

# ANNUAL REPORT 2011

International Network for Bamboo and Rattan



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*In partnership for inclusive and green development*

# Message from the Chair and Co-chair

In 2011, INBAR strengthened its partnerships with its member country governments, helping ensure that INBAR as an organisation becomes more sustainable, and enabling it to better respond to opportunities to foster bamboo and rattan-based development as they arise. INBAR welcomed Senegal as a new member country, and enhanced its relationships with multilateral development partners such as the European Union, partnerships that are now bearing fruit.

INBAR's mandate is to enhance the wellbeing of the poor producers and users of bamboo and rattan within the context of a sustainable natural resource base. One of INBAR's notable achievements is its portfolio of successful development models that enable poor rural and urban dwellers to earn incomes from bamboo. As with many organizations that foster innovation and its adoption, a challenge exists for INBAR to successfully enable replication and adaptation of these models in different development contexts – both scaling up and scaling out. This commenced in 2011 with the twinning of more advanced project sites with newer ones, and raising awareness of the potential of bamboo and rattan for sustainable development with stakeholders from INBAR's member countries. The results have been encouraging. With Rio+20 next year, and 2015 and achievement of the Millennium Development Goals only a few years away, INBAR's work has never been more important, nor more urgently needed.

The Board of Trustees extends its continuing gratitude to the Host State for its considerable support to INBAR, and to Bangladesh for its work as chair of INBAR's council-level meetings. We thank the governments of Ecuador, Ethiopia, Ghana and India for hosting INBAR's regional offices, enabling INBAR to reach out regionally more effectively. We also extend our grateful thanks to all INBAR's donors in 2011, and to all its partners, without whom realizing the potential of bamboo and rattan for sustainable development would be impossible.



**Tesfai Teclé**  
Chair, INBAR Board of Trustees



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

# Message from the Director General

One term that regularly recurs in this report on INBAR's achievements in 2011, is Climate Change. This year INBAR commenced three new projects in Latin America designed to enable communities to adapt to climate change, and to mitigate its effects. INBAR enhanced its climate change work with the appointment of a specialist and is now developing a portfolio of projects to address knowledge gaps, and to ensure bamboo is appropriately included in climate change strategies. INBAR strengthened its work on bamboo as a sustainable construction material, in particular in relation to houses that will offer protection to the effects of the extreme weather events expected to occur as a consequence of climate change. Renewable energy is one of the paths to be followed towards reducing the rate of climate change, and INBAR's work on energy from bamboo, in particular for household energy, is steadily increasing.

INBAR also took steps to adapt its work portfolio to address some of the changes in the world since INBAR's "Strategy to 2015" was published six years ago. As the world population heads towards nine billion by 2050, new strategies that promote sustainable production and consumption will be essential. Bamboo and rattan, which grow extensively throughout many parts of the Global South, offer unique opportunities to simultaneously address three issues for inclusive and green development - poverty alleviation, environmental sustainability, and new partnerships for development. INBAR leverages a network of partnerships anchored in the Global South, applies the principles of sustainable development, and inspires the broad-scale application of innovation, to deliver these three foci of development.

A highlight this year was the visit by European Union president, Herman van Rompuy, to our project site in Sichuan province, where he saw first-hand how our work with our partners is resulting in sustainable bamboo businesses just four years after the devastating earthquake.

Networking and developing partnerships are at the heart of our work, and of how we work. As an organisation of the south, we are uniquely placed to foster south-south, south-north and north-south partnerships that address the evolving priorities of the world. We look forward to continue working together with our partners to promote inclusive and green development in the years to come.



**Coosje Hoogendoorn**  
Director General

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# The Council, Board and Staff

## Council

The Council membership on 31st December 2011 comprised:

Argentina	Chile	Ghana	Mozambique	Philippines	Tanzania
Bangladesh	China	India	Myanmar	Rwanda	Togo
Benin	Colombia	Indonesia	Nepal	Senegal	Tonga
Bhutan	Cuba	Kenya	Nigeria	Sierra Leone	Uganda
Burundi	Ecuador	Madagascar	Panama	Sri Lanka	Venezuela
Cameroon	Ethiopia	Malaysia	Peru	Suriname	Viet Nam
Canada					

## Board of Trustees

The 15th meeting of the INBAR Board of Trustees was held in October 2011:

Name	Nationality	Board Position
Tesfai Teclé	Eritrea	Chair
Jiang Zehui	China	Co-Chair
Andrew Bennett	United Kingdom	
Chu Fuxiang	China	
Tachrir Fathoni	Indonesia	
Maharaj Muthoo	India	
Kazuhiko Takeuchi	Japan	
Gerardo Segura Warnholtz	Mexico	
Wu Zhimin	China	
Coosje Hoogendoorn	Netherlands	Director General

## Staff Members on 31st December 2011

### Executive Management

Coosje Hoogendoorn (Director General)  
Li Zhiyong (Deputy Director General)  
Judy Zhu (Treasurer)  
Wang Dong  
Ren Hong

### Environmental Sustainability Programme

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Li Yinna  
Li Yanxia  
Liu Bo  
Yang Hanmei  
Yannick Kuehl

### Livelihoods and Economic Development Programme

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Abraham Bobo  
Bharat Parekh  
Bedilu Kifle Gebretsadik  
Bhargavi Motukuri  
Carmelita Bersalona  
Esperanca Rosita Elias Chamba  
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Liu Kewei  
Oliver Benjamin Frith  
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Agyekum Eric Ofori  
Alvaro Cabrera  
Biruk Kebede  
Doris Cangas Piarquezan  
Kwaku Oppong  
Lorena Nolte  
Luis Puente  
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### Membership Unit

Hao Ying  
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### Development and Communications Unit

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Li Kun  
Sara Gavryck-Ji

### Networking and Partnerships Unit

Andrew Benton  
Liu Qian  
Zhu Zhaohua

### Human Resources, Finance and Services Teams

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He Jun  
Helen He  
Kong Yan  
Ren Ping  
Song Ji  
Sun Shaohui  
Tang Shaoxia  
Yang Jianwei

# Goal 1

## AN EXPANDED, HIGHLY EFFECTIVE NETWORK OF COMMITTED STAKEHOLDERS

**Deepening cooperation:** Bamboo and rattan are resources of the global south. Transferring skills and technologies developed in one country across national boundaries to enable others to grow lies at the heart of INBAR's efforts. In 2011, INBAR maximized opportunities for collaboration not only through new collaborative projects, but also through training courses, workshops, exchange visits and networking activities.

### Member countries

INBAR's member countries are its highest level of partnership. In 2011, Senegal joined INBAR to become its 37th member country, and its 15th in Africa. There is much potential - bamboo has been overexploited in Senegal and is used to make furniture, structures, fences, household utensils and musical instruments. To reduce depletion of the resource the government has restricted the use of bamboo and only official harvesters are permitted to access it, though illegal harvesting continues, threatening the bamboo. INBAR aims to work with Senegal to develop sustainable production strategies for the country, that can meet the demand.



In 2011, INBAR reached out to its member countries with training and awareness workshops on bamboo and rattan for government officials from 34 countries. INBAR developed a state-of-the-art report on new member Burundi's bamboo and rattan sector-a Production-to-Consumption System (PCS) study - which includes actionable recommendations on how the sector can be developed. The report has been presented to the government. Along with our Rwanda PCS study in 2010, our continuing programmes of work in Ethiopia, Kenya, Tanzania and Uganda, and new projects in Madagascar and Mozambique, INBAR is actively developing regionally-applicable development models with bamboo and rattan for East Africa. INBAR is also enhancing the regional applicability of bamboo-based development in Latin America, with a new programme of three projects in Ecuador and Peru based around adaptation to climate change, and with replication in and awareness building activities foreseen for other member countries in the region. In 2011, INBAR co-organised three regional workshops in Colombia, Cuba and Panama.

In 2011, INBAR HQ welcomed official representatives from Argentina, Bangladesh, Burundi, Cambodia, Cameroon, Madagascar, Mozambique, Myanmar and the Philippines.



EU president Herman van Rompuy visited INBAR's project site in Sichuan in May



INBAR's annual International Training Workshop on Integrated Sustainable Development in Mountain Areas and Non-Timber-Forest-Products (NTFPs) attracts participants from all over the world

## Funding partners

INBAR works to enhance the range of practical examples of bamboo and rattan for inclusive and green development. INBAR does this in very close collaboration with its partner funding agencies, which provide the essential financial resources for its work, enabling both INBAR and the agency achieve their goals. In 2011, INBAR worked with funding agencies including the United Nations International Fund for Agricultural Development; European Commission; Ministry of Commerce, China; Common Fund for Commodities; Canadian International Development Agency; International Development Research Centre; Indian Council for Agricultural Research; National Mission on Bamboo Applications, India; Global Fund for Agricultural Research; World Bank; Fredskorpset; American Chamber of Commerce in China; and Ikea in a suite of projects that span the globe, while working with a wide range of implementing partners.

## Training courses and workshops

One of INBAR's strengths is its capacity to inspire and inform on all things related to development with bamboo and rattan. Every year INBAR runs a range of courses designed to enhance awareness and to enable people realise bamboo and rattan's contribution to sustainable development with practical training. This year INBAR ran courses with our partners in Bhutan, China, Cuba, Ecuador, Ethiopia, Ghana, India, Mozambique, Madagascar, Panama and Peru, that trained or increased awareness about bamboo and rattan amongst more than 4000 participants from our member country governments, and existing and potential partner organisations:

Study tours/awareness-raising courses	223 participants
Basic technical training courses	2057 participants
Skills enhancement courses	93 participants
Thematic workshops	1220 participants
National/regional discussion workshops	785 participants
National/regional expert visit and workshops	43 participants



## Bamboo and Rattan Volunteers and Interns

In 2011, INBAR welcomed 12 volunteers and interns to its headquarters. Students from Maastricht School of Management also spent two weeks at INBAR producing reviews of various trade related subjects - studies that are being used to inform INBAR's continuing work on these subjects.



### Rattan review

In 2011 INBAR took steps to evaluate its present and potential roles in fostering better sustainable development with rattan, by conducting a wide-ranging study of the needs and opportunities in the world's rattan sector. The resulting rattan sector support roadmap for INBAR describes a range of urgent needs and opportunities. Amongst others the study recommends:

"The main challenge is to replace the old, depletive production systems with sustainable rattan production, in gardens and community-managed forests. Adding value through certification, innovative designs, value chain development and cleaner processing technologies could lift seven million rural households out of poverty. To make this happen, a combination is needed of local actions and international networking."

The recommendations have been incorporated into INBAR's planning.

## Asia Bamboo and Rattan Young Professionals Scheme

INBAR continued to enable talented young professionals to gain international experience in bamboo and rattan within the framework of the Asia Bamboo and Rattan Young Professionals Scheme in 2011, a scheme that second young professionals between participating organizations. The scheme is funded by the Norwegian agency Fredskorpset and is an evolution of the earlier Bamboo Industry and Education Exchange Programme, also funded by Fredskorpset.



*Alan Castillo, from the Ecosystems and Resources Development Bureau, Government of the Philippines, joined INBAR on a nine-month posting under the Asia Bamboo and Rattan Young Professional Scheme*



*In 2011, INBAR received funding from the American Chamber of Commerce in China to continue its work on bamboo development in Sichuan province, including training on the development of bamboo enterprises - including making enterprise actionplans,, as shown above*



**Innovation and partnerships for inclusive and green development:** Technical innovation in the bamboo sector is not new, but the way the technologies are applied and adopted for development by the poor also requires innovation to ensure they are sustainable. INBAR is pioneering a range of such innovations with its partners to support sustainable long-term development with bamboo, including new types of NGO-profit making company partnerships, fair access to finances, and project "handholding" for new project locations by those in more advanced sites. In 2011, this work made excellent progress, particularly in India with the creation of new public-private partnerships.

### **Inclusive Social Enterprises that complement local NGOs**

In early 2009, INBAR instigated a shift of thinking in the development of the Konkan region of India with support for the launch of NATIVE KONBAC. Registered as a for-profit company with a strongly-defined social mandate, NATIVE KONBAC is uniquely "twinned" with the non-profit organisation Konkan Bamboo and Cane Development Centre (KONBAC), another INBAR initiative set up in 2004, in partnership with the Centre for Indian Bamboo Resources and Technologies (CIBART).

This innovative pairing of a non-profit organisation and a for-profit social enterprise with unified goals is intended to ensure sustainability long after a short-term project period is over. Creating public-private partnerships (PPPs) such as this can help maximize the range of services available to producers and investors - the innovative "twinning" allows for the inclusion of community members as shareholders and so they can adopt venture and other commercial capital as a route for financing. With product orders of over USD 800,000 to the end of 2011, it has improved the financial status and livelihoods of the communities who grow bamboo and process it. Almost 700 artisans are involved, with over 300 directly employed by NATIVE KONBAC in the manufacture of high-value and high-volume bamboo products. In May 2011, NATIVE KONBAC was the first runner-up in the Sankalp Award 2011 in India in May, India's largest Social Enterprise Awards.





## **Twinning Action Research Sites for mutual learning and effective development**

In 2011, in India INBAR twinned a new Action Research Site in Gujarat with its well-established sites in Konkan and Uttarakhand.

Sharing the experiences of more advanced sites with those just starting out is proving to be a rewarding and effective strategy for fostering community-led development. In Gujarat, 5,000 households have been linked into the twinning scheme, and now produce bamboo products for the market. The project, led by CIBART, works with disadvantaged landless tribal communities who used to make their livings from bamboo, but have, over the past few decades, become itinerant workers. The project has been selected by Gujarat's Department of Tribal Development as the best tribal development project in the state in 50 years, and the Chief Minister has visited the project.

## **Training-of-trainers in Madagascar, Mozambique and Ethiopia Action Research Sites from the India and Philippines sites**

In Madagascar in 2011, INBAR and its partners established two Common Production and Training Centres; one in the capital, Antananarivo, and the other in the eastern city of Toamasina. These have already provided hands-on training to over 400 people in skills, such as nursery and plantation management, furniture and handicraft-making, charcoal production and housing construction. The trainers were brought in from INBAR's Action Research Sites in Ethiopia, India and the Philippines, furthering INBAR's contribution to improving South-South cooperation.



### ***New bamboo product technologies in the Philippines***

*INBAR's partner in the Philippines, InHand Abra, has pioneered community-based production of high value bamboo technologies for many years. Recently, InHand prototyped ten product types that involving basic production of the bamboo components by the communities, and technical aspects of the work, such as lamination with resin and/or fibreglass to give the products shape and strength, at the Cottage Industries Training Centre.*



### Financial inclusion of poor rural households

For the many of the poorer sections of society trying to develop incomes from bamboo, fair and sustainable access to credit, and to means of saving, is essential. In 2011, INBAR started working with NATIVE Development Services (NaDS), a Financial Inclusion Institution in Mandla, Madhya Pradesh, India, that has developed programmes for financial inclusion of poor rural households. It builds financial understanding capacity of the target groups, provides microfinance for productive activities, individual household business plans, and links such households to mainstream banks. NaDS now provides capacity-building to 250 members of the Self-Help Groups in IFAD's loan project Tejaswini Rural Women's Empowerment Programme (Madhya Pradesh) in three locations - Mandla, Dindori and Balaghat. A new Action Research Site has been established in Mandla to promote and develop this work, including a livelihoods project for women manufacturing bamboo incense sticks.



# BAMBOO CHARCOAL

## -FOR HOUSEHOLD ENERGY AND SUSTAINABLE DEVELOPMENT

*Hundreds of millions of people in Africa and Asia use charcoal as a source of household fuel - for cooking and for heating. In rural areas producing and/or selling charcoal is an important source of income. Charcoal production can also be a major driver of deforestation. Over the past ten years, INBAR and its partners have been innovating uses and applications for charcoal made from renewable bamboo to test its potential contribution to developing sustainable livelihoods, enhancing food security, and helping reduce environmental degradation.*



### **The advantages of bamboo charcoal production and use include:**

Bamboo is a perennial woody crop that can be harvested annually and non-destructively.

Bamboo maintains an evergreen canopy over the soil, its rhizomes bind the soil and is proven to reduce land degradation.

Where wood for charcoal is in short supply, bamboo can provide a sustainable alternative within five years after planting.

Producing charcoal can be a component of integrated development strategies with bamboo – combining sustainably managed bamboo forests with a range of product lines, plus increased food security from bamboo shoots and/or the availability of household fuels such as bamboo charcoal, and involving producers at many stages of the value chain.

Production itself can be done as part of an integrated bamboo processing unit, using any part of the bamboo from waste upwards to make the charcoal. The gasses and smoke released during charcoal production can even be used as a preservation treatment for the bamboos being used to produce other products.

- The efficiency of bamboo charcoal production methods is higher than those for wood charcoal, at between 25% and 40%.
- It is estimated that 2 million women and children die every year from respiratory ailments as a result of inhaling smoke from indoor cooking. Bamboo charcoal burns hotter and cleaner than most other household fuels, and can be considered a healthier substitute.
- The transition from unsustainable to sustainable charcoal production requires sufficient supplies of renewable biomass such as bamboo from managed forests, and hence will provide sustainable income generation to the growers.



### *Did you know?*

- The surface area of bamboo charcoal pores is 300 m<sup>2</sup>/g compared to wood charcoal, with only 30m<sup>2</sup>/g. Bamboo charcoal is thus very good for water purification.
- Bamboo charcoal has a calorific value of 29-32 MJ/kg, equivalent to wood charcoal.
- Bamboo charcoal that is turned into briquettes enhances the energy output of the charcoal.
- It is estimated that in Ethiopia, if bamboo is harvested sustainably, 2 million tonnes of bamboo charcoal could be produced to replace 62.5% of Ethiopia's wood charcoal consumption, equivalent to 47,000 ha of forest in the country per year.



# BAMBOO CHARCOAL

## -FOR HOUSEHOLD ENERGY AND SUSTAINABLE DEVELOPMENT

In the early 2000s INBAR worked with its partner Tamenglong Bamboo and Cane Development Centre in Tamenglong, Manipur State, India, to develop new technologies for making charcoal briquettes from bamboo, which are now being produced in the region. The technology was later shared to Mozambique where, in partnership with FAO, INBAR worked to trial bamboo charcoal production by communities. INBAR subsequently trained communities in the production of bamboo charcoal from waste bamboo parts in Ethiopia, Ghana, India and the Philippines.

The work on bamboo based charcoal received a strong boost when an EC and CFC - funded project on bamboo charcoal and bamboo firewood production in Ghana and Ethiopia commenced in 2009. This project aims to support the creation of micro and small private bamboo charcoal enterprises, promote the use of bamboo fuel as a sustainable substitute for timber fuel, and disseminate the best practices developed within Ghana and Ethiopia, and to neighbouring countries. Since 2009 the project has:

- Introduced bamboo species and charcoal technologies from China and adapted them to local needs for everyday household energy use in five pilot demonstration sites and one bamboo charcoal technology center in each of the two countries.
- Encouraged 350 households in Ethiopia to replace wood charcoal with bamboo charcoal for their everyday household cooking needs.
- Fostered the establishment of three national bamboo charcoal micro and small enterprise associations in Ethiopia and Ghana, and helped 142 charcoal producers organize into self-supporting groups.





*In Tamenglong district, Manipur state, India, INBAR and its partner TAMBAC have helped self-help groups operate charcoal and briquette-making enterprises that cater to some of the energy needs of the community in the district. In the absence of a regular grid supply of electricity, charcoal briquettes provide the much-needed energy for heating and cooking in this remote and fairly inaccessible area. Over 1000 people now produce bamboo charcoal here - including 150 who produce higher value bamboo charcoal briquettes.*

- Enabled government institutions, non-profit organizations, and research centers in Ethiopia and Ghana to integrate production and use of bamboo charcoal into their sustainable development programmes and policy recommendations to promote bamboo as sustainable biomass energy.
- Saw trainees of the project in Ethiopia set up businesses selling more than 25,000 bamboo charcoal adapted energy saving stoves to households, food vendors and government agencies as a more efficient alternative to their existing stoves.

The project has created much interest, and its initial results were presented at the INBAR and Ethiopian Government's side event at UNFCCC COP 17 in Durban, South Africa, on "Emerging economies combat climate risks through green-growth and south-south solutions in forestry and agriculture." The story was picked up across the world's media, including articles in O'Globo (Brazil), Voice of America (USA), the New York Times (USA) and Scidev.net (UK).



*Trainees of the project in Ethiopia set up a factory to produce energy efficient stoves*

#### *INBAR publications on charcoal or including charcoal:*

- Bamboo charcoal Charcoal training manuals/TOTEMs
- Bamboo charcoal policy paper (in press)
- Mainstreaming pro-poor livelihood opportunities with bamboo
- Market potential of bamboo and rattan products

#### *Properties of bamboo charcoal*

- Moisture Content – <7-8%
- Volatile Matter – <6-8%
- Ash Content – <3%
- Fixed Carbon – >85%
- Gross Calorific Value – >31300J/g



**Meeting environmental challenges:** Bamboos can protect the environment, but in order to do so, sometimes need protection themselves. In 2011, INBAR and partners increased the understanding of the practicalities of using bamboo for climate change mitigation with the development of a carbon accounting methodology. INBAR supported sustainable management of bamboo resources by contributing to the development of bamboo forest management standards in Peru and to strategies to mitigate the negative effects of mass flowering in Ethiopia, instead turning this into opportunities for reforestation and livelihood development.



### **A carbon methodology for bamboo**

Carbon markets offer an additional opportunity to increase incomes. INBAR is working to develop a carbon methodology so farmers can earn money through carbon credits by means of afforestation with bamboo. INBAR, the China Green Carbon Foundation and Zhejiang Agriculture and Forestry University, China, are developing the methodology that will enable project developers to quantify the carbon fluxes within a bamboo plantation, and allow the calculation of the carbon credits earned. Once adopted, the methodology should lead to more, and more sustainably-managed, bamboo plantations. INBAR will make the methodology freely available to all on its website, so it can be used to develop commercial methodologies for existing carbon trading systems.

INBAR held the first open consultation on its carbon methodology at the second Asia Pacific Forestry Week in Beijing in November.

### **INBAR at UNFCCC COP 17 in Durban, South Africa**

INBAR ran a side event at the UNFCCC COP 17 entitled “Emerging economies combat climate risks through green-growth and south-south solutions in forestry and agriculture”, in conjunction with the Government of Ethiopia.

The event showcased successful green-growth interventions in forestry and agriculture created by emerging and developing economies to address climate change challenges. Panelists highlighted strategies, policies and investments needed in Africa and at global levels to accelerate green growth in forestry and agriculture and discussed south-south collaboration around these innovative technologies. The event showed through high level participation that the need for south-south cooperation to cope with climate change was well recognized. In particular, the event highlighted the work on bamboo and bamboo charcoal as an example with high potential for green-growth, which also contributed to extensive media attention for the charcoal story.





### What is a carbon methodology?

A carbon methodology calculates how much carbon can be sequestered and how much carbon emissions will be saved, in any particular context. It includes regulations to ensure how the project's management and the carbon accounting is done – it answers the questions “how do I do it?” and “how do I check I’m doing it right?,” thereby ensuring that the use of bamboo to offset carbon is verifiable, comparable, traceable, and based on the best scientific practices.

### Improving bamboo forest management

In Latin America, INBAR developed a Moon calendar for harvesting bamboo. Moon calendars are traditional means of reference for harvesting, but INBAR's version includes technical information to enable scientific management of the bamboos.

A joint seminar on bamboo in Hong Kong, organized by Hong Kong Polytechnic University in collaboration with the Federation of Hong Kong Industries and INBAR, has led the Special Administrative Region government to start planting bamboos on degraded land.

INBAR led the establishment of a working group that is developing a national standard on bamboo cultivation and harvesting in Peru.



# Goal 3

## Mass bamboo flowering in Ethiopia

Mass bamboo flowering, when all plants of a specific bamboo species flower at the same time, and then die, is a well known phenomena. Only certain species show this characteristic, but some of them are economically important, and hence this mass, or gregarious, flowering causes significant loss of income due to the sudden loss of raw materials caused by the death of the plants. In the last three to four years, the economically important bamboo species, *Oxytenanthera abyssinica*, has been flowering in many parts of Ethiopia, including Benishangul Gumuz Regional State, where INBAR has several project sites. Benishangul Gumuz has one of the highest levels of coverage of this lowland bamboo forest in Ethiopia - approximately half a million hectares. Lowland bamboo has been used there for a wide range of purposes – mainly subsistence, but also income-generating activities - making it a priority to regenerate the resource base. Due in part to increasing population pressure, there are fears that the land where the bamboo has flowered and died, will be switched to other agricultural uses, and existing bamboo producers will try to switch to other means of generating incomes, thus destroying the resource base. At the same time, flowering offers an opportunity for large scale collection of seed that can be used to plant large areas of new bamboo forests for future use.



As a result of INBAR's work with farmers, NGOs and government stakeholders, many people are now working together in Benishangul Gumuz to reforest the areas where the bamboo has flowered and died:

- All relevant stakeholders are now aware of the bamboo life cycle and the nature of flowering;
- Thousands of kilograms of bamboo seeds have been collected and distributed;
- Many bamboo community nurseries have been established to raise seedlings;
- The area of bamboo forest where flowering has occurred has been identified publicly to help protect the land from being used for other purposes;
- Natural regeneration is being protected from grazing by domestic animals;
- Mass mobilization for bamboo afforestation and reforestation by communities is underway, and many NGOs and Civil societies are involved.
- Relevant research is also being conducted - bamboo seeds are being stored at the Forestry Research Centre in cold stores to use in at least the next 3-4 years, and to study the seeds viability and longevity.

**Improved bamboo value chains to produce market-based development models:** In 2011, INBAR strengthened both its product-based and regional work on pilot value chains. In Latin America, the programme on “Economic Development and Adaptation to Climate Change” will give extra support to the growth of the bamboo industry in Ecuador and Peru, thought to be worth USD 30 million per year and capable of creating over 10,000 new jobs in the next decade, primarily in poor rural areas. In Sichuan province, China, INBAR and partners have linked stakeholders in new public-private ventures, which is increasing investment in the sector. Work on bamboo construction as a value chain is continuing with innovative houses in Asia, Africa and Latin America, and the adoption of supporting policies for bamboo housing by governments.

### Developing bamboo value chains in Latin America

The project: “South-South Initiative to Develop an Integrated Bamboo based-development Alternative in Latin America” is funded by the Common Fund for Commodities and works in Ecuador and Peru to develop bamboo livelihoods based around value chains.



The project “Optimizing low-cost bamboo housing for climate change adaptation in coastal regions in Ecuador and Peru” is funded by the EU and aims to set up climate adapted housing demonstration sites in low income communities, develop harmonized codes for disaster- resilient bamboo housing in Ecuador and Peru, train over 1000 foresters and farmers in bamboo management and construction workers in building with bamboo, and support development of bamboo housing value chains thereafter to produce 1500 new disaster resilient bamboo houses in four years time.

The project “Flood-resistant elevated bamboo houses: Promoting innovative housing resilient to climate-related disasters”, is funded by the World Bank.

Together, these three synergistic value chain projects will provide replicable models of bamboo-based development to enable communities to adapt to climate change in the region. Raising awareness of the results of this programme in other Latin American countries is a key component.



# Goal 4

## New bamboo value chains in Sichuan province, China.

In 2011, INBAR's project "Revival of livelihoods in post-disaster Sichuan: Enhancing eco-friendly pro-poor bamboo production supply chains to support the reconstruction effort", funded by the EU and Citi Foundation, has developed strong public-private partnerships that are helping drive bamboo-based development in Sichuan. The project works with Sichuan Provincial Forestry Department (SFD), Benelux Chamber of Commerce (BenCham) in China and the EU Project Incubation Centre (EUPIC) in Chengdu to foster the development of sustainable bamboo value chains in this poor region of China that was hard hit by a devastating earthquake four years ago.

In 2011, the project acted as the hub of a network and built new formal partnerships with its target groups: bamboo primary and secondary processing SMEs, government forestry agencies and consumer and retail groups. The project partners developed a draft methodology to integrate monitoring of bamboo SMEs by government agencies and this is expected to build the capacity of Environmental Protection Agencies to enforce existing environmental standards for the target SMEs. Eight bamboo demonstration sites and a bamboo industry cooperative have been established and will be supported to promote local bamboo sector development.

Events for consumer and retailer groups have been very effective in raising people's awareness of Sichuan's bamboo industry and related bamboo processing technologies. A project TV documentary has been made in Beichuan, Qionglai, Chongzhou, Qingshen and Chengdu areas to draw the public's interest towards Sichuan's bamboo industry, and foster greater investment. Two major events also put the project in the lime light.

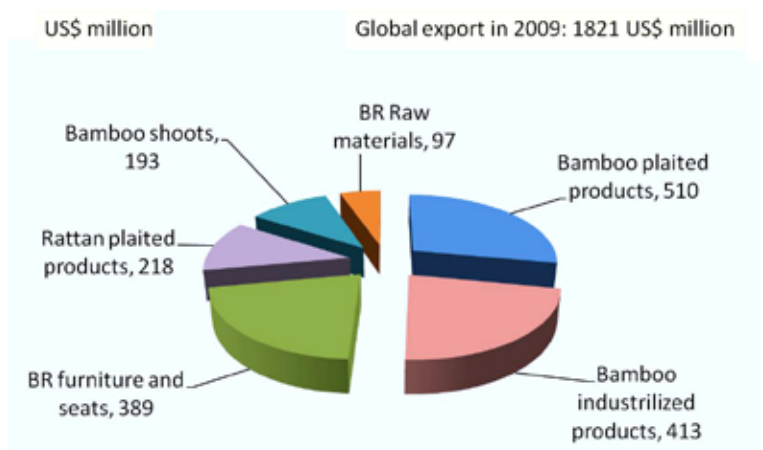
- European Council president, Mr Herman van Rompuy, visited the project site in May.
- The project won an innovation award at the United Nations - World Reconstruction Conference's innovation competition in May.

## Improved trade database

INBAR updates its bamboo and rattan trade database with the latest statistics every year, but this year we also gave it a complete facelift. The new database features:

- Clearer overview of HS classification, including HS codes for bamboo and rattan before and after 2007
- Ability to select multiple options for trade flow, year and codes
- Graphs on trade flow and trends for bamboo and rattan products
- Reports on global bamboo and rattan trade
- Detailed descriptions of bamboo and rattan products

Information on data status: time of updating and lists of countries with relevant data available



## Work on Building Codes expanded

2011 saw INBAR and its partners make significant gains in increasing the recognition of bamboo as a conventional building material, with national bamboo building codes being approved in Peru and Ecuador. The development of these codes is an outcome of INBAR's previous work on ISO standards for bamboo construction. The new building codes which cover use of bamboo in its natural form for construction, mean that Ecuadorian and Peruvian bamboo construction workers and consumers will be able to build legally recognized permanent bamboo houses for the first time. This will help to formalize an already vital construction sector, which in Guayaquil, Ecuador alone provides housing to 300,000 families. In the future, INBAR aims to work with partners to enhance and extend these codes to other Andean countries.

## Flood resistant bamboo housing demonstrated in Ecuador

In 2011, INBAR built its first stilt-raised demonstration house in Ecuador as part of our World Bank funded project entitled "Flood-resistant elevated bamboo houses: Promoting innovative housing resilient to climate-related disasters". The structure represents a breakthrough in flood-resistant housing design, and improves upon the traditional-style bamboo architecture that is currently used by 10% of Ecuadorian households, by introducing new foundation designs, engineered bamboo panel products and preservation techniques. As a result, the structures have a lifespan of 20 years, compared to just 5 years for traditional housing, and can withstand inundation from coastal floods. At a cost of approximately US\$5000 for one 32m<sup>2</sup> family unit, INBAR is now collaborating with Viviendas del Hogar de Cristo, a charity that makes 50 houses a day in Ecuador, to incorporate this new design into their existing low-cost social housing schemes.



## First bamboo house built in Bhutan, three more planned

In December 2011, the Bhutanese government inaugurated the first bamboo-framed, traditional-style house in the country. Designed and constructed by INBAR, the Ministry of Agriculture and Forestry, and carpenters from all over Bhutan, the 100m<sup>2</sup> building in Tingtibi, Zhemgang District, is now the permanent residence of the Tingtibi Community Chief. The structure adapts a traditional Bhutanese timber house design for bamboo, demonstrating how bamboo can be used as an effective alternative to timber in a culturally acceptable way.

All materials in the house, except the cement used in the foundations, were sourced locally. Apart from using bamboo for the house framework and in many of the walls, INBAR architects and Bhutanese partners also used timber for some joint work, as well as traditional adobe walling and a thatched roof. The house consumed approximately 25.5m<sup>3</sup> less wood than an equivalent timber-framed home, and is nearly half the price, at a cost of US\$140/m<sup>2</sup>. The house has an expected life-span of at least 20 years, similar to that of an equivalent timber framed house. The earthquake resistance of the structure was put to the test when the house withstood shocks from an earthquake in nearby Sikkim, India, without suffering any damage.



# Publicity and Publications

## Events

INBAR participated in a wide range of international events in 2011:

- UNFF9, New York, February
- 1st Global Satoyama Conference, Nagoya, March
- World Reconstruction Forum, Geneva, May
- Regional Bamboo Congress, Cuba, May
- Africa Energy Forum, Paris, July
- 3rd Asia Pacific Housing Forum, Bangkok, September
- APEC meeting of Ministers responsible for Forestry, Beijing, September
- CGIAR Science Forum, Beijing, October
- Asia-Pacific Forestry Week, Beijing, November
- International Bamboo Congress, Colombia, November
- UNFCCC COP17, Durban, November - December



**Earth day celebration at the Black Bamboo Park in Beijing**

On Earth day, 22nd April, INBAR held a bamboo planting event for member country representatives at the renowned Black Bamboo Park in Beijing.



**World Horticultural Expo, Xian, China**

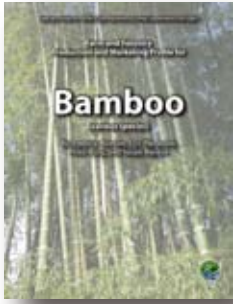
INBAR's bamboo garden highlighted not only the importance of bamboo as an ornamental, but also its role in sustainable development.

## Publications



INBAR Annual Report 2010
INBAR Calendar 2012
Market Potential of Bamboo and Rattan Products (WP 63)
Cross border value chains for non-timber forest products in four different Asian countries (WP64)
The Climate Change Challenge and Bamboo (WP 65)
International Bamboo and Rattan Product Ideas Competition
Bamboo investment guide for Sichuan (in Chinese)
Sichuan Bamboo Directory (in Chinese and English)
Training manual of bamboo resource sustainable management (in Chinese)
Training manual of bamboo resource processing and utilization (in Chinese)
Construir con Guadua (2nd edition, in Spanish)
Technical folder for the production and management of Guadua angustifolia (including five technical manuals for the development of the bamboo productive chain – in Spanish)
Moon calendar for the harvesting of bamboo (in Spanish)
Bamboo charcoal production manual
Four training packages on bamboo propagation and cultivation for Ethiopia

## INBAR staff-authored publications



Benton, A.J.; Thomson, L.; Berg, P.; Ruskin, S. 2011. Farm and Forestry Production and Marketing Profile for Bamboo. In Elevitch, C. R. (ed). Specialty crops of the Pacific Islands. Permanent Agriculture Resources, Hawaii. 1-27.

Fu, J.H.; Zhang, W.Y., Yuan, J.L. (eds). 2011. Food bamboos of the Giant Panda (in Chinese). Zhejiang Science Press, Hangzhou. 248pp.

Hoogendoorn, C.; Wu, J.Q.; Ramanuja Rao, I.V.; Motukuri, B.; Caberra, A.; Lou, Y.P.; Fu, J.H.; Keuhl, Y.; Subramony, T.P. 2011. Bamboos contribution to a Pro-Poor Green Economy. In Tewari, D.N. (ed). Forests for Sustainability. Ocean Books, New Delhi. 121 – 148.

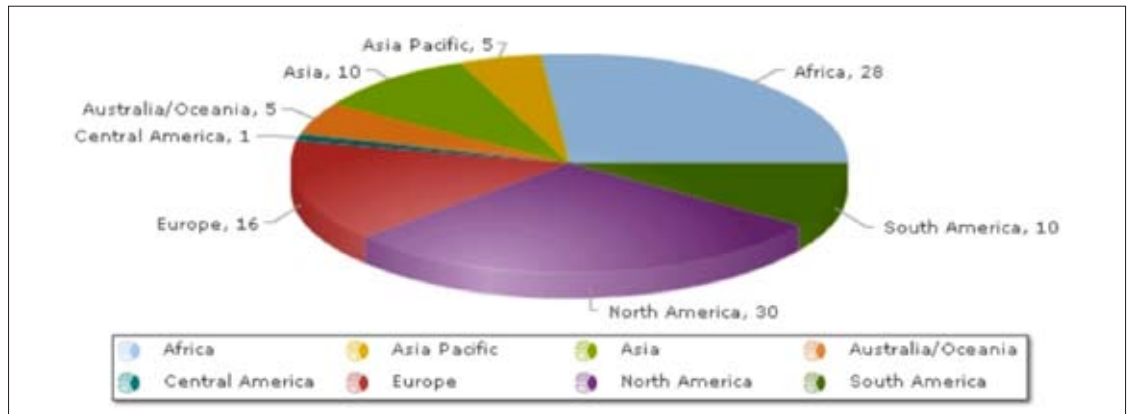
Lobovikov, M.; Schoene, D.; Lou, Y.P. 2011. Mitigation and Adaptation Strategies for Global Change: Volume 17, Issue 3, 261 - 276.

Li, Z.Y., Zhu, Z.H., Zhang, D.C. 2011. Chinese Forestry Development. In Tewari, D.N. (ed). Forests for Sustainability. Ocean Books, New Delhi. 220 – 243.

Motukuri, B.; Reza, S.; Pandey, S.; Schreckenber, K. 2011. Increasing the economic benefits derived by poor rural women producers from the incense sticks (agarbatti) value chain (or “the incense stick project”). In Mitchell, J and Coles, C (eds). Markets and Rural poverty. 47 – 63. Earthscan, London and Washington.

Zhu, Z.H. 2011. Integrated Sustainable Development of Mountainous Areas in China. In In Tewari, D.N. (ed). Forests for Sustainability. Ocean Books, New Delhi. 244 –269

## International media coverage in 2011

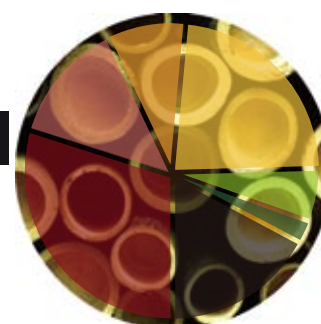


## Media coverage by donor and partner in 2011



# Donors and financial statements

Principal Donors 2011



## INTERNATIONAL NETWORK FOR BAMBOO AND RATTAN BALANCE SHEET

AS OF 31 DECEMBER 2011  
(In US dollars)

	31 DECEMBER 2011	31 DECEMBER 2010
<b>ASSETS</b>		
Non-current assets		
Fixed assets-Cost	367,968	339,557
Less: Accumulated depreciation	311,988	287,857
Fixed assets-Net	55,980	51,700
Recoverable deposits	6,145	6,531
Current assets		
Accounts receivable	2,062,451	1,432,016
Cash and cash equivalents	1,249,966	1,309,457
Total current assets	3,312,417	2,741,473
<b>TOTAL ASSETS</b>	<b>3,374,542</b>	<b>2,799,704</b>
<b>NET ASSETS AND LIABILITIES</b>		
Current liabilities		
Accounts payable and accrued liabilities	576,677	644,518
Total current liabilities	576,677	644,518
Net assets		
Restricted	1,484,165	957,897
Unrestricted	1,313,700	1,197,289
Total net assets	2,797,865	2,155,186
<b>TOTAL NET ASSETS AND LIABILITIES</b>	<b>3,374,542</b>	<b>2,799,704</b>



## INTERNATIONAL NETWORK FOR BAMBOO AND RATTAN

### STATEMENT OF ACTIVITIES FOR THE YEAR ENDED 31 DECEMBER 2011 (In US dollars)

	PRC	IFAD	Membership Fee	EC	CFC	CIDA	CITI	World bank	Others	2011	2010
<b>Revenue</b>											
Grants:											
Restricted		663,909		1,296,110	220,000	303,483	249,989	160,000	494,200	3,387,691	3,989,613
Unrestricted	926,355		504,505							1,430,860	1,530,098
Contribution in-kind	918,705									918,705	918,705
Interest income									15,420	15,420	21,641
Publication sales and Affiliates									247	247	2,323
Others									51,829	51,829	12,256
<b>Sub Total</b>	<b>1,845,060</b>	<b>663,909</b>	<b>504,505</b>	<b>1,296,110</b>	<b>220,000</b>	<b>303,483</b>	<b>249,989</b>	<b>160,000</b>	<b>561,696</b>	<b>5,804,752</b>	<b>6,474,636</b>
<b>Programme activities</b>											
Environmental Sustainability	38,134		27,421	609,520			141,244		20,552	836,871	433,223
Trade Development Programme	58,194		65,626	572,133	67,398			99,491	94,624	957,466	875,994
Livelihood and Economic Development	194	835,628	23,247			87,290			14,809	961,168	1,310,579
Networking and Partnerships	312,594		187,979						318,734	819,307	1,561,339
<b>Sub Total</b>	<b>409,116</b>	<b>835,628</b>	<b>304,273</b>	<b>1,181,653</b>	<b>67,398</b>	<b>87,290</b>	<b>141,244</b>	<b>99,491</b>	<b>448,719</b>	<b>3,574,812</b>	<b>4,181,135</b>
<b>Management and administration</b>											
Secretariat expenses	421,875		189,900							611,775	556,947
Board and Council expenses	56,781									56,781	112,035
<b>Sub Total</b>	<b>478,656</b>		<b>189,900</b>							<b>668,556</b>	<b>668,982</b>
<b>In-kind expenses</b>											
Total Restricted amount		(171,719)		114,457	152,602	216,193	108,745	60,509	45,481	526,268	360,212
Total Unrestricted amount	38,583		10,332						67,496	116,411	345,602
<b>Excess revenue over/(under) expenditure</b>	<b>38,583</b>	<b>(171,719)</b>	<b>10,332</b>	<b>114,457</b>	<b>152,602</b>	<b>216,193</b>	<b>108,745</b>	<b>60,509</b>	<b>112,977</b>	<b>642,679</b>	<b>705,814</b>

# Donors and financial statements

## CONTRIBUTIONS FROM PROJECT PARTNERS FOR INBAR PROJECTS

Some of the program activities recorded in the statement of activities for the period from January 1, 2011 to December 31, 2011 are jointly carried out by INBAR and its project partners. Besides INBAR's funding, such program activities are also funded by project partners. According to signed contract, project partners' committed contribution to those program activities are set out below:

	2011	2010
Common Fund for Commodities	196,075	528,630
Federal Micro and Small Enterprises Development Agency, Ethiopia	46,116	38,428
Ethiopian Rural Energy Development Promotion Centre	12,636	25,272
Bamboo and Rattan Development Programme, Ghana	972	9,558
Forest Research Institute of Ghana	432	14,121
International Centre for Bamboo and Rattan, China	12,063	204,527
Hunan Forestry Technology Extension Center, China		15,670
Sichuan Provincial Management Centre for Converting Slope Farming Lands into Forest		15,670
Management Office for Natural Forest Resource Management, Yunnan, China		15,670
Research Institute of Subtropical Forestry, CAF		26,600
Nanjing Forestry University	18,900	37,800
EUPIC (EU Project Innovation Centre)	10,956	10,379
Benelux Chamber of Commerce in China	14,316	13,339
Agro Enterprise Centre, Federation of Nepalese Chamber of Commerce and Industry	32,114	89,039
Government of Ethiopia	32,114	89,039
Forest Department, Government of Sichuan Province, China	98,417	75,186
Support Programme for Rural Micro Enterprises, Poles and Regional Economies, Madagascar	17,437	117,033
Rural Income Promotion Programme, Madagascar	47,005	101,740
Proyecto de Desarrollo del Corredor Central, Ecuador		127,872
Prosperity Initiative, Viet Nam		87,067
Ministry of Science and Technology, China	65,376	
Wen Zhao Bamboo Charcoal Ltd. China	73,980	
Services for Alternative Development in the South, Ecuador	40,940	
Catholic University of Guayaquil	37,926	
Center for Research, Training Evaluation and Advocacy, Peru	41,940	
Integrated Program for Coffee Development, Peru	41,940	
Hogar de Cristo, Ecuador	1,500	
Peace and Hope, Peru	1,500	
Ministry of Agriculture, Livestock and Fisheries, Ecuador	7,500	
Ministry of Agriculture, Peru	3,750	
Ministry of Housing, Construction and Sanitation, Peru	1,500	
Asociacion de Pequeños Productores de Banano, Ecuador	16,500	
Government of Pichincha, Ecuador	24,650	
Corporation Noble Guadua, Ecuador	5,000	
Government of Lambayeque, Peru	10,436	
Government of Piura, Peru	10,436	
<b>Total</b>	<b>924,427</b>	<b>1,642,640</b>

## INBAR's offices and member countries



### ANNUAL REPORT 2011

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The International Network for Bamboo and Rattan (INBAR) is an intergovernmental organisation established in 1997. INBAR is dedicated to improving the social, economic, and environmental benefits of bamboo and rattan.

INBAR plays a unique role in finding and demonstrating innovative ways of using bamboo and rattan to protect environments and biodiversity, alleviate poverty, and facilitates fairer pro-poor trade. INBAR connects a global network of partners from the government, private, and not-for-profit sectors in over 50 countries to define and implement a global agenda for sustainable development through bamboo and rattan.

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