

Report and Activity Highlights January-December 2024

Plastics

& The Sustainability
Paradox

organized by

Climate Change Research Institute

in association with

**Indian Institution of Chemical Engineers, NRC
and India International Centre**

on

World Earth Day Science Campaign

24th April 2024 (Wednesday)

Climate Change Research Institute
Science & Technological Solutions for Sustainable Energy Future

About Climate Change Research Institute



Climate Change Research Institute (CCRI) is a not-for-profit organization registered under Registration Society Act 1860. The website is www.ccriglobal.com

The Institute has been founded with a vision to promote understanding of climate change, mentoring and developing human resource capabilities for finding solutions. The ultimate goal of climate change adaptation and mitigation is to reduce accumulation of greenhouse gas (GHG) emissions in the atmosphere and reduce *carbon footprints*.

The Institute has a mission is to inform youth in schools and colleges about the environment, ecosystem changes and consequences of climate change through awareness and capacity building on topics of scientific & societal interest such as Energy, Health, Water and Air & plastic pollution among others.

Message from the President



"The Environment is everything that isn't me"- Albert Einstein

The planet Earth has already been irrevocably changing due to man-made activities. You and I can and must make a difference. To create awareness among the students and teachers, CCRI has been holding campaigns and workshops to address climate change issues and has conducted surveys on Ecosystem Management.

The Climate Change Research Institute (CCRI) has taken a new approach through Networking Science Campaigns, Lectures and Capacity Building Workshops, and publication of Bulletins and e-Magazines to create awareness among different strata of society, especially youth.

The CCRI is dedicated to take actions for reducing carbon footprints by application of science & technology and adopt ways & means to achieve its objectives. A series of events relating to the national climate goal of reaching Net-Zero by 2070 have begun. To fulfil this objective I present before you with pleasure, highlights of activities undertaken by CCRI during the year 2024.

Looking ahead, we will continue to promote the cause for sustainable development. Our upcoming events are planned on National Science Day 2025 and Awareness and Capacity Building Workshop on Carbon Capture, Utilization and Storage on World Environment Day for climate change mitigation and adaptation.

I thank our colleagues, supporters and team members for their tireless and dedicated efforts to achieve our Net-Zero mission.

With best wishes,
Dr. (Mrs.) Malti Goel, President



National Conference held at Gwalior in collaboration with ABV- IITM Gwalior

A national conference on '**Climate Change and Renewable Energy Integration towards Net Zero**' was jointly organized by Atal Bihari Vajpayee-Indian Institute of Information Technology and Management (ABV-IIITM), Gwalior and Climate Change Research Institute (CCRI), New Delhi at Gwalior on **16th - 17th March, 2024**.

Globally, the world is moving towards decarbonization and the Renewable Energy (RE) is most acceptable solution. Given that India has committed to achieve net-zero targets by 2070, the conference was conceived to create awareness about the role of renewable energy and challenges relevant to identify the issues and pathways for its integration with Information Technology in sectoral applications for achieving NetZero target.

The event was graced by Prof D.P. Agrawal, Founder Director ABV-IIITM; Director, Prof S. N. Singh, Prof R. Sahu and other eminent scientists and experts from different parts of India, who presented papers. Dr (Mrs) Malti Goel, Chief Executive, CCRI delivered the Plenary on '**Climate Change and RE Pathways towards Net Zero**'. The conference proceedings with Abstracts book of papers, edited by Dr. Arun Kumar was brought out. Three 'Best Paper' awards were given.



CCRI in COP28

Dr. (Mrs.) Malti Goel, President, Climate Change Research Institute was designated as **Climate Leader** and was invited to the **Climate Action Innovation Forum** held during COP28, the 28th meeting of the Conference of Parties, under UNFCCC. A **Global Decarbonization Accelerator** for energy industry was adopted in the meeting held at *Madinat Jumeirah, UAE* from 4th – 8th December, 2023 for achieving Net-Zero goals. It endorsed:

- ❖ Tripling of Renewable Energy Capacity
- ❖ Doubling of Energy Efficiency
- ❖ Not using fossil fuels



‘Climate Change & Net Zero’ Lecture Series



2024 Lecture Series

Most countries in the world are committed to reach Net-Zero by 2050. India has set a target of 2070. When we say that we should be Net-Zero by 2050 or 2070, it does not mean that there will be no greenhouse gas emissions from our developmental activities. While making efforts to reduce emissions as much as possible, we need to increase the absorption capacity of the earth. Tree plantation can restore ecology. The soil and oceans absorb CO₂. We look for causes, analysis and scientific solutions.

The Climate Change Research Institute (CCRI) launched Climate Change and Net-Zero lecture series and organized expert lectures focusing on the critical topics of Climate Change for achieving Net-Zero targets. The lecture series is aimed to raise awareness among the students, educators and wider community about the pressing environmental challenges we face in our day to day life.



All Events Overview

National Science Day Campaign

Organizer: The Climate Change Research Institute in association with the Indian Institute of Chemical Engineers NRC and India International Centre

Guest Speaker: Prof. Anil Verma, IIT Delhi

"A Journey towards a Greener Tomorrow"

Date: February 28, 2024; **Venue:** India International Center, New Delhi ; **Participants:** 77

Key Highlights: Emphasis on decarbonization and its relevance to transport sector.

The Climate Change Research Institute organized First interactive lecture on **National Science Day** 2024 titled 'A Journey towards a Greener Tomorrow' by Prof. Anil Verma, Department of Chemical Engineering, IIT Delhi on February 28th, 2024, attended by the students from various schools and colleges in large number. Chief Guest, Prof. D.P. Agrawal, Former Chairman, UPSC, Founder Director IITM, Gwalior, delivered the Inaugural Address. He said we need make decarbonisation as a mass movement in schools towards Net-Zero.

Participant Schools & Colleges

- Birla Vidya Niketan, Pushp Vihar
- Lal Bahadur Shastri Smarak (JAVM) Sr. Sec. School, R.K. Puram
- St. Thomas Girls Sr. Sec. School, Mandir Marg
- Universal Public School, Preet Vihar
- Bhaskaracharya College of Applied Sciences, Delhi University

Dr. (Mrs) Malti Goel President and Chief Executive, CCRI introduced the theme of the Lecture Series and the importance of National Science Day. Special remarks were made by Dr. S. Nand, Chairman, Indian Institute of Chemical Engineers, NRC. Certificates and Awards were given. Bulletin of **Climate SAR**, Vol. VIII, No. 1, January 2024 issue having the theme 'Climate Action for Net-Zero' was released.





World Earth Day Science Campaign

Organizer: The Climate Change Research Institute in association with the Indian Institute of Chemical Engineers NRC and India International Centre

Guest Speaker: Mr. Swapan Kumar, Secretary, ICPE
"Plastics - A Sustainability Paradox"

Date: April 24, 2024; **Venue:** IIC, New Delhi

Participants: 82

Key Highlights: Plastic pollution and implications of plastics use for sustainability

The Climate Change Research Institute organized a Science Campaign on World Earth Day. **Ambassador H.E. Mrs. May-Elin Stener, Royal Norwegian Embassy** graced the occasion as **Chief Guest**. In her Inaugural Address she highlighted the importance of world earth day theme and plastic pollution control. Norway's plastic pollution and circular economy strategies are helping us reduce the pollution. Norway and India have joined hands in the India-Norway Marine Pollution Initiative.

Participant Schools and Colleges

- Lal Bahadur Shastri Smarak (JAVM) Sr. Sec. School, R.K. Puram
- Navyug Sr. Sec. School, Moti Bagh
- St. Thomas Girls Sr. Sec. School, Mandir Marg
- Universal Public School, Preet Vihar
- Bhaskaracharya College of Applied Sciences, Delhi University
- Lady Irwin College, Delhi University.

Mr. Swapan Kumar, Secretary, ICPE and Ex-VP Reliance delivered the second lecture on '**Plastics-A Sustainability Paradox**' on April 24th, 2024. Dr. (Mrs) Malti Goel President and Chief Executive, Climate Change Research Institute introduced the theme of the Lecture Series the importance of Earth Day. Special remarks were made by Sh. Gautam Sen, Ex- Sr Vice President, Reliance, and Dr. S. Nand, Chairman, Indian Institution of Chemical Engineers, NRC. **A Quiz about Plastic Pollution and World Earth Day** was held, participated by students from class VII to XI. Awards and Certificates were given.





World Environment Day Science Campaign

Organizer: The Climate Change Research Institute in association with India International Centre.

Guest Lecture: Prof. Meenakshi Dhote, School of Planning & Architecture

"Ecosystem Restoration"

Date: June 26, 2024; **Venue:** IIC, New Delhi

Participants : 52

Key Highlights: Focus on traditional water resource management and role of wetland conservation in decarbonization

The Climate Change Research Institute organized **Third lecture** on 'Ecosystem Restoration' by Prof. Meenakshi Dhote, Dean and Head, Department of Environment Planning, School of Planning & Architecture, New Delhi on **Interactive Lecture on "Ecosystem Restoration Through Safeguarding Traditional Water Resources"** attended by the Teachers from various schools and colleges in large number. She presented case studies of wetlands in India and described carbon Wetland Management Guidelines.

Participant Schools & Colleges

- Ambience Public School, Safdarjung Enclave
- Delhi Police Public School, Safdarjung Enclave
- St. Thomas Girls Sr. Sec. School, Mandir Marg
- Universal Public School, Preet Vihar
- Bhaskaracharya College of Applied Sciences, DU

Mrs. Maya Gupta, Founder, UES and Director-Principal, Universal Public School delivered the Special Address on **Environment Day theme**. The World Environment Day Science Campaign 2024 began with a Quiz. Dr. (Mrs) Malti Goel, President and Chief Executive, CCRI introduced the theme and said that wetlands have a major role in carbon sequestration, a vital technology towards Net-Zero. Prof. V.S. Verma, Former Chairman, Central Electricity Regulatory Commission presented the Inaugural Address and released **Bulletin of Climate SAR 'Climate Change and Water'** Vol. IX, No.1, January 2024.





World Ozone Day Science Campaign

Organizer: The Climate Change Research Institute in association with Min. of Earth Sciences and India International Centre.

National Seminar on "Ocean and Marine Ecosystem"

Guest Lecture: Dr. V. K. Soni, IMD New Delhi

Dr. Abhijit Mitra, RTI University, WB

Date: September 18, 2024; **Venue:** IIC, New Delhi

Participants : 75

Key Highlights: Insights into Antarctic Ozone Hole and Climate change impacts due to Sea-level Rise

The Climate Change Research Institute (CCRI) has launched 'Climate Change and Net Zero' Lecture Series to fulfil the society's mission to impart environment education and create awareness among youth about current challenges in relation to climate change. Threats of climate change are causing sea level change and impacting low level cities and coastal areas. Managing and protecting marine ecosystems in times of ozone variability is crucial in attempting to conserve biodiversity in the face of Earth's rapidly changing climate. Dr. V.K.Soni, Head EMRC & PMRD, IMD New Delhi. delivered the Guest Lecture on '**Recent four unusual Antarctic ozone hole seasons: the way forward for Montreal protocol science**'



Participant Schools & Colleges are

- Delhi Police Public School, Safdarjung Enclave
- Kamal Model Sr. Sec. School, Uttam Nagar
- Navyug Sr. Sec. School, Moti Bagh
- St. Thomas Girls Sr. Sec. School, Mandir Marg
- Universal Public School, Preet Vihar
- Bhaskaracharya College of Applied Sciences, DU

Guest lecture on '**Sea level Rise, Impacts and Mitigation**' was delivered by Dr. Abhijit Mitra, Director, research techno India University, WB online from abroad. Special Address was delivered by Dr. Jagvir Singh, Scientist 'G', Ministry of Earth Sciences, Govt. of India on **Earth System Science and Environment Protection** gave an overview of structure and various outreach activities of MoES including Earth Science Olympiad. He released of Bulletin on **Climate SAR, Vol. IX, No. 2, July 2024.**





National Mathematics Day Science Campaign

Organizer: The Climate Change Research Institute in association with Min. of Earth Sciences and IIC

National Seminar on “Mathematics and Marine Ecosystem”

Guest Lecture: Dr. G. Latha, (NIOT), Chennai,
Dr. Kunal Chakraborty, (INCOIS), Hyderabad.

Date: December 19, 2024; **Venue:** IIC, New Delhi

Participants : 95

Key Highlights: Ocean Noise Pollution and Role of Mathematics in Understanding Climate Change

The Climate Change Research Institute (CCRI) organised **National Mathematics Day Science Campaign** for creating awareness about S. Ramanujan the genius mathematician of India. This initiative was led by Dr. (Mrs) Malti Goel, President and Chief Executive, CCRI. It was held in *Hybrid Mode* and was attended by 12 teachers and 64 students across NCR. Prof G. Latha from National Institute of Ocean Technology, Chennai displayed audio recordings of sound emanating from mammals under sea and how Mathematics can play a role in her in her lecture on ‘**Ocean Noise Pollution**’.

Participant Schools & Colleges

- Balvantray Mehta Vidya Bhawan ASMA, GK-2
- Delhi Police Public School, Safdarjung Enclave
- Kamal Model Sr. Sec. School, Uttam Nagar
- Lal Bahadur Shastri Smarak (JAVM) Sr. Sec. School, R.K. Puram
- Navyug Sr. Sec. School, Moti Bagh
- St. Thomas Girls Sr. Sec. School, Mandir Madir
- Sarvodya Kanya Vidhyalaya, Soami Nagar
- Universal Public School, Preet Vihar
- Bhaskaracharya College of Applied Sciences, DU

Dr. Kunal Chakraborty from Indian National Centre for Ocean Information Services (INCOIS), Hyderabad delivered the virtual lecture on ‘**Role of Mathematics to Understand the Impact of Climate Change on Marine Ecosystems**’. **Excitement about oceans role in climate change was brought to Delhi by these lectures.** Ms. Namita Gupta, Head, INSPIRE and MANAK, Department of Science & Technology, GoI, was the **Guest-of-honor**. A **Quiz Competition** was held among the students, mostly from class IX and XI. Awards and Certificates were given





Key Takeaways

Individual Actions Matter

Every small action counts, and collective efforts can lead to significant behavioral change for addressing climate change crisis



Collaboration is the Key

Partnerships between governments, NGO's, schools & colleges and communities are essential for driving sustainable development to achieve climate goals



Need for Education and Awareness

Raising awareness about environmental issues and promoting education are crucial for inspiring youth and communities towards Net-Zero target



Key Findings

Our Analysis revealed critical factors impacting Students' participation in Quiz Competitions, highlighting importance of environment education.

Diverse Themes

The lecture series comprises multiple events focusing on different aspects of climate change, including energy, electrical vehicles, plastic pollution, ecosystem restoration, and marine ecosystems

Interactive Components

The inclusion of quizzes and interactive lectures suggests an emphasis on engaging the audience actively, which is crucial for effective learning and retention of information by youth in early age



Certificates and Recognition

Participants received certificates & ID for Climate Change Youth Forum, which not only incentivizes attendance but also recognizes the importance of their engagement in **Climate Action**



CCRI's Ambition



Future Climate Action to promote environment education in schools and bring out popular science series for sustainability studies

Youth Engagement is Critical

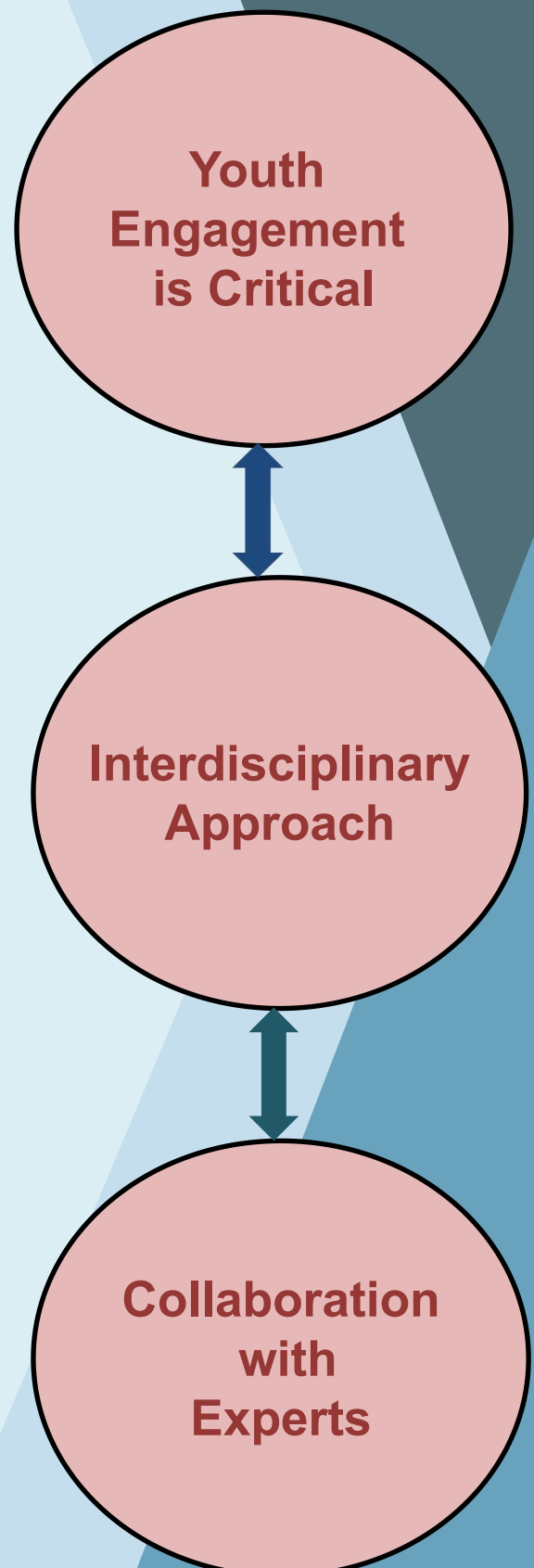
The involvement of students from various educational backgrounds highlights the importance of engaging the younger generation in climate discourse, fostering a culture of sustainability and environmental stewardship

Interdisciplinary Approach

The integration of various disciplines, including science, technology, engineering, marine science and mathematics, demonstrates the multifaceted nature of climate change and the necessity for collaborative solutions

Collaboration with Experts

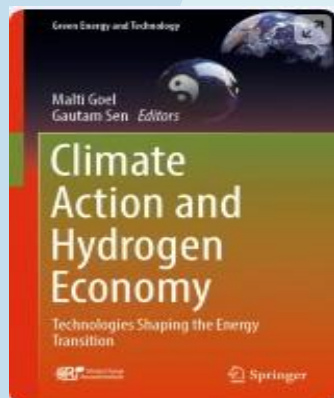
Collaboration with the experts from various fields enhances the quality of information shared and inspires scientific temper among school children for solving climate-related challenges





Our Publications in 2024

Scientific Books Published



Climate Action and Hydrogen Economy: Technologies Shaping the Energy Transition focuses on up-to-date progress on the current status of technology and hydrogen energy in India. It includes contributions from leading experts, and covers emerging topics to describe need for a transition to hydrogen economy.



Plastic Pollution: Challenges and Green Solutions provides a comprehensive understanding of the challenges being faced in managing plastic waste and showcases innovative solutions that can mitigate the adverse effects of plastic pollution on the environment.

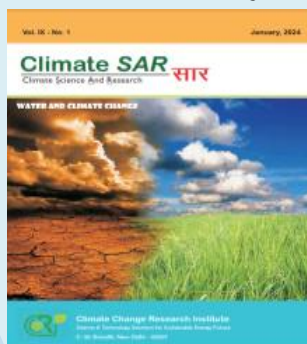
Bulletin of Climate SAR

Vol. VIII, No. 2, June 2023



Climate Action for Net Zero

Vol. IX, No. 1, January 2024



Climate Change and Water

Vol. IX, No. 2, July 2024



Climate Action and Hydrogen

Conclusions



The "**Climate Change and Net Zero**" Lecture Series comprises multiple events focusing on different aspects of climate change, including energy, electrical vehicles, plastic pollution, ecosystem restoration, Mathematics and marine ecosystems. National Science Day, World Earth Day, World Environment Day, World Ozone Day and National Mathematics Day Campaigns were held during the year. It has successfully engaged students and educators in critical discussions about climate change and sustainability. A national level conference was organized in association with ABV-IIITM Gwalior. The collaboration with experts from various fields enhanced the quality of information shared and inspired scientific temper among school children for solving climate-related challenges. With a focus on interactive learning and expert insights, the series has laid a strong foundation for ongoing education in Climate Action. The CCRI looks forward to foster a more informed and proactive community dedicated to addressing climate challenges.





*YOU are the last Generation that can make a
difference to planet's sustainability crisis*

Our thanks to all sponsors and stakeholders for their unwavering support and commitment to this cause. Your collaboration and expertise has been important and we look forward to continuing our partnership in the years to come.



Contact us

Climate Change Research Institute

C-85 Shivalik

New Delhi 110017

www.ccri.in

Email: info.acbccs@gmail.com;

info.ccriglobal@gmail.com