



Minutes of the Meeting of “**INTERNATIONAL WORLD BAMBOO DAY CELEBRATION 2021**” by organizing a webinar on “**Scope of Skill Development and Entrepreneurship in Bamboo Sector**”

**Date: 18<sup>th</sup> September 2021, Time: 11 am (IST)**

*Organized by*

**DST-Centre for Policy Research (DST-CPR) at Panjab University, Chandigarh**

*In collaboration with World Bamboo Organization, USA*

DST-Centre for Policy Research, Panjab University, Chandigarh in collaboration with World Bamboo Organization virtually celebrated the **INTERNATIONAL WORLD BAMBOO DAY 2021 on September 18, 2021 (Saturday)**. The theme of the webinar was “Scope of Skill Development and Entrepreneurship in Bamboo Sector”. Experts from various National and International organizations were invited to celebrate this prestigious event to deliberate upon the prominent aspects pertaining to ‘Green Gold’ or ‘Miracle Grass’ called ‘Bamboo’. The key speakers and special invitees were as follows:

**Speakers for the Events:**

- Susanne Lucas, Executive Director, World Bamboo Organization, USA (Special message).
- Mr. Sanjeev Karpe, Founder Director, Konkan Bamboo & Cane Development Centre (KONBAC), Maharashtra.
- Dr. Merdelyn Tauyan Caasi-lit, Vice-Chancellor, Research and Extension, University of Philippines, Los Banos.
- Dr. Ajit Singh Naosekpm, Consultant, South East Asia, BamCore, Chandigarh.
- Dr. Oinam Santosh, Scientific Officer, DST, Centre for Policy Research, Panjab University, Chandigarh.
- Dr. Natasha Saini, Assistant Professor, Abhilashi Group of Institutions, Mandi, H.P.
- Dr. Harjit Kaur Bajwa, Assistant Professor, Chandigarh University, Mohali.

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After the opening session, Prof. C. Nirmala, World Bamboo Ambassador, India and Coordinator, DST-Centre for Policy Research, Panjab University, Chandigarh, officially welcomed all the expert speakers, guests and participants for taking part in this prestigious day celebration. The important issues raised by Prof. Nirmala were:

- Prof. Nirmala briefed about World Bamboo Day and the activities of the World Bamboo Organization (WBO), USA. She said this global event is celebrated as the day to create awareness and promote multipurpose utilization plans of bamboo worldwide.
- The headquarter of WBO is situated in Massachusetts, USA and 42 World Ambassadors recruited across the globe to work as a team for proliferating bamboo significance and sensitizing the world to an imperative need for bamboo as a sustainable and natural resource material for a clean and green environment.
- Today’s event is one of the efforts made by ambassadors and dedicated volunteers to create a network and awareness on the scope of skill development and entrepreneurship development in the Bamboo sector.

- Prof. Nirmala, further highlighted the issues related to various benefits of bamboo for sustainable development goals, utilities in various sectors, bamboo cultivation, the health benefits, friendly nature of the bamboo for the environment, characteristics of controlling soil erosion, producing high quantities of nitrogen, absorbing quality for the shocks of seismic activity, etc.

### Highlights of the talks by experts:

#### Ms Susanne Lucas

- Through the virtual message sent by Ms Susanne, she expressed immense happiness to be part of the celebration of International World Bamboo Day.
- Recent development in R&D on Bamboo, modern technologies of Bamboo are being explored. This primitive grass is beneficial for the health of

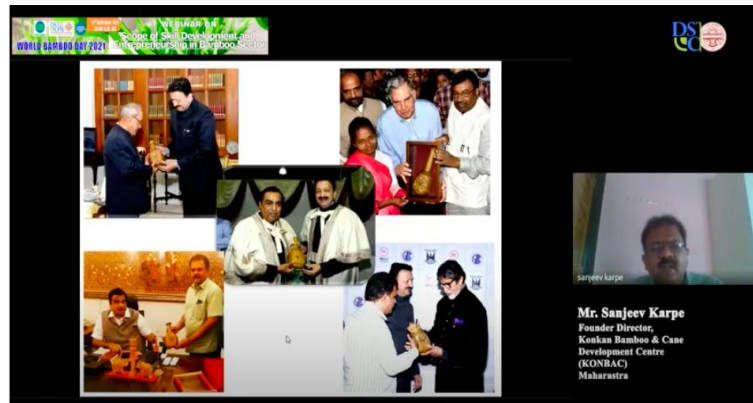


- human beings as well as the health of the planet. Moreover, this also fulfils the daily necessities of humans.
- This wonder grass has the great ability to absorb CO<sub>2</sub> and recycle it into oxygen. Susanne encouraged everyone to think and promote the holistic benefits of bamboo to make life better for everyone all around the world.
- She said more than 2 billion hectares of land is degraded and deforested all over the world, which needs human intervention to use it. So this unutilized land can be exploited to plant Bamboo and can churn out the ecological benefits of bamboo to address the issues like pollution, environmental changes, slope stabilization, soil erosion reduction, clean air, etc.
- Cultivating and managing sustainable bamboo forests will help in producing agroforestry products, improved housing, food, climate medications, etc.
- Susanne said the United Nations (UN) has declared 2021-30 as the decade of ecosystem restoration, to mobilize and restore the degraded land and this initiative has also been endorsed by the WBO to address the issues of sustainable development goals set by the UN.
- She further added that WBO has also signed the 'Kew Declaration' to protect and restore biodiversity, carbon capture and livelihood. This outlines the key request of policymakers to enable decision making to safeguard biodiversity, climate change and improve livelihood. She urged everyone to plant bamboo instead of simply using it.

#### Mr. Sanjeev Karpe

- Mr. Sanjeev initiated his talk by introducing the International Bamboo and Rattan Organisation (INBAR) supported, not for profit, centre namely Konkan Bamboo & Cane Development Centre (KONBAC), Maharashtra.
- Mr. Sanjeev said, they trained the local farmers to grow the best type of Bamboo namely 'Dendrocalamus Stocksii' followed by pressure treatment to make it strong and durable. This process increases durability to a minimum of 100 years.

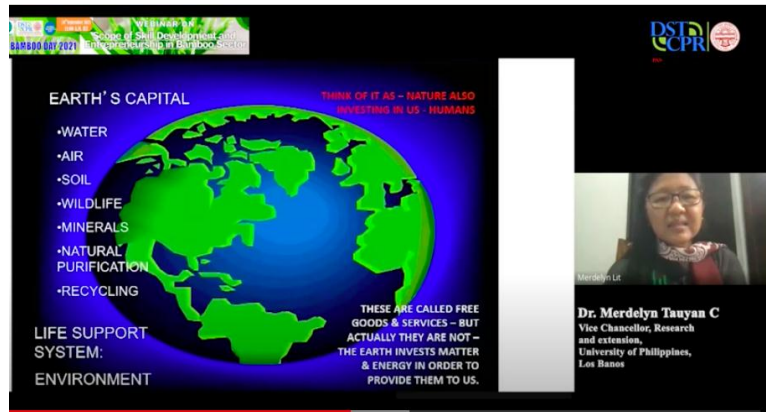
- The process is then followed by training the artisan for traditionally straightening Bamboo by using fire to heat it and applying the pressure. He further added that this technique is so effective that it can bend the Bamboo sticks in very uniform round shapes.
- Mr. Sanjeev presented the articles made up of Bamboo such as mementoes, crafted corporate gifts, lighting, etc. He further added they have got involved renowned personalities to glamorize the articles made of Bamboo such as actor Mr. Amitabh Bachchan, the business man Mr. Mukesh Ambani, politician Mr. Nitin Gatkari, Mr. Rattan Tata, Fmr. President Mr. Pranav Mukherjee, etc.
- Mr. Sanjeev showcased furniture made of Bamboo sticks which were suitable only for urban areas, to make them suitable for rural areas, they gave it some contemporary makeover. The transformation to the Bamboo shift got so popular in the mainstream market as stylish and durable furniture.
- He further said that they then started exploring Bamboo for constructing houses, huts, Gazebo, garden Structures, fencing, cottages, etc. These kinds of Bamboo articles got high attention from the tourism sector, as they were impressed with this sustainable, natural and beautiful material.
- Mr. Sanjeev showcased some attractive, aesthetic structures created out of Bamboo in big cities/states of India like New Delhi, Hyderabad, Bangalore, Maharashtra, etc. They also have taken and completed some international projects in the Maldives, which have won various awards in various international forums.
- He further added that the T2 terminal in the international airport in Bangalore is being constructed completely with Bamboo by a German company for which Bamboo will be imported from Vietnam. This initiative will positively impact the Bamboo industry and this sector will get better international recognition too. With this remark, Mr. Sanjeev concluded his talk.



### **Dr. Merdelyn Tauyan Caasi-lit**

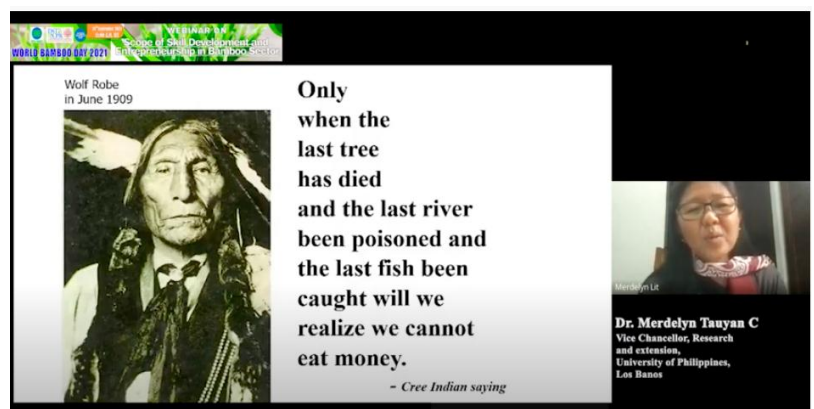
- The Vice-Chancellor of Research and Extension, University of Philippines deliberated on the topic 'Back to Basics'. On this topic, she talked about the environmental aspects, intimate relationships of humans with plants, ecological /societal gaps, environmental gaps, sustainable deep ecology, etc.
- She further explained the concepts and connections in environmental biology. She said the Human system depends on the natural ecosystem but the natural system will go on even without humans too.

- She further educated the participants about how photosynthesis provides basic needed elements to human beings on the earth. She gave examples of plants providing food, clothing, shelters, and oxygen to humans on earth. So we need to protect our mother earth instead of destroying it for our excessive industrial deeds.



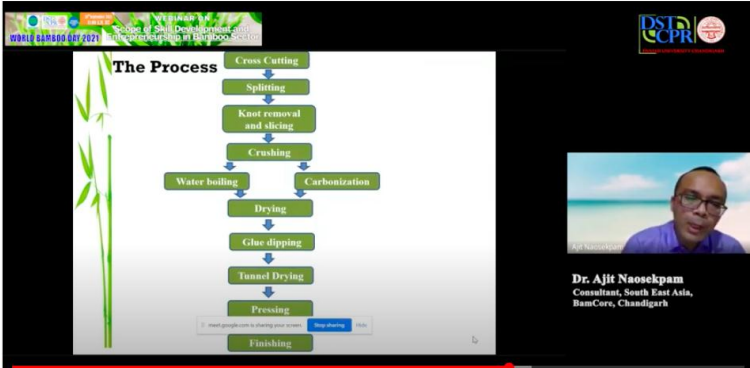
- Activities of Human beings on the earth are destroying the mother planet due to which the harmful effects like global warming are growing. She said these activities can be attributed to the lack of sustainable science, technological arrogance, the hunger for business and profits, etc.
- She stressed on the fact that the societal gaps like income, food, value, education, resource management etc. are not being narrowed in the last couple of years. Rather, the gaps like value and income have deteriorated badly. She further highlighted the 12 serious environmental issues like the destruction of natural habitats like forests, overharvesting of wild food like fishes, biodiversity losses, soil erosion, biological and chemical pollution, human population expansion, etc.
- She gave examples of the human population explosion as, if there are more people they will need shelters to live but because of poverty, the quality of shelters will be substandard, then to overcome these issues more industrialization will be needed, which ultimately disturbs the available natural resources.
- Dr. Merdelyn highlighted the issues related to sustainability. The beautiful statement she quotes *'Anything we get from the environment to meet our needs and desires but, there might be enough for everyone's needs but not for everyone's greed'*.

- The very important point raised by Dr. Merdelyn was the comparison of 'Dominant Worldview vs Deep Ecology'. She justified the statement by saying our mother planet has sufficient natural resources, which humans need to use wisely, organized, carefully and cautiously. The immediate solution for it is to burn less fuel, produce less carbon, stop cutting forests, most importantly stop using and producing plastic. In the last Dr. Merdelyn concluded her talk by showing this very interesting picture shown above and said let's take an oath to protect our precious mother earth.



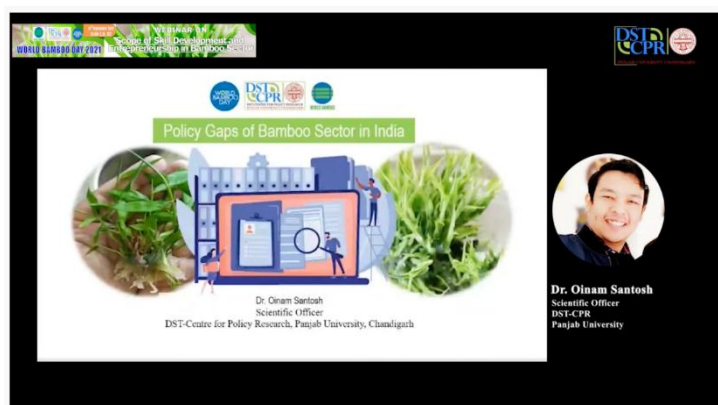


## Dr. Ajit Singh Naosekham

- Dr. Ajit started his talk with the title ‘Strand Woven Bamboo’ and the environmental benefits of Bamboo. Strand woven Bamboo technology can replace the wood to make things. He said that Bamboo is a very fast-growing plant, soil friendly, 100% biodegradable, and grows naturally with the rainwater only that too without needing fertilizers or pesticides.
- Dr. Ajit highlighted the traditional use of Bamboo by depicting Bamboo crafted things like the basket, incense sticks, house making, firewoods, plant support stakes, scaffolding material, etc. He further added that this glass is very versatile which also has contemporary applications like personal care, health, hygiene, cosmetics, items of locomotion, biofuels, home furniture, Bamboo fabric and mobile phone covers are new additions to it.
- He educated the participants with the ‘Bamboo Timber’ its processing, characteristics, applications and pros and cons of it. The processing of the strand woven Bamboo is as depicted in the flow chart:
- He introduced the participants to the machinery used in the making process with the pictorial representation of the final products and the basic requirements viz a viz dipping tanks of glue, boiling tanks, drying tunnels, and chambers, labour/technician skills, etc. For the strand woven Bamboo, he said that there are certain precautions/guidelines to be taken care of during the process such as harvesting, storing, manufacturing time, cold/hot pressing, etc., otherwise, the life and colour of the final product can be compromised.
- Dr. Ajit concluded his talk by highlighting the benefits and characteristics of Bamboo timbers like they are attractive and harder than the hardwood timbers. Bamboo cultivation and its use is eco-friendly, beautiful and renewable source, which can provide income to developing nations like India.

## Dr. Oinam Santosh

- Dr. Santosh initiated his talk highlighting the importance of DST-Centre for Policy Research in identifying policy gaps in the science, technology, and innovation ecosystem. Dr. Santosh emphasized the need of building an STI ecosystem for facilitating indigenous technology development especially in the domain of the Bamboo sector.
- Dr. Santosh showcased the importance of Bamboo in the socio-economic development of the country. Bamboo is regarded as a superfood due to its



immense nutritional value. Bamboo also plays a crucial role in maintaining the natural environment. Bamboo is regarded as an excellent alternative to wood and can be widely explored for promoting and achieving Sustainable Development Goals (SDGs).

- Dr. Santosh raised the need for national policies directing the growth of the Bamboo sector in India. China is leading in terms of annual Bamboo exports to many global countries (global share of 65%). On the other hand, despite India having the largest cultivation area of Bamboo plants, it is lagging behind China (India's global share of only 0.04%). He stressed that substantial government push and optimum resource allocation, reinvigoration of the Indian Bamboo sector can be achieved. This will lead, India to emerge as a global leader in the export of Bamboo to the world.
- Dr. Santosh highlighted the scope of the Bamboo sector in the international market. The world trade comprises 30% of engineered Bamboo products followed by 23% contribution of woven Bamboo products, 16% of Bamboo shoots, and 15% of Bamboo and Rattan furniture products. Bamboo also has a stronghold on the traditional market that comprises Bamboo furniture, Bamboo handicrafts, etc.
- Dr. Santosh pointed on key policy gaps in the Bamboo sector which are as follows:
  - ✓ *Identifying the confusion of Bamboo as in a real sense it is neither a tree nor a crop. In 2018, Bamboo was removed from the tree category and subsequent government efforts such as the 'National Bamboo Mission' have led to strengthening and wider promotion of the Bamboo sector in India.*
  - ✓ *Weak linkages between various stakeholders (farmers and industry) have led to slow plantation, processing, and value addition activities, limited skill-building, and inadequate technology generation in the Bamboo sector.*
  - ✓ *There is a need to build the entire value chain in the Bamboo sector right from the plantation, processing, collection, aggregation, and other related activities. Government should also undertake training for skill-building and brand building for the Bamboo sector in India.*
- Dr Santosh highlighted the efforts undertaken to promote the Bamboo sector in India. He told that Prof. Nirmala, World Bamboo Ambassador, has developed and submitted 'A roadmap to make a Bamboo Shoot a commercially viable sector in North-Eastern area of India' for North Eastern Development Corporation Ltd. He appreciated government efforts through restructuring 'National Bamboo Mission' 2018-19, introducing vocational courses in the Bamboo sector amongst many others to support the Bamboo sector in India.

### Dr. Natasha Saini

- Dr. Saini initiated her talk by emphasizing the importance of Bamboo plants for the ecological ecosystem. She brought the core concept of women's entrepreneurship and empowerment by exploring and



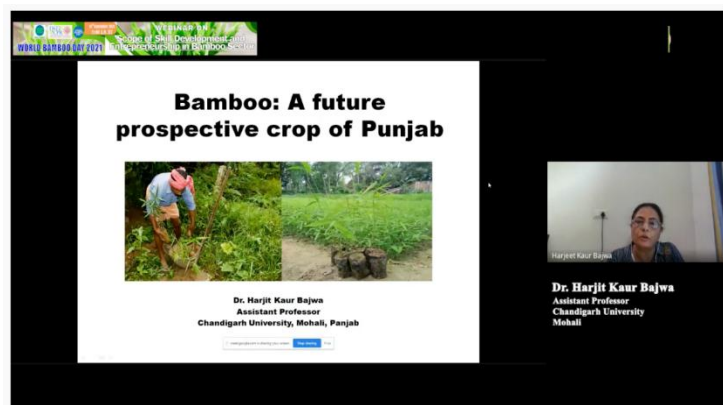
promoting the Bamboo sector in India. With the increased shift of demand from rural to the urban sectors for more environmentally sustainable options, Bamboo is emerging as a sustainable solution. Dr. Saini highlighted sectors or areas in the Bamboo sector where women entrepreneurship is playing a major role. She stressed women participation in:

- ✓ *Food industry*
  - ✓ *Marketing*
  - ✓ *Research and Innovation*
  - ✓ *Group working and crafting*
  - ✓ *Organizational roles*
  - ✓ *Bringing awareness and raising funds*
- Dr. Saini gave insights to her own story of entrepreneurship by forming a company 'Bamboo Heart'. Her company produces several sustainable Bamboo products for daily usage such as toothbrushes, kitchenware, earbuds, cutlery, etc. The company is making efforts to reduce plastic-originated products with sustainable products.
  - She stressed upon the role of women in bringing awareness and marketing of sustainable products, especially those Mission of Bamboo origin. Dr. Saini presented short snapshots of leading women in the field of Bamboo awareness and marketing that are quite inspiring for the young girls who wish to work for sustainable environmental development.
  - Dr. Saini also brought forward Bamboo adoption by women for artisan and craft. Such efforts have also led to the empowerment and socio-economic development of women in the rural sector. Dr. Saini encouraged women to come forward to take up Bamboo handcrafting as one of the career opportunities. Further, Dr. Saini also gave pointers for women's contribution in the food industry where Bamboo is widely used as culinary art, processing, packaging, and value addition.

### **Dr. Harjit Kaur Bajwa**

- Dr. Bajwa highlighted the importance of Bamboo as a prospective crop for the State of Punjab. Dr. Bajwa laid concern over ecological, economical, and health issues being faced by the State of Punjab due to over usage of chemical fertilizers and pesticides on the agricultural land. Some of the key challenges faced by Punjab areas:

- ✓ *Decreasing level of groundwater (dips 1meter every year)*
- ✓ *Increasing cases of malignant diseases (Increased number of cancer patients)*
- ✓ *Mono-cropping (especially for wheat and rice) and faulty cropping practices have led to the usage of water over its sustainability levels and lack of nutrients in the soil*
- ✓ *Effect of climate change on Punjab agrosystems especially issues related to moisture stress*



- Dr. Bajwa strongly recommended the use of Bamboo in Punjab to mitigate challenges faced by the State. She tagged Bamboo as a one-stop solution for the problems of the State of Punjab. She mentioned that various international organizations such as ‘International Fund for Agriculture Development (IFAD)’ are promoting the usage of Bamboo for maintaining the ecological ecosystem. The advantages listed by her are as follows:
  - ✓ *Rapid growth and harvest in 3-4 years*
  - ✓ *No requirement of chemical fertilizers and pesticides*
  - ✓ *Excellent for avoiding erosion of soil*
  - ✓ *Grow in a wide range of environment*
  - ✓ *Maintains balance of oxygen and carbon dioxide in the atmosphere and requires no irrigation*
  - ✓ *The economic viability of Bamboo plantation as compared to many other commonly used plants/crops*
  - ✓ *Provides employment opportunities for the rural sector*
- Dr. Bajwa brought forward efforts made by the Punjab Government in promoting Bamboo cultivation in the region. The government launched the ‘National Bamboo Mission program’ in Punjab and took substantive steps such as:
  - ✓ *Punjab identified as a nodal state by the Ministry of Agriculture and Farmers Welfare to promote plantation, processing, and value addition of Bamboo*
  - ✓ *Nearly 1000 hectares of forest and non-forest area, respectively, will be dedicated for Bamboo plantation.*
  - ✓ *Benefit scheme for nearly 3000 farmers and expected deliverables in terms of farmer income of ₹30,000/ acre of Bamboo cultivation*
  - ✓ *Training functionaries and demonstration in the Bamboo sector has been initiated*
- Dr. Bajwa concluded her talk with a hope to make Punjab clean, green, and prosperous by adopting the Bamboo of the Bamboo plantation in the state of Punjab that requires mass awareness of the same.