1-2, Haikou, China.</b>	Attendees produced a series of actionable recommendations for the development of Asia's rattan sector. INBAR signed a programme of work with WWF for collaboration on bamboo and rattan production in the Mekong region.
<b>Eco - Forum Global, June 25-28, Guizhou, China.</b>	INBAR ran a side event combining bamboo for post disaster reconstruction and bamboo for forest restoration, and signed an agreement with the Guizhou Forestry Department for a bamboo project in the province.
<b>National Flag Raising Ceremony to Commemorate Liberia Becoming a Member of INBAR, July 6, Beijing, China.</b>	Liberia became INBAR's 41st Member Country. The ceremony was held at INBAR's headquarters in Beijing and attended by embassy officials.
<b>HSMC Symposium on Sustainability and Bamboo, July 20, Hong Kong, China.</b>	INBAR gave a presentation and discussed possible collaboration.
<b>Non-Conventional Materials and Technologies Conference, August 10-13, Winnipeg, Canada.</b>	INBAR held the inaugural meeting of the "Bamboo in the Urban environment" project with project partners, developed a research agenda for its work under ISO TC 165, and networked with a wide range of potential new partners.
<b>Guadua Festival, August 12-16, Cali, Colombia.</b>	INBAR ran a training workshop for 40 people on bamboo handicrafts.
<b>Global Forum for Agricultural Research (GFAR) Constituent Assembly, August 24-26, Bangkok, Thailand.</b>	INBAR represented the AIRCA alliance at this planning and review meeting and discussed collaboration with GFAR, FAO, and CGIAR centers.
<b>5<sup>th</sup> Asia-Pacific Housing Forum, September 1-4, Hong Kong, China.</b>	INBAR met new and old partners at this Asia housing forum.
<b>First Lady of Timor Leste visits INBAR Headquarters, September 2, Beijing, China</b>	INBAR discussed the potential of bamboo and invited Timor-Leste to become a member.
<b>World Forestry Congress, September 7-11, Durban, South Africa.</b>	INBAR launched the GABAR initiative, facilitated a private sector dialogue, held a press briefing and led discussions at the International Forests and Water Dialogue side event.
<b>Bamboo: A Sustainable Alternative, September 15-22, Buenos Aires, Argentina.</b>	Attendance at this first ever regional southern Latin America bamboo meeting (involving Argentina, Brazil, Chile, Uruguay, and Paraguay) enabled discussions with potential new member nations in the region.
<b>World Bamboo Congress, September 17-22, Damyang, Korea.</b>	INBAR ran an expert discussion session on bamboo and climate change mitigation, and networked widely at this premier event for the world's bamboo community.
<b>29<sup>th</sup> Annual Meeting of ISO Technical Committee 165 (TC-165), September 23, Johor Bahru, Malaysia.</b>	Oliver Frith, INBAR's Global Programme Director, was reappointed as convener of Working Group 12 (Structural Bamboo) and appointed as liaison for TC-165 for the new ISO TC 296 on bamboo and rattan.
<b>SME Trade through Better Understanding of Non-Tariff Measures in the Asia Pacific Region for the Agriculture, Food Processing and Handicraft Sectors, APEC meeting, September 25, Iloilo, Philippines.</b>	INBAR presented on the bamboo and rattan handicraft sector and international trade at this meeting, and discussed enhanced involvement in next year's meeting in Peru.
<b>International Committee of the Red Cross (ICRC) Agronomy Workshop, September 28, Nairobi, Kenya.</b>	INBAR discussed the possibilities of using bamboo in integrated farming systems, and as a strategic resource in the context of relief and rehabilitation.
<b>UNCCD COP 12, October 12-23, Ankara, Turkey.</b>	INBAR presented a statement at the High Level Segment and made two further interventions during discussions about private sector involvement and policy development.
<b>Closing meeting for CFC and EU projects, October 26-30, Quito, Ecuador.</b>	INBAR presented impacts from two projects in Peru and Ecuador: an EU-funded initiative focused on low-cost climate-smart housing, and another supported by CFC which promoted pro-poor bamboo commodity value chains.
<b>CFC Council Meeting, December 7-8, The Hague, Netherlands.</b>	INBAR made a statement on the potential of bamboo and rattan in response to CFC's new direction on private sector development.
<b>UNFCCC COP 21, November 30 - December 11, Paris, France.</b>	INBAR spoke at several side events and made a formal statement at the High Level Segment.

## Board of Trustees

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<b>Global Programme</b>	Oliver Frith, Jin Wei, Li Yanxia, Sun Mai, Durai Jayaraman, Bedilu Kifle, Donald Dickson Kibhuti, Grace Emmanuel Luvanda, Rajaonarison Andrianjaka Hanitriniala
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<b>Regional office staff</b>	Tesfaye Hunde, Biruk Kebede, Michael Kwaku, Paul Osei-Tutu, George Aidoo, Alvaro Cabrera, Paulina Soria, Doris Cangas, T. P. Subramony, Werner Kosemund, Baya Agarwal, S. Anand, Bharat Parekh
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