



AIU-DEI-AADC



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

April 15, 2024 to April 20, 2024

## Executive Summary

The Association of Indian Universities – Dayalbagh Educational Institute-Academic and Administrative Development Center (AIU-DEI-AADC) organized a Short-Term Workshop on the *Impact of Climate Change on Biological Systems* in association with the Department of Zoology, Dayalbagh Educational Institute.

Climate change is now 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 to try to understand 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. This workshop aimed to shed light on the profound impacts of climate change on various life systems, including ecosystems, human health, and biodiversity. The workshop featured 9 technical sessions with ten experts chaired by Prof. Alka Prakash, Prof. Shabad Preet, Dr. Amla Chopra and Dr. Lalit Mohan. Ninety-one participants from different locations (Uttar Pradesh, Madhya Pradesh, Andhra Pradesh, Punjab, Haryana, Jharkhand, Sikkim, and Rajasthan) attended the program in a hybrid mode.

## Resource Persons

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**Prof. R.J. Rao**

Former Vice Chancellor,  
Barkatullah University, Bhopal



**Prof. C.R. Babu**

Chairman, Department of Environmental Studies,  
Delhi University, Delhi



**Prof. Afifullah Khan**

Chairman, Department of Wildlife Sciences,  
Aligarh Muslim University, Aligarh



**Dr. Indrajit Sinha**

Adjunct Associate Professor,  
University of Windsor, USA  
Vice President, Science and Technology,  
Florida, USA



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**Mr. Pankaj Gupta**  
CEO, Zero Energy Solutions,  
Dayalbagh, Agra



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**Dr. Ashok Kumar,**  
Deputy Director, Division of Animal Health  
Central Institute for Research on Goats (ICAR)  
Farah, Mathura



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**Prof. Vimla Rani Chopra**  
Professor, Houston Community College,  
Texas, USA.



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**Dr. Brij Kishore Gupta**  
Director, Reliance Zoo & Rehabilitation Centre,  
Jamnagar, Gujarat.



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**Dr. Simantini Ghosh**

Assistant Professor and Head, Department of  
Psychology,  
Ashoka University, Delhi.



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**Dr. Keshar Kunja Mohanty**

Deputy Director  
National JALMA Institute of Leprosy and other  
Mycobacterial diseases.  
(ICMR) Agra



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**Dr. Nisha Patro**

DBT Centre for Neuroscience, JU,  
Gwalior



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**Prof. Ishan Patro**

Former Vice Chancellor,  
Ravenshaw University, Cuttack  
President, Indian Academy of Neurosciences.





## Programme Schedule

Date and Time	Topic/Activities	Resource Persons
<b>April 15</b> 11:00 AM – 2:00 PM Break 2:30 PM – 4:00 PM	<b>INAUGURAL CEREMONY</b> (11:00 PM – 12:00 PM)	
	<b>INAUGURAL TALK</b> Ecosystems and nature-based solutions to mitigate, adapt, and build resilience to climate change.	Prof. C.R. Babu,
	<b>Activity</b> Poster Presentation	
<b>April 16</b> 12:00 AM – 1:00 PM 1:00 PM – 2:00 PM Break 2:30 PM – 4:00 PM	<b>Session 1</b> Climate Change: Myths and Reality	Prof. Afifullah Khan
	<b>Session 2</b> Interconnection between built environment, climate change and biological systems	Mr. Pankaj Gupta,
	<b>Activity</b> Slogan/Poem Competition	
<b>April 17</b> 12:00 AM – 1:00 PM 1:00 PM – 2:00 PM Break 2:30 PM – 4:00 PM	<b>Session 1</b> Microalgae biotechnology paving the way to a carbon-negative future	Dr. Indrajit Sinha
	<b>Session 2</b> Impact of climate change on the animal health system	Dr. Ashok Kumar
	<b>Activity</b> Collage-making Competition.	
<b>April 18</b> 12:00 AM – 1:00 PM 1:00 PM – 2:00 PM Break 2:30 PM – 4:00 PM	<b>Session 1</b> Climate Change: Your actions matter	Prof. Vimla Rani Chopra.
	<b>Session 2</b> Living in the Anthropocene under the climate change regime	Dr. Brij Kishore Gupta
	<b>Activity</b> Quiz and extempore speeches	
<b>April 19</b> 12:00 AM – 1:00 PM 1:00 PM – 2:00 PM Break 2:30 PM – 4:00 PM	<b>Session 1</b> Climate Change and Psychology: Theory, Practice and Action	Dr. Simantini Ghosh
	<b>Session 2</b> Effect of Climate Change on immune system and health	Dr. Keshar Kunja Mohanty
	<b>Activity</b> Cultural activities on the theme	Dr. V. Prem Prakash
<b>April 19</b> 12:00 AM – 1:30 PM 1:30 PM – 2:00 PM Break 2:30 PM – 4:00 PM	<b>Session 1</b> Environmental influences on brain development	Dr. Nisha Patro
	<b>Valedictory Address</b>	Prof. Ishan Patro
	<b>Feedback and Certificate Distribution</b>	

# Inaugural Ceremony

The inaugural program was organized on April 15, 2024. 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.

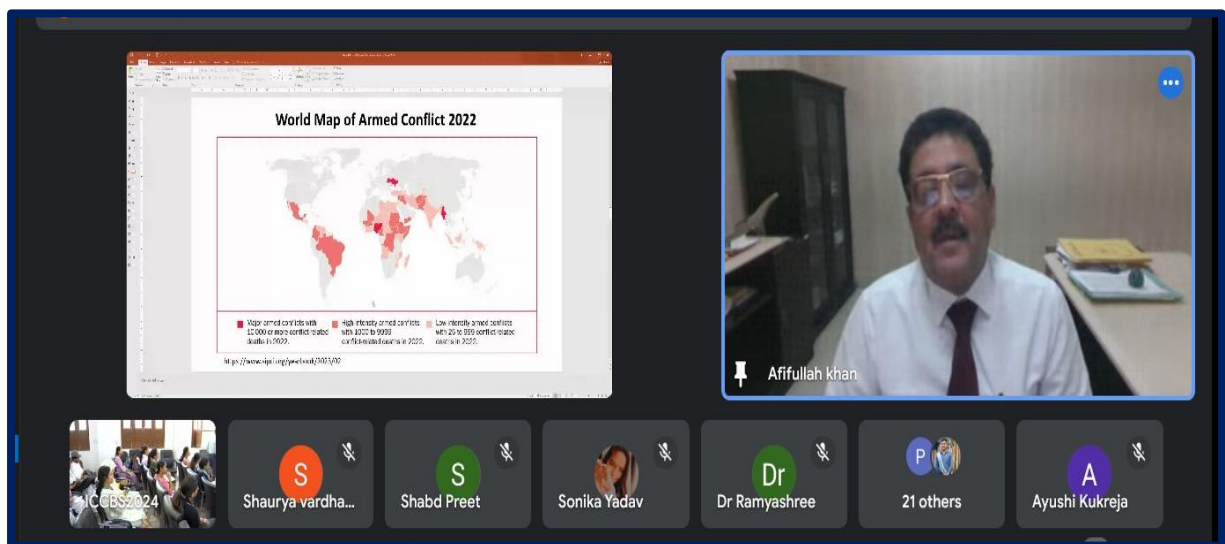
Prof. Sant Prakash, Convener of the workshop welcomed the guests. The program was graced, by the honourable Director,

DEI, Prof. C. Patvardhan, and Prof. Jyoti Gogia, Nodal Office, AIU-DEI-AADC. Dr, Amla Chopra, the Co-convener of the program proposed the vote of thanks. The program was hosted by Dr. Reshma Bhatnagar.



## Programme Sessions

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.



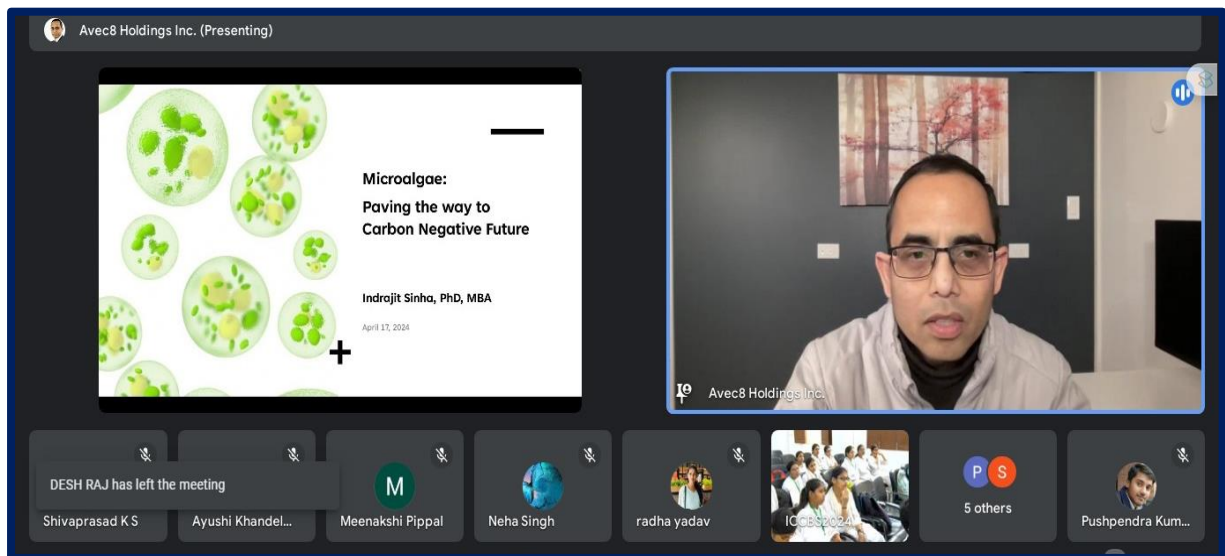
He emphasized in the lecture and demonstrated statistically that the wars owe the most for the change of climate. The need of the hour is to bring peace and harmony and that will be reflected in the drastic change of the climate today. The talk stirred interesting discussion and several questions were asked by the students.



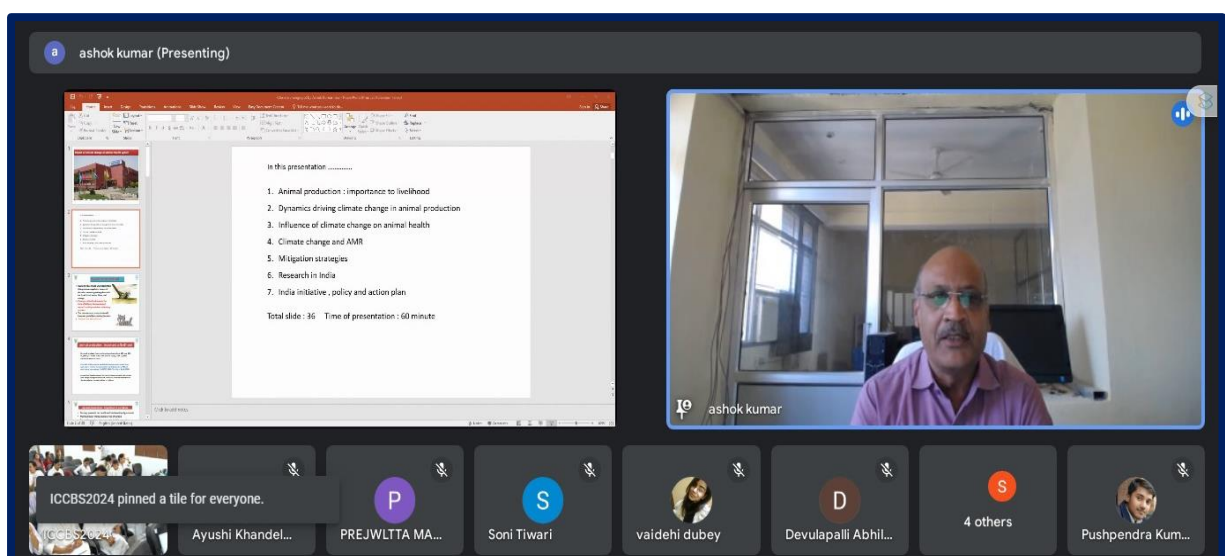
In the subsequent session, Mr. Pankaj Gupta, CEO, Zero Energy Solutions, Dayalbagh, Agra, shared valuable insights on the Interconnection between the built environment, climate change,



and biological systems. He has raised another very important parameter, that built-in constructions reducing the earth's area bring drastic changes in the climate.

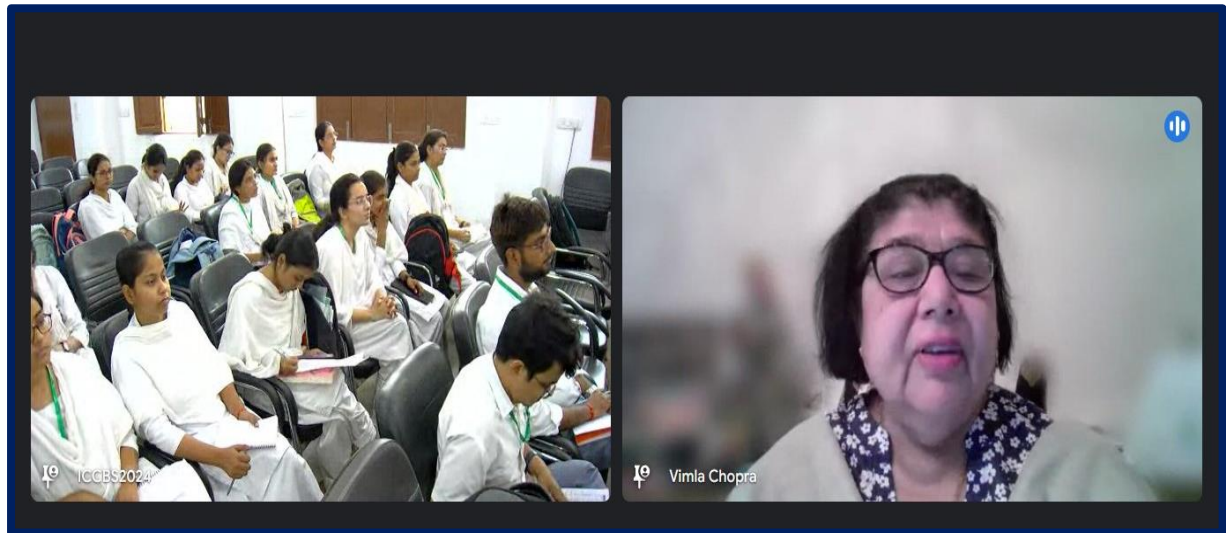


On the third day of the workshop, Dr. Indrajit Sinha, Vice President of Science and Technology, Florida, USA gave an enlightening presentation on *Microalgae biotechnology paving the way to a carbon-negative future*. He prophesied the future strategies for mitigating the threats of climate change by 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.

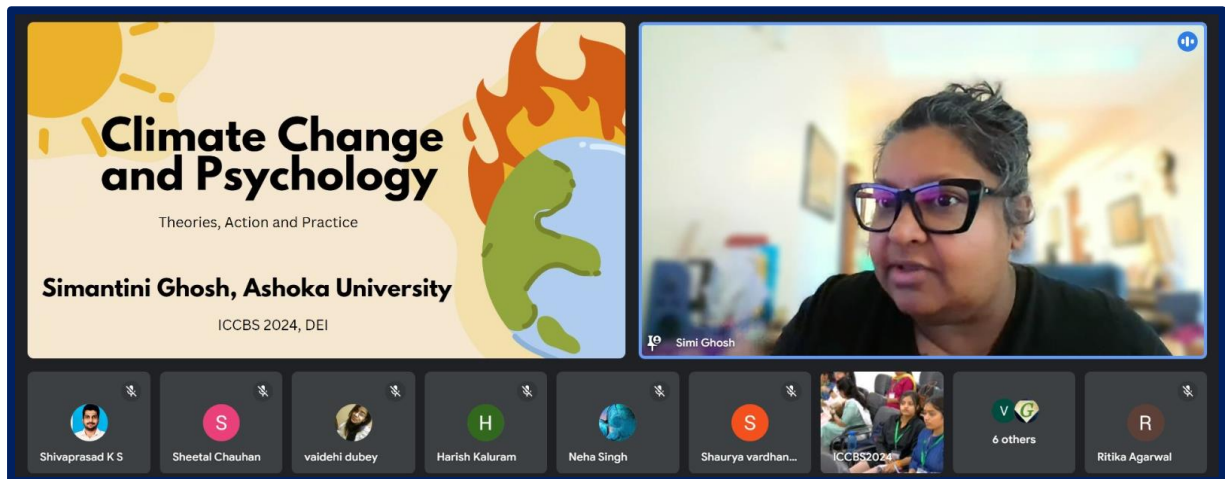


On the fourth day, Prof. Vimla Rani Chopra, Community College, Texas University Houston, TX, USA delivered a very interesting presentation on the topic *Climate change: your actions matter* sharing real-life examples of how a changed mindset could be crucial for the sustenance of life on this planet.



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 VC, Ravenshaw University, Cuttack, and President Indian Academy of Neurosciences.



The workshop report was presented by the Co-convener, Dr. Amla Chopra. This was followed by awards distribution and certificates 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 Workshop came to an end with a vote of thanks, followed by the University Song and the National Anthem.

**DEI Advisors**

Prof. C. Patvardhan, Director, DEI  
Mrs. Sneh Bijlani, Treasurer, DEI  
Prof. Anand Mohan, Registrar, DEI

**AIU Advisors**

Dr. Pankaj Mittal, Secretary General, AIU  
Dr. Amarendra Pani, Joint Director & Head, Research Division, AIU

**Programme Convener**

Prof. Sant Prakash  
Head, Department of Zoology, DEI

**Programme Co-convener**

Dr. Amla Chopra  
Assistant Professor, Department of Zoology, DEI

**Organising Committee**

Prof. Alka Prakash, Department of Zoology, DEI  
Prof. Shabd Preet, Department of Zoology, DEI  
Dr. Lalit Mohan, Department of Zoology, DEI  
Dr. Reshma Bhatnagar, Department of Zoology, DEI  
Dr. Priyanka Gautam, Department of Zoology, DEI  
Dr. Nikita Sharma, Department of Zoology, DEI  
Dr. Shruti Sharma, Department of Zoology, DEI

**AIU-DEI-AADC Nodal Officer**

Prof. Jyoti Gogia  
Department of Economics, DEI

