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Meeting Report on Prof. R. Misra Memorial Lecture and Panel Discussion

ANVITA PANDEY¹, HARSHITA JOSHI², RIPU DAMAN SINGH^{3,*}, SURABHI GUMBER³ AND GOPAL S. RAWAT⁴

¹Centre for Ecology, Development and Research (CEDAR), Dehra Dun, India

²Department of Botany, IPGPGG of Commerce College, Haldwani, Kumaun University, Nainital, India

³Appropriate Technology India (AT India), Dehradun, Uttarakhand, India

⁴Wildlife Institute of India, Dehradun, India

E-mail: anvitapandey90@gmail.com, joshiharshita452@gmail.com, ripuds4777@gmail.com, surabhigumber19@gmail.com, gsrawat59@gmail.com

ORCID ID: 0000-0002-2875-2664 (RDS), 0000-0003-2438-9041 (SG)

*Corresponding author

To commemorate the doyen of Indian Ecology Prof. Ramdeo Misra, National Institute of Ecology (NIE) organized a one day colloquium at Indian Institute of Remote Sensing (IIRS), Dehradun on 07th December, 2023 with the collaboration of Graphic Era University, Dehradun; Appropriate Technology India, Dehradun and Centre for Ecology, Development and Research (CEDAR), Dehradun. The event was attended by a number of scientists and research scholars based in Dehradun viz., WII, IIRS, Doon University, Garhwal University, Himmothan, USAC, UNDP, GEU and others. Prof. Kamal Bawa, FRS, Distinguished Professor at University of Massachusetts, Boston, U.S.A. delivered the 4th Prof. R. Misra Memorial Lecture followed by a panel discussion on “Changing Human and Forest Relationship in Climate Change Affected Himalaya”. While Dr. G. S. Rawat, Ex-director of WII moderated the panel discussion, Prof. Harsh Dobhal, Doon University coordinated the entire programme.

Professor S.P. Singh, FNA, President of NIE welcomed all the participants and expressed his gratitude to Prof. Kamal Bawa for sparing time and knowledge. Remembering the immense contributions of Prof. R. Misra, he spoke about a phase of renaissance in India in the form of freedom movement and also beginning of ecology as a discipline under the leadership of Prof. R. Mishra. He outlined the contributions of Prof. Misra which included spreading and establishing ecology centers



across Indian Universities and Institutes; initiating post-graduate level teaching in ecology in India at BHU, when in most other Universities teaching ecology as core component was limited to one or two lectures in Life-sciences based courses. He further introduced Prof. Kamal Bawa and highlighted his contributions in the field of ecology and sustainability and establishing Ashoka Trust for Research in Ecology and Environment (ATREE), an organization which has played a major role in influencing ecology. Prof. Bawa was felicitated with a citation and memento which was presented by Dr. R.P. Singh, Director IIRS, Dehradun and Prof. S.P. Singh.

Prof. Bawa delivered a lecture on “Creating a Climate for Change in the Himalaya: A Personal Perspective” in which he emphasized the need to change the ways Himalayan ecosystems are being managed. The issues of sustainable development are very challenging and ground realities are dire. While

the researchers have estimated the number of tigers and other such animals which are keystone species in several ecosystems we hardly know about the prey and predator relationships which are important for ecological balance in such ecosystems. In India quantitative research in ecology is almost devoid of the discipline population ecology as it was never began effectively. ATREE nurtured the concept of traditional knowledge by involving communities and acquiring ground level understanding. ATREE excelled not only in working with communities but also growing as a think tank of national and global significance.

Prof. Bawa highlighted that in the functioning of ecosystems the flow of matter and their use and reuse are important, but the role of biodiversity is far more significant than perceived. His efforts to create ATREE clearly showed how challenging and arduous is to create an NGO which attempts to mainstream research among its various activities. However, several areas of ATREE were able to get a strong support from the state Governments.

Following Prof. Bawa's lecture a panel discussion was organized. Dr. G.S. Rawat, the moderator of the panel discussion, set the agenda for the discussion by framing the following key questions:

- Can the changing trend of Human-Forest relationship in the Himalaya be reversed and if yes why & how?
- How to internalize principles and practices of Ecosystem based adaptation in the Himalayan region for climate resilience?
- Is forest based sustainable development feasible in mountain districts of western Himalaya at least (in districts having ~50% forest cover)?
- Do we have adequate knowledge & preparedness to promote Ecosystem-based adaptation in the Himalayan region?
- What are the major gaps in science- policy and practices that need to be filled?

Dr. Hitendra Padalia, Scientist, IIRS emphasized in his submission the role of communities in managing fire. The community involvement is very minimal in western and eastern Himalayas, therefore in order to reduce fire events and manage fire in the region community participation is very important.

Prof. Kusum Arunachalam, Doon University, highlighted the importance of quantifying payment

for Ecosystem services in national/state policy. She further indicated the significance of soil microbes-plant interaction which can contribute significantly towards identifying the ecosystem services.

Mr. S.T.S Lepcha, Ex PCCF Uttarakhand Forest Department, presented his idea through an example of chir-pine (*Pinus roxburghii*), where pine forest gave income to the communities therefore it was well taken care of in comparison to oak forests which means that economy play major role in protecting forests. Incentivizing communities will help in making a better trend for human forest relationship. He gave an example of China where mushroom cultivation was done in bamboo forests which helped the communities in maintaining livelihood.

Dr. S. Sathyakumar, Scientist, WII shared his experience where he developed and compiled information to protect biodiversity and understood from the process that pulls and pressures needs to be identified properly and technological intervention needs to be done to protect the biodiversity in wild or outside the wilderness.

Dr. Pradeep Mehta, UNDP, highlighted the dependence of communities on forests for their daily sustenance. According to him incentives should be given to the people for energy-use efficiency. He also highlighted the importance of representation of all sectors to address gaps in policy and research. In order to achieve this, programme mode should be adopted rather than project-based approaches.

Dr. Vinod Kothari, Himmothan, shared his experience where community looks for the water subsidy and pipeline connections, but still there is lack of protecting the spring sources resulting in extinction of 40% springs in the Himalayan region.

Prof. Harsh Dobhal, Doon University, highlighted the need for policy research which are poorly addressed in our research. He emphasized that advancement in knowledge must influence policies, and academic and decision-making system should have more exchange of ideas. He further shared the importance of formulating proper mechanism for evaluating Ecosystem Services (ES) for sustainable development. He also referred to carbon justice, an idea being formularized by Prof. S. P. Singh.

Dr. Uniyal, UCOST emphasized on developing a good policy and addressing the gap in difficulties faced during the implementation processes of these

policies. The implementation lacks at the community level due to migration from rural to urban areas; social security and health and good educational institutions.

Dr. Gajendra Singh, Scientist, USAC highlighted the importance of involving the local communities and people-centric policies for management of research objectives and concluded that without public participation, research objectives cannot be achieved.

Dr. Anvita Pandey, Coordinator, CEDAR emphasized on revisiting the bans on tree cutting that was put to conserve biodiversity and maintain forest sanctity. Silvicultural practices are disappearing as they are not in use any more due to the ban of tree felling. Evaluation of benefits and losses due to the imposed ban needs to be understood to restore the system back in place. Keeping humans total out of the forests does not seem to solve problem of protecting biodiversity or conserving nature, it should be done by the human being a part of the natural system. She also highlighted that we need to promote the participation of community in conserving and protecting forests and biodiversity.

Dr. Arijit Roy of IIRS emphasized on the need to have a Data policy and use of AI/ML

In his concluding remark by Prof. S. P. Singh, President, NIE proposed the idea of developing a

consortium of scientists for the Himalayan region. He felt that the forests and community relationships are getting weaker as day-to-day dependency of young people on forest is on decline, and now communities are less interested in forests.

Prof. Kamal Bawa summarized the panel discussion by focusing on the key issues which centred around Knowledge, Policies and People-centric approaches. He highlighted that the people-centric approach should be strengthened and introduced the idea of big science involving not only scientists but also several other stakeholders. The emphasis on long-term research is further stressed. He appreciated the idea of Prof. S.P. Singh for developing a research consortium but referred to constraints of funding in managing a research consortium.

Dr. R. P. Singh, Director, IIRS concluded the entire discussion on a positive note. He was of the view that technology can also address the problems of Climate Change as it did in the case of Ozone hole. He indicated that IIRS is developing better geo-spatial platform to facilitate ecological research by initiating the mapping the wetlands of the country. Dr. Hitendra Padalia, Scientist, IIRS, proposed the vote of thanks.

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