

## **Short-Term Workshop on the Impact of Climate Change on Biological Systems**

A six-day short-term workshop on the *Impact of Climate Change on Biological Systems* was organized by the Association of Indian Universities-Dayalbagh Educational Institute-Academic and Administrative Development Center (AIU-DEI-AADC) in association with the Department of Zoology, Dayalbagh Educational Institute from April 15-20, 2024.

Climate change is inevitable and beyond a shadow of a doubt, the most pivotal and urgent predicament faced by the entirety of the human race today. The issue has become a vital subject of concern, critical for action globally and at the national, sub-national, and local scales. One of the great challenges for biology today is understanding how future climate changes will impact biological systems. Progress towards this goal depends on understanding how species respond to changes in climate. Scientists at all levels, in response, are trying to address this acute issue through various means such as planning for adaptation and mitigation policies, supporting research, developing knowledge and infrastructure, and other alternatives for training and capacity building. The workshop aimed to shed light on the profound impacts of climate change on various life systems, including ecosystems, human health, and biodiversity. Ninety-one participants from different locations (Uttar Pradesh, Madhya Pradesh, Andhra Pradesh, Punjab, Haryana, Jharkhand, Sikkim, and Rajasthan) attended the workshop in a hybrid mode.

The inaugural of the workshop was organized on April 15, 2024. It started with the Institute's Prayer. Prof. Sant Prakash, the convener of the workshop, welcomed the guests. The workshop commenced with an insightful inaugural talk by Prof. C.R. Babu, Chairman, Department of Environmental Studies, Delhi University, Delhi on *Ecosystems and nature-based solutions to mitigate, adapt and build resilience to climate change*. The Inaugural address was delivered by the esteemed speaker, Prof. R.J. Rao, Former Vice-Chancellor, of Barkatullah University, Bhopal. The honourable Director of the Dayalbagh Educational Institute (Deemed to be University), Prof. C. Patvardhan, and Prof. Jyoti Gogia, Nodal Office, AIU-DEI-AADC, graced the program. Dr. Amla Chopra, the co-convener of the workshop proposed the vote of thanks. Dr. Reshma Bhatnagar hosted the program.

During the second day of the workshop, Prof. Afifullah Khan, Chairman, of the Department of Wildlife Sciences, Aligarh Muslim University, Aligarh delved into the Myths and Reality about climate change. He emphasized in the lecture and demonstrated statistically that the wars owe

the most for the change of climate. The need of the hour is to bring peace and harmony and that will be reflected in the drastic change of the climate today. The talk stirred interesting discussion and several questions were asked by the students. In the subsequent session, Mr. Pankaj Gupta, CEO, of Zero Energy Solutions, Dayalbagh, Agra, shared valuable insights on the interconnection between the built environment, climate change, and biological systems. He has raised another important parameter, that built-in constructions reducing the earth's area bring drastic changes in the climate.

On the third day of the workshop, Dr. Indrajit Sinha, Vice President of Science and Technology, Florida, USA gave an enlightening presentation on *Microalgae biotechnology paving the way to a carbon-negative future*. He prophesied the future strategies for mitigating the threats of climate change by microalgae system, with a comprehensive analysis of the limitations of the system, yet promising. Dr. Ashok Kumar, Deputy Director, Division of Animal Health, Central Institute for Research on Goats, (ICAR) Farah, Mathura delivered a talk on the impact of climate change on animal health system with emphasis on the emergence and reemergence of livestock diseases impacts on production and carbon footprints along with Indian initiatives, policy and action plans for mitigation.

On the fourth day, Prof. Vimla Rani Chopra, Community College, Texas University Houston, TX, USA delivered an interesting presentation on *Climate change: Your Actions Matter* sharing real-life examples of how a changed mindset could be crucial for the sustenance of life on this planet. The next session was engaged by Dr. Brij Kishore Gupta, Director, Reliance Zoo & Rehabilitation Centre, Jamnagar, Gujarat on a very contemporary topic *Living in the Anthropocene under the climate change regime* emphasizing challenges posed by the anthropogenic activities on the environment. He also highlighted the threat of zoonotic diseases and the massive spread of invasive species.

The fifth day of the workshop commenced with an interactive session by Dr. Simantini Ghosh, Assistant Professor and Head, Department of Psychology, Ashoka University, Delhi on the topic *Climate Change and Psychology, Theory and Practice*. She interacted with the audience, collected answers from the audience and analyzed and inferred that global warming is the result of human activities.

In the next session, Dr. Keshar Kunja Mohanty, Scientist G, Deputy Director, National JALMA Institute of Leprosy and Other Mycobacterial Diseases. (ICMR) Agra delivered a very enlightening talk on the *Effect of Climate Change on the immune system and health*. She

emphasized that climate change aggravates the majority of human pathogenic diseases. She also recommended that conservation the creation of healthy human habitats and the promotion of a nature-connected lifestyle can support immunological health.

On day six, Dr. Nisha Patro, Scientist, DBT Centre for Neuroscience, JU, Gwalior delivered a talk on *Environmental influence on brain development*. She comprehensively covered how glial cells in the brain have an indispensable role in the brain and brain development. She further elaborated on the interaction of neurons and the glial cells.

The Valedictory function began with the introduction of the chief guest by the workshop convener, Prof. Sant Prakash followed by the address of the chief guest Prof. Ishan Patro, Former Vice-Chancellor, Ravenshaw University, Cuttack, and President of Indian Academy of Neurosciences. The workshop report was presented by the co-convener, Dr. Amla Chopra, followed by awards and certificate distribution. There were 33 winners of Poster presentations, Collages, Slogan, Poem, Extempore Speech, and Quiz competitions held during the interactive sessions related to the workshop theme. A cultural program featured a *Nukkad Natak* and a skit *Apratyashit Sabha* by students of the Department of Zoology, DEI. The Conference came to an end with a vote of thanks, a gesture of gratitude was extended to the DEI and AIU Advisors, organizing committee members, technical staff, and students for their seamless teamwork. The workshop concluded with the Institute Song. Overall, the workshop was a success.