

***Panel (BDV): Biodiversity, Value addition and local Knowledge***

**Total Papers: 7**

**Chair:**

**Kartikeya Sarabhai,**  
Director, CEE-Ahmedabad

**Co-Chair:**

**S. Ragupathy,**  
Chief Curator, Biodiversity Institute of Ontario, University of Guelph, Canada

**Time: 14:00-15:30**

**Venue: CR-1, KLMD**

**1.**

**Impact of the Medicinal Plant Conservation Area (MPCA), a conservation technique, on rural development: Mohan, Almora District, Uttarakhand**

**Nikita Kala<sup>\*</sup>, Jyoti K Sharma<sup>\*</sup>**

<sup>\*</sup> School of Environment & Natural Resources, Doon University, Dehradun

The communities living in the Indian Himalayan region of Uttarakhand depend on the native plant species for sustenance of their traditional health care system. Medicinal plants play an important role in the health needs of the people living in the developing nations but due to its unsustainable way of harvesting is affecting the health scenario of such nation. Medicinal Plant Conservation Areas (MPCA) has been established in the country to capture and conserve the diversity of the medicinal plants in the wild. This study focuses one such MPCA in Mohan Almora district, Uttarakhand to determine its impact on the health of local communities living in the nearby villages surrounding this area. The study adopted a questionnaire based local household survey to determine the overall impact of the MPCA. The outcome of the study revealed that MPCA intervention has been able to create good awareness but the overall impact was 4.9 out of 9 due to the limited use of traditional health care practices and continued harvesting from the wild. With the findings it was found that still there is need of more awareness in the village about the conservation and cultivation of medicinal plants and also that people should be encouraged to establish home herbal gardens for managing their primary health care needs.

**Keywords:** Medicinal Plant Conservation Area (MPCA), rural development, medicinal plant conservation, Participatory rural appraisal, Mohan MPCA.

## 2.

### **Adaptation of Environment friendly entrepreneurship for forest waste management and livelihood generation- A case study**

**Dr. Prabir Kumar Panda**  
Siliguri Institute of Technology  
Siliguri, West Bengal

**Analjyoti Basu**  
Entrepreneurship Development Institute of India  
Gandhinagar, Gujarat

Present day global issue is sustainable development. Using available local resources through participatory management is one of the key solutions. Energy and Environment are two wheels of journey of civilization. Present study encompasses the case of Prashant Soni, young energetic entrepreneur from Siliguri; a city located north of West Bengal and is adjacent to the forests of Darjeeling Himalaya and Dooars region. Siliguri also came in headlines in March 2010 (“Siliguri Cracks down on plastic carry bag”-The Telegraph, March 3, 2010) for carrying out anti plastic carrybag campaign to save the environment. By making pellets from dry forest leaves and using forest refuses in smokeless ovens Soni adhered to his cities objective. He not only converted biodegradable wastes into valuable fuels but also generated job opportunity for poor forest dwellers, rural unemployed and unskilled labourers. This study emphasizes on the journey, idea generation and strategies employed by an innovative entrepreneur Prashant Soni who practiced Environmental Entrepreneurship for forest development, waste management and livelihood generation.

**Keywords-** Sustainable development, Livelihood generation, Environmental entrepreneurship

## 3.

### **Innovations in Food Processing Industry: Ethnography of Bamboo Shoot in Manipur**

**Wairopkam Premi Devi**  
PhD Pursuing  
Central University of Gujarat

This paper attempts to explore the linkages of human and non human actors on the one side and formal and informal sector on the other side in the innovation processes by taking one case study of bamboo shoot. Traditional bamboo shoot is manufactured in informal sector that supply raw material to the formal sector where bamboo shoot is manufactured in the form of ready to eat (e.g. Bamboo candy, bamboo shoot pickles, canned bamboo shoot in syrup etc.). By adopting Actor Network Theory (ANT) of Bruno Latour and others in the empirical context of bamboo shoot, this paper analyses the networks of key actors in the innovation process. In this process, there has been a close association between human (framer, practitioners, proprietor, food technologist, managers, marketing and production staff, customers, and government organisations) and non human (bacteria, enzyme, time, technologies, and texts). Methodologically, ethnographic study is used to understand the

socio-cultural and ethnographical context of key actors in the bamboo shoot innovation process. Semi structured in-depth interview has been conducted in the traditional bamboo processing areas, markets, food processing industries, government officials, R&D laboratories and universities. It concludes that Actor Network Theory is highly significant to understand the networks of human and non humans associated with the bamboo shoot innovation process thereby giving a new theoretical interpretation in the Science and Technology Studies (STS) domain in the food processing sector.

Keywords: innovation, informal, formal, bamboo shoot, ready to eat food, food processing industry, actor network theory

#### 4.

### **Exploring the role of Micro Propagation Innovation in Biodiversity erosion: A case of cultivated bananas in Andhra Pradesh**

**Prasanna Kumar K. L**

Innovation is imperative for economic development of any country. Some technological innovations have led to the emergence of new industries across various sectors. Innovations in Biotechnology have revolutionized the scope and size of the industry and have created new avenues for economic development. Recent trends in the development of Biotechnological innovations and its application reveals that, there has been a lack of inclusiveness that threatens the reciprocity between economic development and sustainability. Tissue culture technology, which was originally conceptualized and developed for the conservation and propagation of endangered plant species, is became the example of such innovation that have lost inclusiveness by commercial application. In this case study, application tissue culture technology for the commercial micro propagation of non-traditional banana varieties and their impact on the erosion of biodiversity in cultivated bananas of Andhra Pradesh is explored and provided perspectives of various stakeholders on the improvement of inclusiveness in commercialization of tissue culture innovation and biodiversity conservation.

**Keywords:** Tissue Culture Innovation, Micro propagation, Biodiversity

#### 5.

### **Bamboo and Innovation for Biodiversity Conservation and Sustainability in the North East India**

**Dr. Tapas K. Giri**  
Associate Professor  
Indian Institute of Management  
Mayurbhanj Complex, Nongthymmai  
Shillong-793014

Bamboo the “poor man’s timber” and the “Green Gold” though used traditionally in the North Eastern States has attracted the world attention in last decade for its multipurpose usage and as a substitute for commercial timber. The present paper is intended to highlight how these abundant valuable resources remain neglected in the North Eastern States in India which have the huge potential for new and innovative product based enterprise development, forests and biodiversity conservation, climate change mitigation and adaptation and considerable employment generation at the grass root level. The paper has also attempted to document the various innovative products and processes being practiced widely in the North Eastern Region and suggested how with right kind of policy and support the poverty ridden can transform into a prosperous region by promoting bamboo based innovations and resulting in Sustainable development. Apart from traditional usage of Bamboo for low-cost construction, utility and edible purposes, how the little value edition in bamboo processing can immensely contribute in the ecofriendly construction materials like the bamboo mat corrugated sheets, bamboo mat particles board and veneer’s composite have been highlighted. Besides, many other uses of Bamboo in different other sectors like handicrafts, furniture and furnishing, activated carbons in the region are also presented in this paper.

**Key Words:** Bamboo, Biodiversity, Environment, Conservation, Innovation and Development.

## 6.

### **How to Recognize the Role of Pastoralists / Livestock keepers in conservation of animal biodiversity**

**P. Vivekanandan, SEVA, Dr. D.K. Sadana, NBAGR , Prof Anil Gupta, IIMA, PK Singh ,NBAGR & Dr Ilse Köhler-Rollefson, LPPS**

Traditional pastoral communities in India such as *raikas, malधारis, gaddis, gujjars, yadavas, gawlis, todas, konars* etc., play important role in keeping variety of livestock through nomadic or semi nomadic way of life. They conserve local livestock breeds which provide valuable animal products such as meat, milk and wool, draught power and manure to the society and not only contribute to the economy of our nation but also secure their livelihood. Over the last one and a half decades, the pastoral communities have been deprived off their grazing rights and they are marginalized leading to loss of local knowledge, breeds and livelihoods. In order to protect and improve their lifestyle and livelihood, and pastoral system of animal production, there is need of policy level intervention proposed in this paper.

## 7.

### **Ethnobotany genomics in the context of conservation and protection of bicultural diversity/local knowledge**

**Dr Ragupathy and Dr Satishkumar**

The concept of ethnobotany genomics is founded on the idea of ‘assemblage’ of biodiversity knowledge. This includes a coming together of different ways of knowing and valorizing species variation in a novel approach seeking to add value to both traditional knowledge (TK) and scientific knowledge (SK). Ethnobotany genomics is defined as exploring the variation in

genomic sequences from many species. Our recent work demonstrates the potential benefits of this approach for conservation and protection of biocultural diversity; conservation of traditional knowledge, including securing the rights and economic interest of local people. We present DNA barcoding research that was used to identify millet landraces and medicinal plants products that are economically important to society-at-large.

Furthermore we identified considerable variation that is recognized by several indigenous cultures. The impacts of ethnobotany genomics will extend well beyond biodiversity science. Explorations of the genomic properties across the expanse of life are now possible using DNA barcoding to assemble sequence information for a standard portion of the genome from large assemblages of species. Developing and creation of Biological Reference Material (BRM) DNA barcodes libraries in the context of securing biocultural diversity would be ideal for indigenous knowledge stakeholders. Perhaps the most important contribution is major barcode projects will leave an important legacy; a comprehensive repository of high-quality DNA extracts that will facilitate future genomic investigations. The assemblage of modern molecular tools with that of traditional knowledge will allow for the development of tools that will serve both conservation of biodiversity and support the development of commercial tools for rural communities. This is aligned with the Convention on

Biological Diversity that was signed by over 150 nations, and thus the world's complex array of human-natural technological relationships has effectively been re-organized.