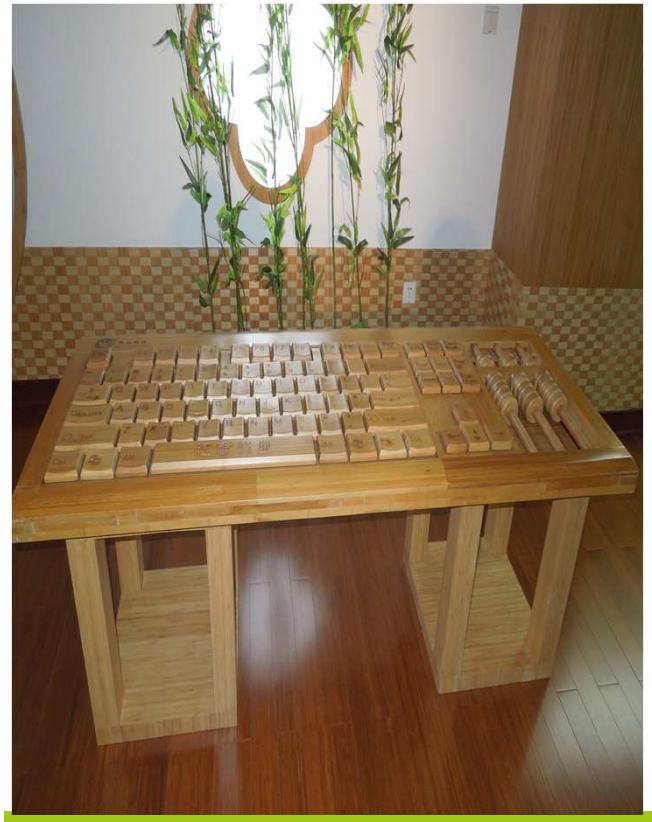

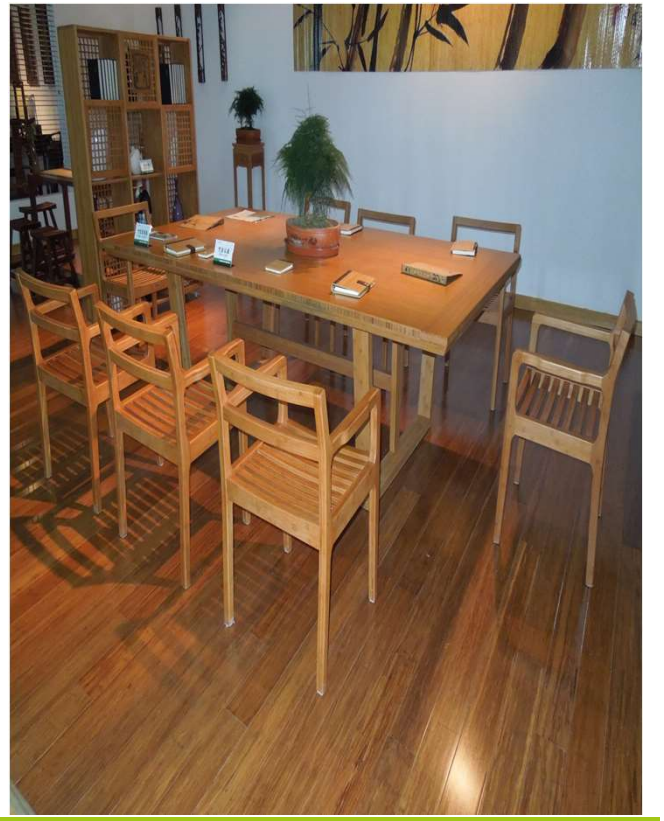

Industrial and Global Market Potential of Northeast India Bamboo

World Bamboo Workshop, Manipur State, India

February 4-8, 2019

T.P.Subramony (subramony@inbar.int)/ Ralf Kuepper

International Bamboo and Rattan Organisation (INBAR)

South Asia Regional Office, New Delhi, India

Often described as ‘Vegetal Steel’, ‘Green Gold’ or ‘the Wise Man’s Timber’, Bamboo is a very Strategic Non-Timber Forest Product

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Presentation Structure

- Bamboo resource: current status and use in NE
- Potential Application for Environment, Industries, Value Chains
- Global Trade of Bamboo and Rattan
- Market Linkage and Standardisation
- INBAR programmes for bamboo sector development
- The Way Forward…

Slide 3

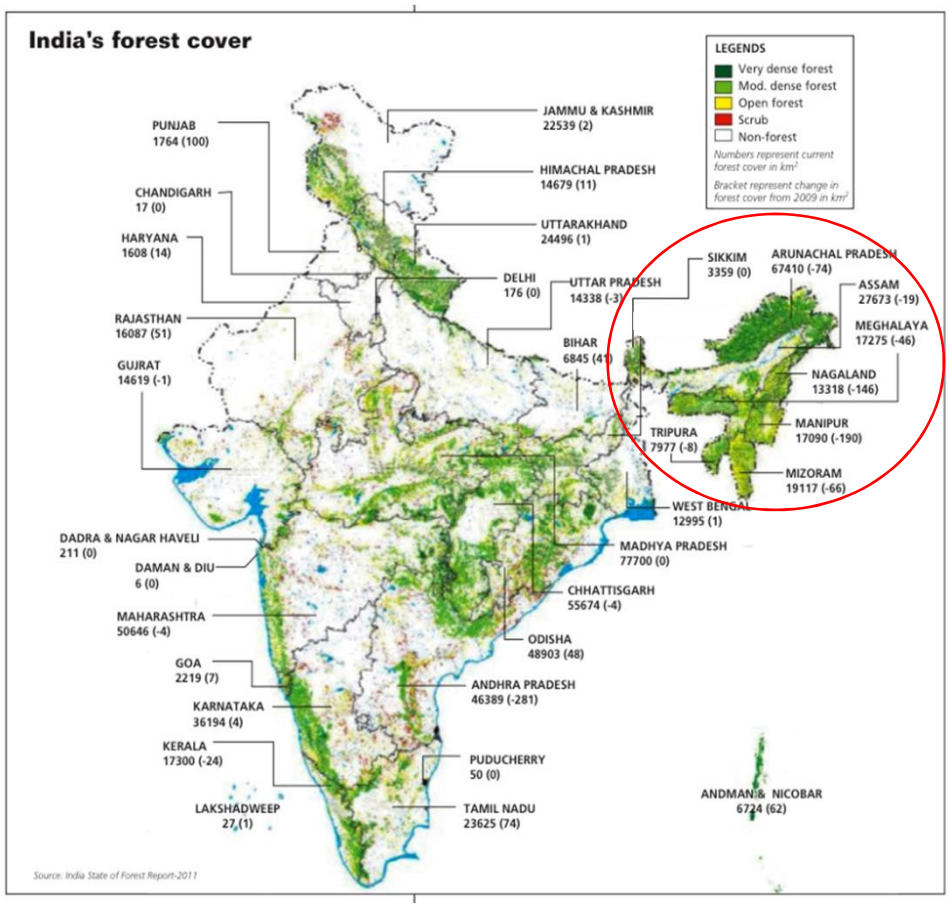
M2 Mony, 1/28/2019

Bamboo resource: current status

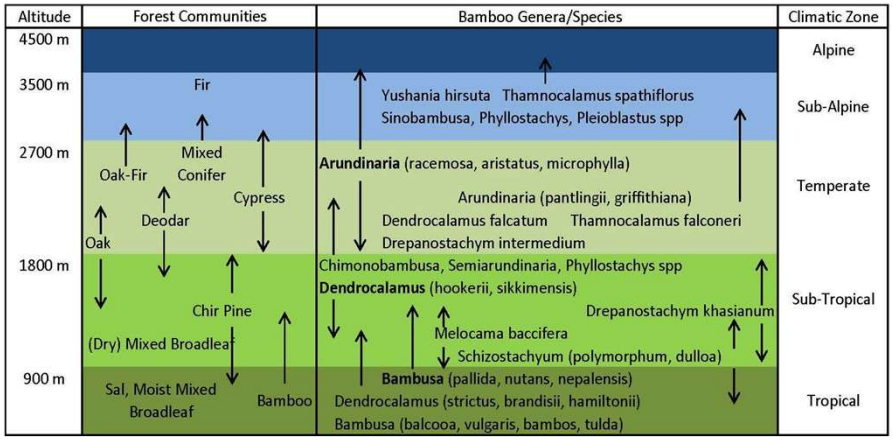
- **Over 1600 (1643) bamboo species** in the world. **India reportedly has about 120-150 species** (about 15 commercial species)
  - *as per the latest research (The World Checklist of Bamboos and Rattans – INBAR Technical Report of 2017)*
- 31.5 million hectares of bamboo grow across the world
- India has 30% of the world's bamboo resources - with the world's largest growing area of 15.69 million hectares *(FSI Report: 2017).* Paints a picture of India's bamboo economy…pointing to the vast potential for development
- But today India taps only one-tenth of its bamboo potential - contributing to a 4 percent share of the global market for bamboo products.

What's so special about Bamboo & NER?

Bamboo in the North East



Integral part of ecosystems

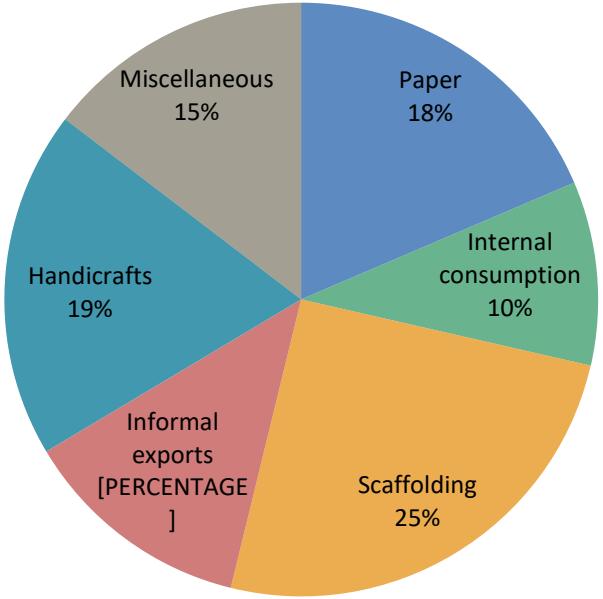


Keystone species

89 different bamboos

2/3 of growing stock in India

How is it used?



Hardly any value added to about 1/3 of the Bamboo used

NER – Bamboo Market 2015

Estimate: 62.5 billion
INR

INDIA – International Trade 2014

Item	Import (INR thousand)	Export (INR thousand)
Raw bamboos	3,661	3,047
Bamboo shoots	131,128	8,947
Charcoal	341	7,978
Flooring/shaped products	18,969	34,367
Panels	1,412	31,451
Mats/matting/screens	32,587	110,527
Plaits/similar products	4,041	6,449
Basket works	18,693	27,250
Paper articles	2,448	7,011
Seats of bamboo/rattan	24,968	11,827
Furniture	11,827	40,005
Total	**250,075**	**288,860**

Bamboo Species → Industry

Bamboo Species	Commodity Group	Size of Enterprise			
		Micro	Small	Medium	Large
All bamboos	Fuel (Charcoal/Energy)				
Bambusa balcooa, B. tulda, B. nepalensis, Dendroclamus strictus, D. hamiltonii, Melocana baccifera	Food (Shoots)				
Bambusa vulgaris, B. tulda, B. nutans, B. pallida, Dendrocalamus brandisii, D. strictus, D. sikkimensis, Melocana baccifera, Schizostachyum polymorphum, S. dulloa, Thamnocalamus spathiflorus	Handicraft				
Bambusa balcooa, B. tulda, B. bambos, B. nepalensis, B. pallida, Dendrocalamus hamiltonii, D. hookerii, Arundinaria racemosa, Drepanostachym intermedium, D. khasianum, Melocana baccifera, Schizostachyum polymorphum, S. dulloa, Thamnocalamus spathiflorus, T. falconeri	Weaving Products				
Bambusa balcooa, B. vulgaris, B. tulda, B. nepalensis, B. nutans, B. pallida, Dendrocalamus strictus, D. hookerii, Arundinaria racemosa, Drepanostachyum khasiana, Melocana baccifera	Housing and Construction				
Bambusa balcooa, B. pallida, Melocana baccifera	Sticks/Agarbatti				
Bambusa bambos, B. balcooa, B. vulgaris, Dendrocalamus strictus, D. brandisii	Furniture				
Bambusa bambos, B. tulda, B. balcooa, and various other	Boards and Flooring				
Dendrocalamus strictus, D, hamiltonii, D. sikkimensis, Bambusa bacooa, B. vulgaris, B. bambos, B. tulda, B. nutans, Melocana baccifera	Paper and Pulp				
Various bamboos	Textiles				
	Other *				
	* Medicines, Cosmetics, Beverages, Air and Water Purification, etc.				

Industrial and Market Potential; Value Chains, Environment

Bamboo: potential applications

- Environmental
  - Ecological Restoration
  - Ecological landscaping
  - Reforestation
- Socio-economic
  - Employment
  - Income generation
  - Industry development
  - Food
  - Household energy requirements
- Medicinal
  - Bamboo vinegar used medicinally to treat eczema, and other skin diseases, and as an anti-inflammatory and anti-fungal

Bamboo: potential industrial applications

- Raw material
  - Wood Industry (small scale/rural industries eg. weaving, furniture, scaffoldings, household wares, laminated boards, panels for flooring)
- Food Industry: edible shoots, fodder, bamboo beer
- Paper Industry: pulp and paper, rayon
- Pharmaceutical Industry
- Activated bamboo charcoal
- Vinegar
- Water treatment

Bamboo Value Chain

End-to-end process including all stages of production

- Set of selection criteria be developed that would render the value chain selection as most appropriate.
  - There is a market opportunity
  - Can be done with the majority bamboo species available
  - Can be locally processed
  - Benefits large numbers of the target group
  - Is scalable and replicable including possible adaptation to other bamboo species

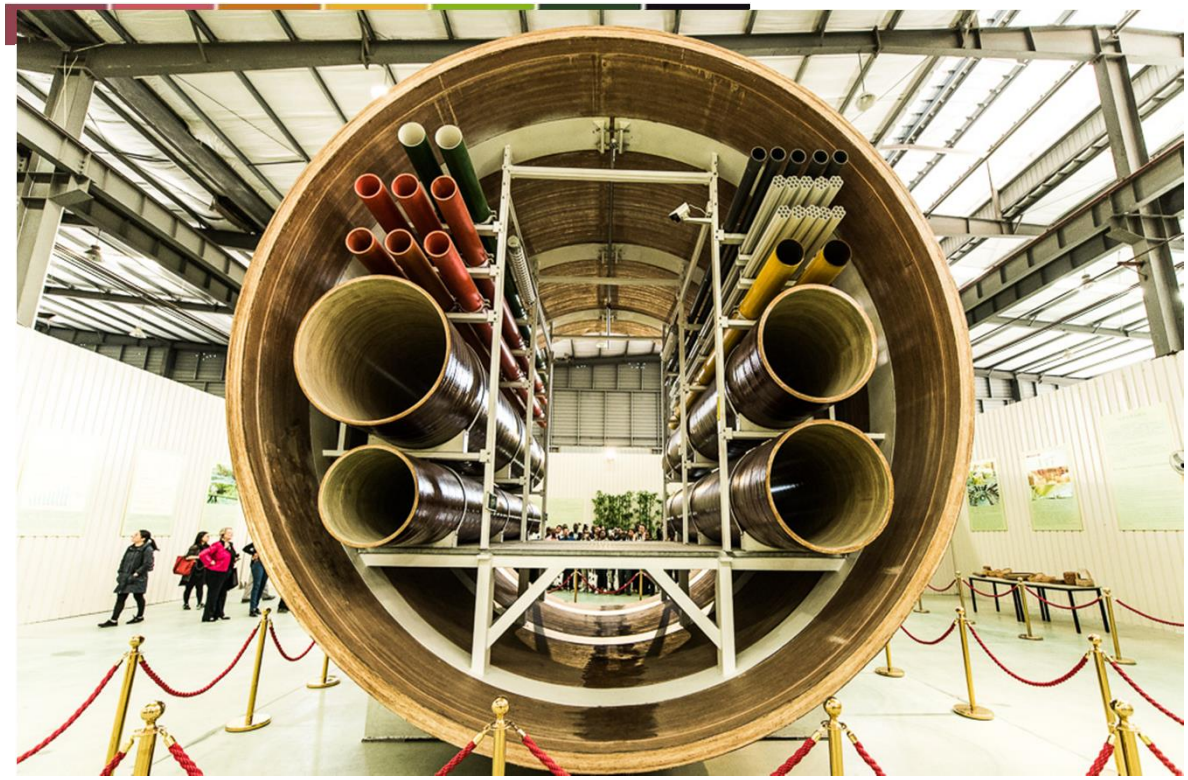
- **Bamboo Shoots:** **Supply chain** from Harvesting of Bamboo Shoots => Processing (Removing of sheaths, washing, sterilization) => Packaging => Preservation => Transporting =>Market

Potential Industrial areas…

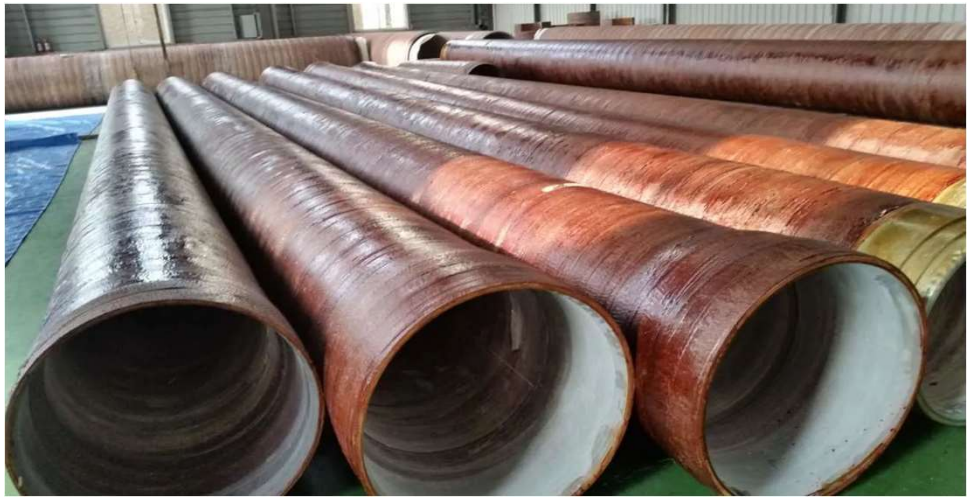
Bamboo Furniture with a focus on **offices, homes, schools**; Bamboo Biomass for power, charcoal, vinegar production; Bamboo Wastes (waste leaves from harvesting, culm sheaths from bamboo shoots, etc.

High-end products…

INBAR



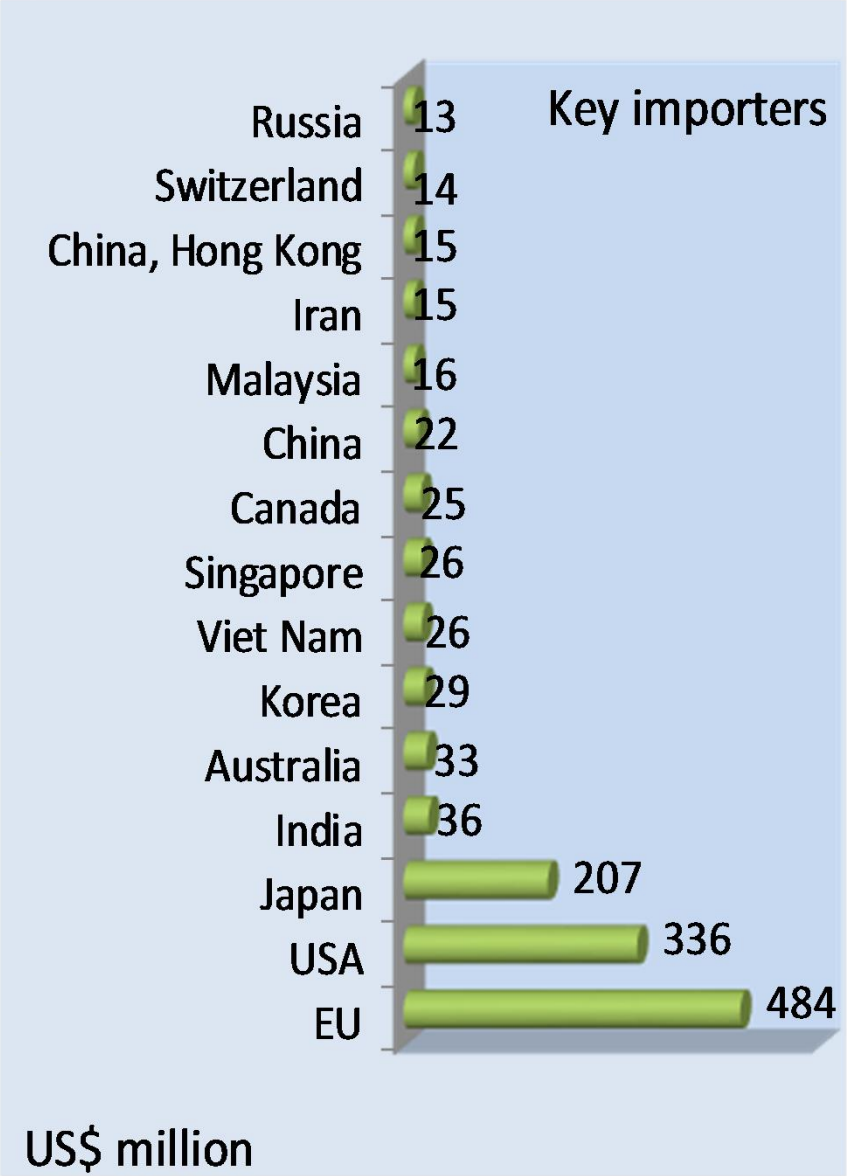
Bamboo Winding Technology



Global Trade of Bamboo and Rattan

Estimated Annual Value: USD 60 Billion

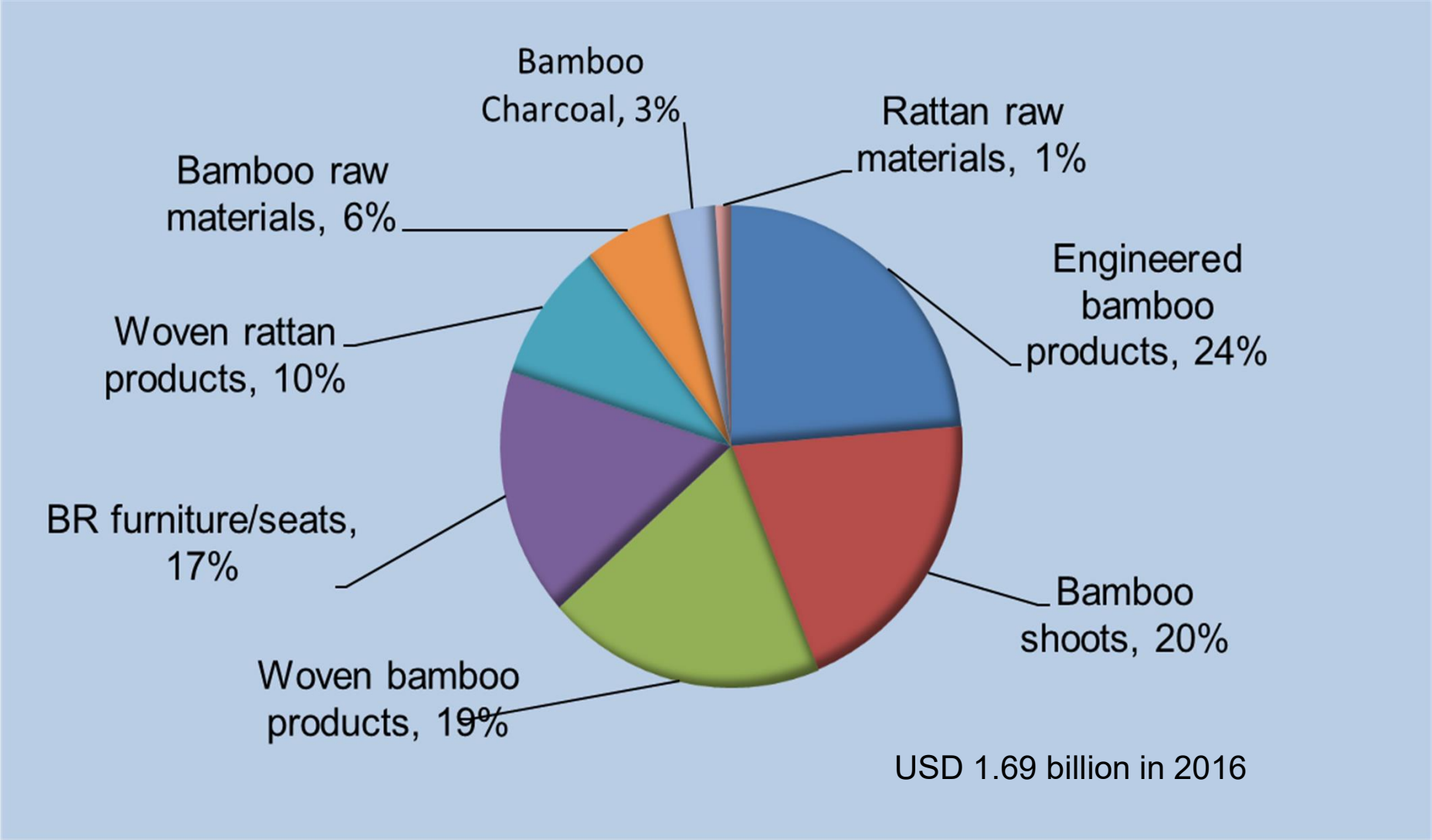
Trade (countries): Major exporters and importers of bamboo and rattan products in 2016



Main exporters of bamboo and rattan products to India (USD '000)

Rank	Import	
	Partner Value	
1	China	21,418
2	Vietnam	10,986
3	Indonesia	1701
4	EU	891
5	Singapore	292
6	Malaysia	158
7	Myanmar	62
8	Sri Lanka	42
9	Philippines	36
10	Russia	29
Total		35,678

Bamboo and Rattan Trade in 2016



Data source: UN ComTrade

The Value of Standardization for Market Linkages

(estimated/rounded fig. 2017)

- Domestic harvest India 14 Million metric tons
- Standing Stock 80 Million metric tons
- Import raw materials 29 Million metric tons

High potential domestic markets for Bamboo raw materials and products

(estimated/rounded fig. 2017

Domestic market for Bamboo in **India**: 400 Million US$

Domestic market for Bamboo in **China**: 30 Billion US$

(estimated/rounded fig. 2017

International Markets for Bamboo products: **1,7 Billion US$**

- Import India 35 Million US$ (Export India 22,5 Mio US$)
- Import Japan 207 Million US$
- Import US 340 Million US$
- Import EU 410 Million US$

High potential international markets Bamboo products

Key Questions for Market Linkages;

- How to identify the linkage?
- How is the producer of Bamboo connected to the value chain?
- What are the specifications of the connection?
- How to implement the product specifications?
- The rule of non-production requirements? (Financial performance, quality and scale)

What creates value for a buyer?

- Quality of supply
- Reliable supply
- Competitive price
- Reliable quality
- Transparency of processes (Tax)

The Added Value of Product and Process Standardisation

- Standards set criteria and practice to **guarantee the specification** of products
- Standards **assure product reliability**
- Standards **generate quality** by the ongoing product reliability
- Standards make **production processes more efficient and decrease cost**
- Standards helps to **ensure the free movement of goods and encourages exports** (competitiveness in Trade).

INBAR Programmes and Initiatives:

for Bamboo Sector Development

International Bamboo and Rattan Organisation (INBAR)

- Established in 1997, INBAR is a Multilateral Inter-Governmental Organisation
- Improve the lives of the producers and users of bamboo and rattan through sustainable management, use and trade of the resources
- Headquarters in Beijing, China
- Regional Offices: India, Ghana, Ethiopia, Ecuador, Cameroon
- Governed by a Council of Members (member countries: presently 44; India is a member since 1998
- Oversight by INBAR Board of Trustees

M1

INBAR Member Countries: 44

Slide 24

M1 Mony, 5/4/2018

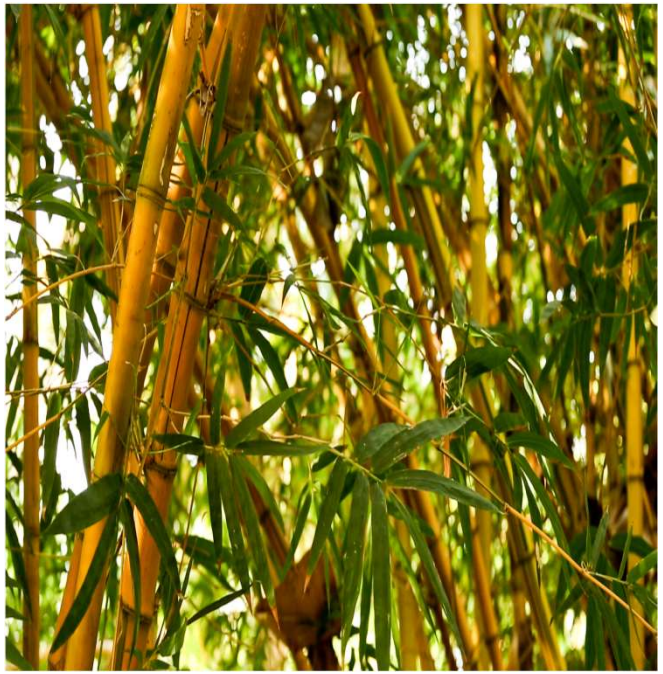
Global Assessment of Bamboo and Rattan (GABAR)

INBAR's Flagship Prog.

To determine the resource base

and

To identify opportunities and challenges for sustainable development
using bamboo and rattan



GABAR: Building the Evidence Base

- What is the area covered by which species – new species?
- What is the economic value of bamboo services for ecosystems?
- Which are economic development priorities?
- Which enabling policies are needed?
- Which new innovations have been developed?

GABAR Outcomes

- Provide national policy and development advice
- Inform International Conventions
- Collaborate with International organizations
- Provide investment Enhanced South-South Collaboration

South-South Cooperation Initiatives

- South-South Knowledge Transfer Strategies
  - Scale up pro-poor bamboo livelihoods
  - Income generation and employment opportunities
  - Environmental management
- INBAR's South-South Initiatives in Africa
  - Ethiopia; Tanzania; Madagascar; South-South linkages with INBAR ARS in India (ICAR-IISWC, Dehradun, India)
  - Optimization and scaling up of benefits through specific value-chain driven sustainable management
- *Can be successfully adopted for development of India's bamboo sector and global collaboration*

Way forward…

- Human and Institutional Capacity Building:
  - Information; New methodologies, Technology transfer; Programs for Mass Production of Market-driven Products
- Policy framework development:
  - Identify and develop need-based strategy, effective national plans and plan of action including guidelines for implementation
- Business Development:
  - Market, trade information, Partnerships and Collaboration,

    Bamboo-based business upgraded
- Sustainable Land Management, Climate Change Strategies:
  - Updated information on existing bamboo resources; Bamboo for Land Rehabilitation, Climate Change mitigation and adaptation; Integral part of Agro-forestry system

Thanks very much..!!

INBAR

INTERNATIONAL BAMBOO AND RATTAN ORGANISATION

www.inbar.int