



Climate Change Research Institute

Science & technology solutions for sustainable energy future

C-85, Shivalik, New Delhi – 110017, (INDIA)

Tel: +91-11-41034450, Email: contactus@ccri.in

Communication on Engagement (COE)

Period covered by this Communication on Engagement

From: [January 2020] To [December 2021]

The **Letter of Commitment** signed by the Chief Executive Officer of **Climate Change Research Institute** to the **Secretary-General** of the **United Nations** expressing ongoing commitment to the Global Compact and its principles.



Climate Change Research Institute

To,

Date: 28.04.2022

Mr. H.E, Antonio Guterres
Secretary-General
United Nations
New York, NY 10017, USA

Ref. No. : CCRI/UNGC/3/COE2022

To our Stakeholders:

I am pleased to confirm that Climate Change Research Institute (CCRI) reaffirms its support to the United Nations Global Compact and its Ten Principles in the areas of Human Rights, Labour, Environment and Anti-Corruption. This is our Communication on Engagement with the United Nations Global Compact. We welcome feedback on its contents.

In this Communication on Engagement, we describe the actions that our organization has taken to support the UN Global Compact and its Principles as suggested for an organization like ours. We also commit to sharing this information with our stakeholders using our primary channels of communication.

Yours Sincerely,

Dr. (Mrs.) Malti Goel

President

Climate Change Research Institute
C-85, Shivalik, New Delhi-110017, India

Phone: 9810287738
E-Mail: maltigoel2008@gmail.com

I. ABOUT CCRI

The Climate Change Research Institute is a registered society with the Government of India, under the Societies Registration Act of 1860 and under Section 12A and 80G of Income Tax Act 1961. The Institute is registered with *NITI Aayog*, Government of India. The Institute became a Member of UN Global Compact in 2015. It is also Associate Member of Global CCS Institute, Australia.

The Climate Change Research Institute has been founded with a vision to promote understanding of climate change, mentoring and developing human resources. It has a mission to educate and inform youth in schools and colleges about the ecosystem changes and consequences of climate change. It disseminates science & technology research in the field of environment and climate change mitigation & adaptation to stakeholders and policy makers. The Institute is internationally renowned whose activities focus on research for finding out solutions to mitigate climate change impacts, in addition policy advocacy on national priorities. Awareness on scientific & technological measures for implementation of UN Sustainable Development Goals for environment protection and economic growth are undertaken.

II.. MAIN OBJECTIVES AND ACTIVITIES OF THE ORGANIZATION

- Promoting environment education and teaching in climate change among wide strata of society.
- Creating scientific awareness through workshops, conferences, lectures, capacity building programmes on the topics of environment and sustainable development.
- Development of educational tools on emerging topics of societal interest; such as energy, health and water in the climate change context.
- To undertake studies in energy sector: clean coal, carbon capture and utilization, renewable sources and in achieving Sustainable Development Goals, through science & technology solutions.
- To enter into collaborations with other national, international organizations with similar objectives and also encourage study groups on various environmental aspects.

Glimpses of our activities are available at www.ccri.in

The Institute with its scientific back-up has been serving the wide strata of society at various levels. It organizes awareness and capacity building workshops, scientific events of international relevance, lectures, campaigns on topics of scientific & societal interest in energy and environment for students, teachers, researchers and community members. It aims to address as many stakeholders as possible through lectures in schools on one hand and discussions and awareness workshops among the students & researchers in colleges on the other. It has a vision is to become a Centre for Excellence in developing human resources and technical capacity building in the area of sustainable development <http://ccri.in/brochure/>

III. AWARDS, ACHIEVEMENTS AND PARTNERSHIPS ON SUSTAINABILITY (2015-2019)

- Dr. (Mrs) Malti Goel, President was conferred PEARL Foundation **Lifetime Achievement Award 2016** in recognition of her outstanding contributions and achievements in the field of Climate Change Research in India, Madurai on 10th December 2016.
- The Institution of Electronics and Telecommunication Engineers facilitated Dr. (Mrs) Malti Goel in the IETE **Women's Day Celebration** on 8th March, 2014, New Delhi. In the Seminar on Challenges and Opportunities for Women in Science and Technology
- Our President Dr. (Mrs) Malti Goel was **Chief Guest** to the Platinum Jubilee Annual Function Celebrations of 'Birla Balika Vidyapeeth', Pilani held on December 8, 2015 as **distinguish Alumni** of the school.
- Bharat Nirman facilitated Dr. (Mrs) Malti Goel with **Build India (Corporate) Award 2015** for recognition of her contribution in the field of Environment on November 15, 2015, New Delhi.
- International Conference on Environment and Ecology, Kolkata awarded **Fellowship** to Dr. (Mrs) Malti Goel for her outstanding contribution in the field of Environment and Ecology on 2nd March 2015
- MOU with MNIT Energy Center, Maulana Azad National Institute of Technology, Bhopal in 2015
- President was invited by the **Chinese Academy of Sciences** to 2015 GREEN TECH – CAS-TWAS Symposium on July 23-25, 2015 at Institute of Process Engineering held in Beijing, China.
- Invited to CAS-TWAS Symposium at Institute of Process Engineering, Chinese Academy of Sciences on Green Chemistry and Engineering for Sustainable Development (GCE 2016), Beijing, 2016.
- Chaired Technical Session in Indo-Australian Workshop held at Anna University, Chennai, India on Development and Application of Low Emission Coal Technologies for the Indian Scenario, 2017
- Guest Lecture on **CARBON UTILIZATION: A Policy Dilemma or an Emerging Technological Challenge?** In the National Seminar on Carbon Capture and Utilization Technology, by IChE, Kolkata on Feb 24-25, 2017.
- Invited to attend the **National Conference on Global Warming and Climate Change** by EPCO, Govt. of MP, Bhopal on November 21-22, 2015 held at Vidhan Sabha, Bhopal.

- Guest Lecture delivered in industry **Tata Steel, Jamshedpur on 19th February 2016** in the National Conference on Environment Challenges in Steel Sector.
- Honoured on the **Women's Day 8th March 2016** as **Chief Guest** in the "Projected Strategies and Regulations to Address Current Environment Challenges" by MITS, Gwalior.
- Delivered Invited Lecture on '**Carbon Capture and Utilization: A Policy Predicament for Climate Change Mitigation or an Emerging Technological Challenge**' at the International Conference on 'Carbon Capture and its Utilization' organized by **CSIR National Chemical Laboratory** and the Royal Chemical Society at Pune on December 14-15 December 2018.
- Conducted Workshop on CCS in the first **Euro-Asia Conference on CO2 Capture and Utilization (EACCO2-CU)** held in Malaysia on August 6-8, 2019
- Participated in the **All India Radio 'Panel Discussion on Climate Change'** on 2nd June, 2019 relayed on World Radio
- **Chief Guest** at the "Delhi State Science Teachers' Forum" (Regd.) Science Teachers' Congress 2018 on the theme "**Science and Technology Literacy for National Development**" held at Vivekanand School, Anand Vihar on 29th October 2018.
- Delivered **Live lecture** in education series on '**Plastics Science, Technology & Pollution**' recorded by the **Consortium of Educational Communication (CEC)** on 10th July 2018.
- Partnered in the National Seminar held at Indian Information Institute of Technology & Management on **Important Challenges in Power Sector, Gwalior**, 24-25 November 2015.
- 2nd Non Ferro India Summit organized by Indian Chamber of Commerce on Sustainable Growth Exploration, New Delhi, January 2016
- **Delivered Guest Lecture** on National Science Day at Motilal Nehru College, University of Delhi on 28th February 2018
- Participated in the '**Environment Campaign**' in partnership with **TERI University** on 24th February 2018 to create Awareness among the Citizens in Vasant Kunj and to expose them to the intricacies of degradation taking place in environment.
- **Invited lecture** in **9th World Petro Coal Congress on Waste to Energy – Plastic to Fuel : A Renewable Energy Resource**, held on 15-17 February 2019, New Delhi
- Recorded **online Video Lectures in the Orientation Course on Climate Change for Higher Education Faculty** at National Research Council (NRC) of IISER, Pune on September 10, 2018 (On-line Lectures are uploaded on SWAYAM Portal).
- **Invited lecture** on **Carbon Capture, Storage & Reuse: Technologies and Initiatives in India** in the "**Advances in Heat Transfer and Refrigeration**" during 8-13 January 2018 at Institute of Infrastructure, Technology, Research and Management (IITRAM), Ahmedabad on 12th January 2018.

- **Invited lecture in RIS-ITEC Capacity Building Programme on Science Diplomacy**, 7-18 January 2019 on “**Globalization of Clean Technologies and Science Diplomacy**”.
- Invited Paper on “**Broad Contours of Science Diplomacy**” in the Inaugural workshop of RIS-NIAS Programme on Science Diplomacy held on 7th May 2018.
- Panellist in the National Conference on ‘Water CRISIS, Public Health & Sustainable Solutions (WCPHS) organized by ‘Save the Environment’, Kolkata held 21st – 22nd October 2019 at INSA, New Delhi.
- Delivered First Dr S.Z. QASIM ORATION Lecture on ‘Climate Change and its Effect on Human Health’ on 4th July 2019 at Jamia Hamdard organized by NESAI.

Participation in the GC Local Network Programmes

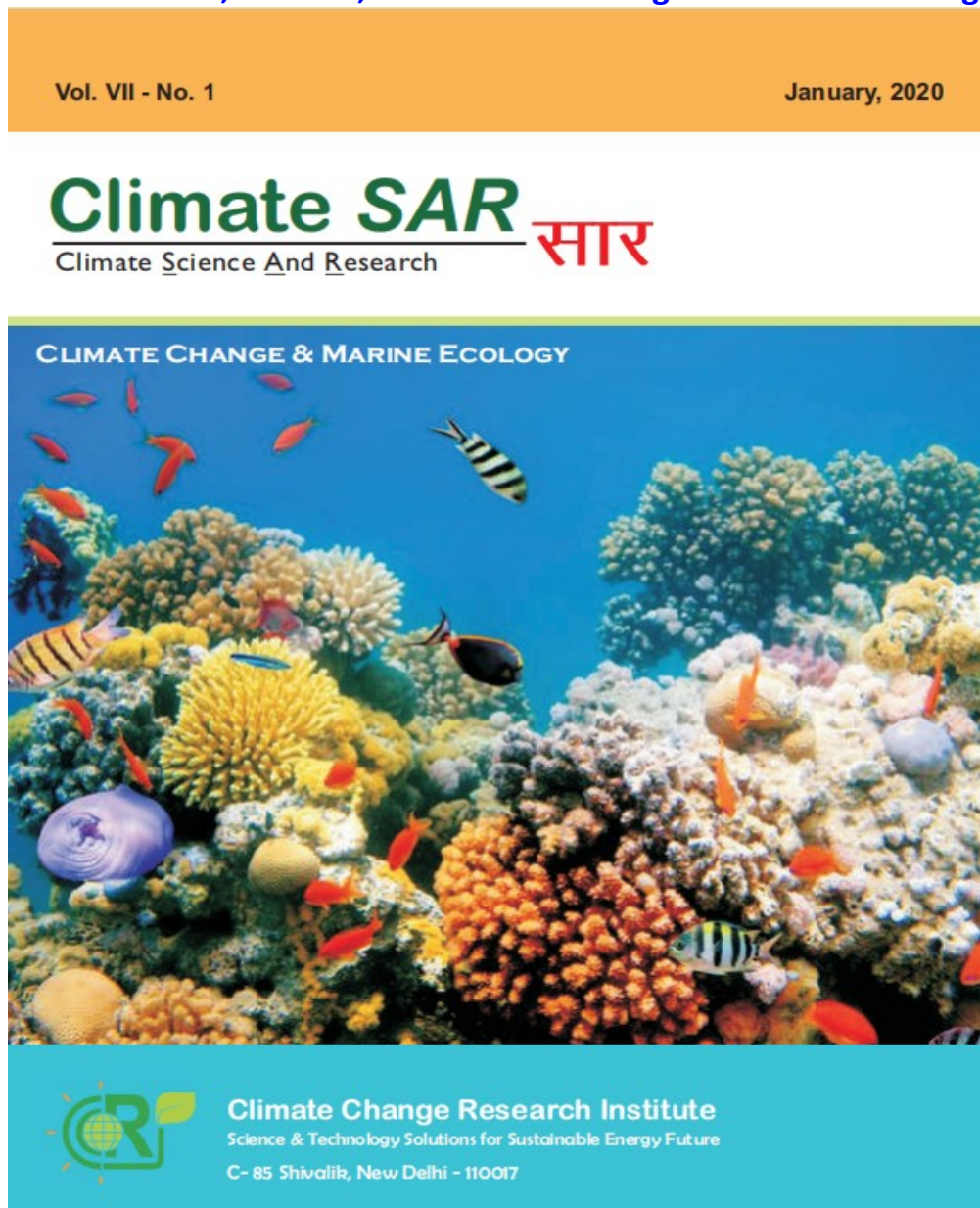
1. Our Institute participated in the International event on **Making Global Goals, Local Business (INDIA)** held in New Delhi under the auspices of **UNGC Network India**
2. Lecture on **Sustainable Development Agenda and Role of Science, Technology and Innovation** on 2nd August 2017 in the **GC Network India Knowledge Sharing on CSR Practices – Ensuring Sustainable Communities & Environment** at **Central Warehousing Corporation**, Government of India.
3. **Organized** Capacity Building Workshop in partnership with Indian network of UNGC on **Advancing Sustainable Development Goals: Role of Science, Technology and Innovation** on 27-28th July, 2017
4. Participated In the ‘Certification of Natural Resources to Combat Desertification and Restoring Landscapes’ of UN Convention to **Combat Desertification (UNCCD) COP 14**, held in India on ‘**RESTORE LAND TO SUSTAIN LIFE**

IV. ACTIVITIES PROGRESS REPORT (Jan 2020-Dec 2021)

The years 2020 and 2021 are marked with the pandemic COVID-19; the whole world came to standstill in March 2020, being shaken by SARS-CoV2 virus. At that time no one knew to what extent the virus would affect and what is the remedy? There was a complete lockdown worldwide, leading to millions/billions of people confined to their houses. Mobility came to standstill. The healthcare system of the countries collapsed. According to the reports 450 million people were affected worldwide, India had 44 million cases reported altogether.

The Climate Change Research Institute (CCRI) took initiatives to enlighten Youth about the ecosystem changes, linkages of COVID-19 with climate change, biodiversity, sustainable development goals and adapting to S&T solutions to minimize the impacts. In last two years considerable effort has gone into holding virtual events on environment education and awareness. The main activities and programs organized and managed by the Climate Change Research Institute (CCRI), INDIA starting from January 2020 to December 2021 are as follows.

1. Climate SAR, Vol. VIII, no.1 Climate Change and Marine Ecology



Key Messages

1. **Ocean and Climate Change:** Oceans cover 71% of the Earth's surface, and are storehouses for 97% of water on Earth.....
2. **Plastic Waste and Marine Debris:** More than 1.5 trillion plastic bags are used worldwide in a year.....
3. **Ocean Acidification and Marine Ecology:** Many ocean-related benefits to society such as coastal protection or provision of food and income are getting affected by these.....
4. **Ozone Depletion and Marine Ecosystem:** The most severe effects of climate change and solar UV-B radiation exposure are; decreased reproductive capacity and impaired larval development.....
5. **Implementing Sustainable Goal 14 (SDG 14) - Life below Water:**

The CCRI organized the seminar on '**Marine Ecology: Implementing Sustainable Development Goals 14**' Puthuvype, Kochi promoted by Centre for Marine Living Resources & Ecology (CMLRE), Ministry of Earth Sciences and the Swadeshi Science Movement (SSM). It was attended by more than 200 graduate, postgraduate and research students from various Universities. An Information brochure on **Implementing SDG14 and Climate Change – Drivers & Impacts; Solutions & Actions** was shared with participants. The event conveyed the message to reduce plastic pollution.

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

About CCRI
The Climate Change Research Institute (CCRI) is founded with a mission to disseminate science & technology research in the field of climate change mitigation and adaptation. It educates and informs youth in schools and colleges about the ecosystem changes and consequences of climate change. It seeks to achieve this through organizing awareness and capacity building workshops, scientific events of national relevance holds lectures, campaigns on topics of scientific & societal interest in environment and climate change.

Implementing SDG 14 - Kochi 2019
In September, 2015, the United Nations adopted the 2030 Agenda for Sustainable Development that comprise of 17 Sustainable Development Goals (SDGs) and 169 targets. The SDG 14 targets to **Conserve and Sustainably use the Oceans, Seas and Marine Resources for Sustainable Development**. The Climate Change Research Institute (CCRI) recognizes the importance of education & awareness in the context of Marine Ecology and proposes to discuss the following sub-targets of SDG 14.

14.1 - By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

14.3 - Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.

Climate Change

Drivers

- Anthropogenic Activities leading to greenhouse gas emissions
- Deforestation and Land Use Changes
- Climate and Earth System feedbacks
- El – Nino Changes
- Carbon Cycle Imbalances

Impacts

- Intense Weather Events
- Frequent Droughts & Forest fires
- Shifting Agriculture Practices
- Sea Level Rise
- Coastal and Marine Ecosystems
- Water Scarcity

S & T Solutions

- Energy Conserving & Energy Efficient Technology
- Renewable Energy Resource Utilization
- Low Carbon Fuel for Electricity
- Land and Water Management
- Marine Ecology & Sustainability
- Solar Rooftops & Parks
- Smart Cities
- Green Buildings & Infrastructure
- Carbon Capture, Storage & Utilization
- Waste Management – Reduce, Recycle & Reuse
- Beat Plastic Pollution
- Afforestation and Reforestation
- Biodiversity Conservation

What You & I can do

- Generate your own solar energy
- Use efficient electric & lighting appliances
- Use public transport or bicycle to save fuel
- Encourage Car Pooling
- Reduce and Reuse Plastic
- Do not throw waste plastic or fishing net in oceans
- Regular Beach cleaning drive in coastal areas
- Switch off lights when not in use
- Segregate & Manage your kitchen waste
- Increase plantation & greenery in surroundings
- Awareness and Education Campaigns
- Capacity Building and Training Workshops

Dr(Mrs) Malti Goel,
Chief Executive and President
Climate Change Research Institute, Email: contactus@ccri.in

Media Highlights

THE NEW INDIAN EXPRESS

Sunday, September, 22, 2019 07:34:59 PM

Search

Home > States > Kerala

First satellite seminar held at Puthuvype

The first satellite seminar of Swasraya Bharat was held at the Centre for Marine Living Resources & Ecology (CMLRE), Puthuvype, on Saturday.

Published: 22nd September 2019 06:16 AM | Last Updated: 22nd September 2019 06:16 AM

By Express News Service

KOCHI: The first satellite seminar of Swasraya Bharat was held at the Centre for Marine Living Resources & Ecology (CMLRE), Puthuvype, on Saturday.

The seminar with the theme 'Sustainable Development Goal-14 (Life under water)' was organised as part of Kerala Science Fest 2019, jointly by Swadeshi Science Movement and Ministry of Earth Sciences -CMLRE. **Climate Change Research Institute president and CEO Dr Malti Goel spoke on the theme and SDG 13 (climate change).**

Latest

- Karnataka govt's appointment of 'ineligible' officer as MD to TSCL raises eyebrows
- Rohit Sharma equals MS Dhoni's record during third South Africa T20I
- Chhattisgarh government writes to Centre for guidelines to rehabilitate internally displaced Bastar tribals

2. World Earth Day 2020



A Snippet from Google Doodle for the World Earth Day, 2020

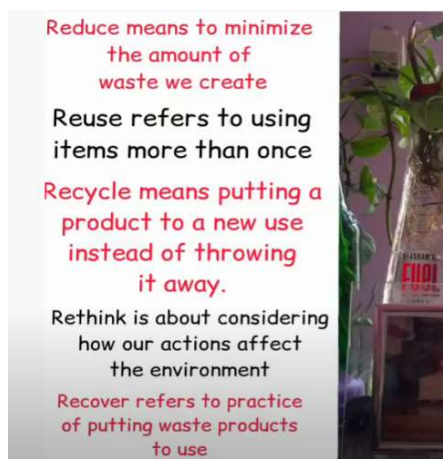
Earth Day celebration falling on 22nd April was a very special event in 2020 being the 50th Anniversary of the World Earth Day. The theme for the Earth Day 2020 was **"Climate Action"**. The CCRI planned science campaign in association with the **India International Centre (IIC)**, had to be cancelled due to pandemic COVID-19 and worldwide lockdown.

In a digital celebration Dr. (Mrs.) Malti Goel, President CCRI sent Earth Day message to all invitees quoting from Pope Francis

"The global pandemic might be one of nature's responses to man-made climate crisis".

She said the pandemic has brought about an unprecedented situation which has halted many communities, services, and programmes worldwide. By April it was reported that COVID-19 wave has almost infected more than 200 countries, with first case of officially reported by WHO on 31st December 2019 at Wuhan, China. The President message to school children narrated the LESSONS from this episode about the need to conserve energy. Saving oil, using electricity efficiently and doing few other things by staying at Home, should be the goal.

- **Plant a sapling at your house**
- **Learn more about the native plants, shrubs and birds or attend webinars online.**
- **Utilise your Lockdown time by reading and learning new skills**
- **Look for more sustainable options in day-to-day life by using**
- **Stay at home and prevent wasting food and water.**
- **Practice reuse and recycling at home.**



The CCRI prepared in-house video film covering these goals and suggesting how to reuse waste in homes and shared it. COVID-19 reminds of an Indian Proverb for environment protection which could be written as

"Only When the Last Tree Has Died, And the Last River Been Poisoned and the Last Fish Been Caught, Will We Realize We Could be Attacked by Covid-19!"

Did your coffee mug break?

Don't know how to reuse it?

Here's how you can
REuse
REcycle the
Old and Broken Mug
And
REduce the waste



Grow your favourite plant







How to make beautiful plant hangings using Plastic Bottles

Steps

1. Cut the plastic bottles into two halves
2. Decorate the bottles using jute ropes
3. Stick some decorative material
4. Put soil in both the bottle halves
5. Pot a plant in each halves
6. Do holes around the corner so that we can tie it with the help of ribbon

Tada! Your plant hanging is ready

How to make beautiful plant hangings using Plastic Bottles

Material Required

1. Plastic Bottles
2. Jute Ropes
3. Glue
4. Decorating Material
5. Ribbon



Use the plastic containers
To store spices,
pickles,
Or grow plants to be kept
on your study table or balcony



To pot a plant

dahi container
And
Plastic Utensil
To grew plants



Reduce, Reuse and Recycle



For storing spices



Reusing paint box to pot a plant

Reusing ice cream box
to plant an indoor plant



Ice cream box
Styrofoam cup
Yogurt box

3. Article in NESa Newsletter e-Version

Dr. (Mrs) Malti Goel, President and CEO of Climate Change Research Institute, contributed an article for NESa, e-Version on the topic “COVID-19 and Climate Change”

NESA E-version_May 2020 (Private Circulation)

COVID-19 AND CLIMATE CHANGE

Malti Goel
President, Climate Change Research Institute
S-83 Panchshila Park, New Delhi 110017
E-mail: maltigoel2008@gmail.com

The whole world is taken aback by COVID-19. The new coronavirus case at Wuhan, China was first reported by World Health Organization (WHO) on 31st December 2019. In India first case was reported in Kerala on 30th January 2020. The WHO acknowledged it a health emergency and on 11th March [1], declared it a pandemic. The new coronavirus disease named as COVID-19 is a zoonotic disease. Zoonotic diseases already comprise roughly 70 percent of all human infections. In 2007 WHO had warned that emerging infectious diseases are becoming a growing threat in the face of increasing urbanization, antimicrobial resistance and climate change. In 2003 outbreak of SARS-CoV – Severe Acute Respiratory Syndrome coronavirus created havoc. Middle East Respiratory Syndrome (MERS) virus and Zika virus, a mosquito-borne virus caused other epidemics invaded Middle East and many Asian countries in 2015-16.

A lot has changed with the new coronavirus SARS-CoV2 leading to COVID-19. Lockdown across the world and social distancing are the ways to stay safe. All mobility came to a stop. With 212 countries under the grip of virus. More than three lakhs deaths have been reported in last four months. It is shown that about 80% of infected people get mild to moderate disease, while 14% have severe symptoms and 6% have life threatening episodes of respiratory failure or organ failure. Among the vulnerable population children made up of 2% of the cases, not got severely ill, but aged population above 80 were affected the highest 22%.

A number of studies are appearing about investigating climate change relationship with COVID-19. In this article we examine the atmospheric science and climate change linkages with this global COVID-19 epidemic. The three pronged approach of nexus between COVID-19 and climate could be in terms of (i) Environment, (ii) Weather & climate and (iii) Climate change.

(i) Linkage with Environment

Most attention grabbing finding about the environment linkage is that as a result of stay home with the pandemic COVID-19 outbreak; the streets, water bodies and the air all are much cleaner than what we can imagine in our dreams. This year water quality of the rivers *Ganges* and *Yamuna* has improved at an incredible level. Himalayan Ranges are visible from a distance of 200 km. More emphasis has been given to air quality in the world's most polluted and busiest cities and it is seen that pollution has dropped like never before. Many cities that had high pollution level are seeing remarkably less air pollution and are breathing clean air. Urban Tree leaves are green and no longer laden with dust and pollution.

NASA pictures released in early March clearly showed that according to the calculations made by the Center for Research on Energy and Clean Air the greenhouse gas emissions in the atmosphere had come down by 25% in the month of February when COVID-19 was at the peak in Wuhan, in comparison to the same period last year. At the same time is no coincidence that NCR of Delhi in India has suffered three earthquakes, though of low intensity, during this period.

Good news about lock down is about energy saving. With closure of offices and industry, the electricity 'peak demand' had fallen by

25% on average after March 22 in India, the day India began fight against COVID-19 with *Janta Curfew*. The NTPC has recently reported that the demand for power has reduced by as much as 45%. By stopping the use of personal cars and other transport means, oil consumption has fallen significantly. Oil is the energy resource which our country imports as much as 85% to meet mainly transport needs. We can save on our imports bill, by investing in renewable energy and avoiding unnecessary travels.

(ii) Weather and Climate and COVID-19

The second is, its connection with weather & climate that might be having a role in the growth of virus. Although the origin of corona virus is yet to be ascertained and the whether it is natural or man-made, is a topic of high debate, it was believed that with the coming of summer, COVID-19 might also stop, as is the case with many other viruses, including the common cold, bird flu or influenza occurring during the colder months. Cold weather and humidity are favored by the viruses and as the minimum temperature starts rising above 25-26°C, it starts becoming ineffective. But nothing is proven yet for the new corona virus.

(iii) COVID-19 and Climate Change

Are COVID-19 and climate change impacts are linked in any way? The climate change and COVID-19 may not have same origin, but both are global crises and have produced disaster over Homo sapiens. One line of thought is that climate change has led to many wildlife species migrating toward higher altitudes. This potentially is putting animals in contact with new diseases to which they haven't evolved resistance. The change in migratory patterns of the animals could lead to a lower respiratory system in animals. With the environmental devastation these microorganisms which animals host are now being transferred to humans. Bat has been associated with the cause of new coronavirus.

Another theory is that according to findings of Ohio State University scientists from a study of two ice cores extracted from Guliya Ice Cap, northwestern Tibetan Plateau, China and using gene-sharing network is that melting of glaciers giving rise new species of viruses [2]. They found that the microbes differed significantly across the two ice cores, presumably representing the very different climate conditions at the time of deposition. These viruses and bacteria trapped from thousands of years and are still present in the glaciers although in a dormant state. As global temperature raises the re-emergence of ancient viruses threatens present day species lacking immunity to these old world pathogens.

To conclude, with the ongoing debate on whether COVID 19 is natural or man-made, one thing is for sure that in addition to non-communicable diseases and vector borne diseases, viral outbreaks of similar nature would become more common in future with the progression of the climate crisis.

References

1. Cucinotta D, Vanelli M. WHO Declares COVID-19 a Pandemic, *Acta Biomed*. 2020 Mar 19;91(1):157-160. doi: 10.23750/abm.v91i1.9397.
2. Zhi-Ping Zhonga. et. al., Glacier ice archives fifteen-thousand-year-old viruses, Jan 2020, <https://www.biorxiv.org/content/10.1101/2020.01.03.694675v1.full.pdf>, Preprint accessed on 11.3.2020

4. COVID-19 and Climate Change



The Corona crisis is hundred meters race and climate crisis is a marathon. We have to run both at the same time.

- Victor Gataz, Stockholm Resilience Center

When the whole world was gripped by the microscopic organism, Climate Change Research Institute (CCRI), launched quarterly e-Newsletter for knowledge dissemination on COVID-19, to help the audience keep up with the latest research.

President of CCRI, Dr. (Mrs.) Malti Goel quoted, *"We are amidst corona virus threat. Pandemic COVID-19 crisis has taken the world by surprise. How climate change and COVID are connected, is uppermost dilemma before those concerned with environment? Are we heading to sixth mass extinction as the number of species are becoming extinct, is another vital concern?"*

Key Messages in five Sections

Biodiversity and COVID-19: "Since 1978, over 750,000 square kilometres of Amazon rainforest have been destroyed with an increasing proportion of deforestation driven by industrial activities and large-scale agriculture."

How Endemics and Pandemics are related to Climate and Climate Change?: "According to the US Agency for International Development, 75% of new emerging diseases at the start of the 21st century have been transmitted from animals, often because deforestation has brought them closer to the human environment."

COVID-19, CO2 Emissions and Renewables: Global Energy Review, IEA quoted,

"Beyond the immediate impact on health, the current crisis has major implications for global economies, energy use and CO₂ emissions"

Climate Action - Sustainable Development Goal 13: In 2020, due to corona crisis impacts, the nationally determined contributions of countries could become achievable with larger goals, after 2019 being second warmest year on the record.

Post COVID-19 Action Plan: Message from Secretary General, Antonio Guterres on World Environment Day stated *"It is time to act decisively. My message to governments is clear: tax pollution, end fossil fuel subsidies; and stop building new coal plants. We need a green economy not a grey economy"*

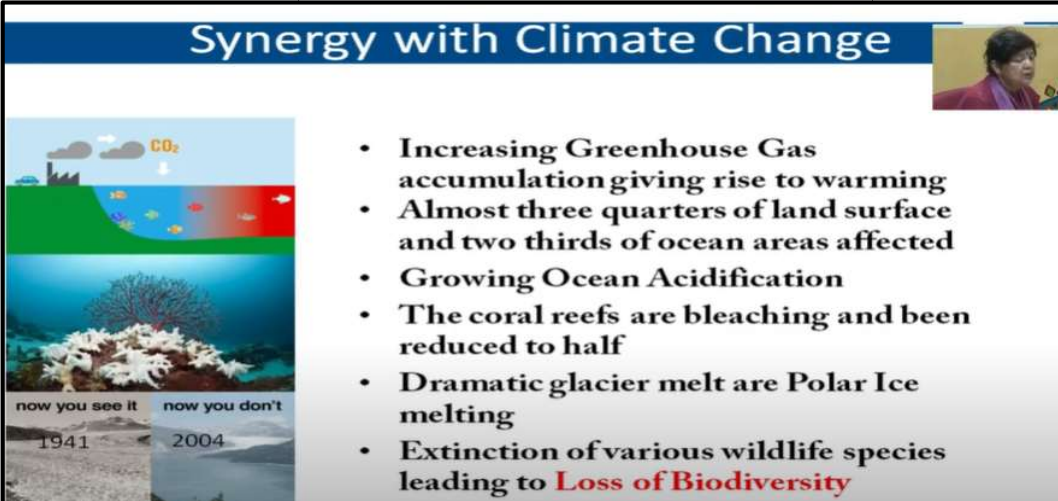


The e-Newsletter can be accessed online at: <https://bit.ly/3vKRkSA>

5. Post COVID-19: Future of Biodiversity - World Environment Day 2020

The celebration of World Environment Day falling on 5th June has been a Flagship event of the **Climate Change Research Institute** every year. The CCRI has made noteworthy contribution towards the eco-system changes and S&T solutions by interacting with the students, with the teachers, with the professionals and with the scientists in novel ways.

To celebrate **World Environment Day 2020** Dr. (Mrs) Malti Goel delivered the theme talk on "Post COVID-19 Future on Biodiversity" in collaboration with **India International Center**. Shri V S Verma, Distinguished professor & Member Central Electricity Regulatory Commission, Delhi welcomed all, sharing the background on Environment Day.



Synergy with Climate Change

- Increasing Greenhouse Gas accumulation giving rise to warming
- Almost three quarters of land surface and two thirds of ocean areas affected
- Growing Ocean Acidification
- The coral reefs are bleaching and been reduced to half
- Dramatic glacier melt are Polar Ice melting
- Extinction of various wildlife species leading to **Loss of Biodiversity**

Key Messages

COVID-19: COVID-19 was declared as Pandemic on 11th March 2020. "Is Nature sending us any message for taking care of the planet?" is the key question.

Biological Diversity: "We have already recorded that there are 8-9 million species, possibly 100 million and 1.7 million varieties of animals, plants, and fungi respectively" – and these are endangered.

Causes of HIPPO Decline in Biodiversity:

H- Habitat loss is a greatest threat to biodiversity.

I- Invasive species is non-native organism negatively impacting native species.

P- Pollution and influx of carbon dioxide affecting the health of individual species

P- Population increases are threats to biodiversity causing habitat loss, pollution, and land-use changes.

O- Over-harvesting i.e., extraction of resources including trees, plants, and animals

Future of Biodiversity: relies on threefold actions.

(i) **Grassroots level** active participation of local community in preserving biodiversity and increasing awareness on human role in introducing conservation education;

(ii) **Scientific studies** by remote sensing and plant diversity are helping in species distribution modeling; and

(iii) **Synergy** between biodiversity and climate change and taxonomy studies and documentation.

6. COVID-19 and 3Es for Atmnirbhar Bharat

The Climate Change Research Institute organized a webinar workshop on “COVID-19 and 3Es for Atmnirbhar Bharat” on 4th September 2020 to mark the Teachers Day. The event was in collaboration with the Universal Public School. Young children of the school opened the event by singing beautiful *shlokas*.

Climate Change Research Institute
invite you all to join a Webinar on
COVID-19 and 3Es for *Atmnirbhar Bharat*

Register here: <https://forms.gle/PZPLZkZVb5Siaw5>

Meet the Panelists

Key Note Speakers

Prof. D. P. Agrawal
Chairman GC, CCRI
Former Chairman, UPSC

Prof. G. D. Sharma,
Former Secretary UGC
Ex-Director CEC, India

Other Speakers

Dr. (Mrs) Malti Goel
Chief Executive, CCRI
Former Emeritus Scientist

Dr. Bhawana Awasthi,
Chief Medical and Clinical
Oncology, Indian Spinal
Injuries Centre

Mrs Maya Gupta,
Director Principal,
Universal Public School,
Preet Vihar

Dr. Neha Tripathi,
Assistant Professor, SPA

10:30 – 12:30 Hrs on September 4th. 2020

Key Recommendations of the Workshop are as follows.

- 1.1. COVID-19 has put a big responsibility in front of educational institutes, the educationists, thinkers and intellectuals to impart online education. The students, parents and teachers should work to make it a success.
- 1.2. For students the key to **Atmanirbhar Bharat** is finding your area of interest and work for inter-dependence and creating a win-win situation, thinking and applying your ideas and thoughts, solving your own problems.
- 1.3. COVID-19 has highlighted beyond our comprehension as how fragile and interconnected, precious life is; and about the relationship between environment and people. The role of science is important in environment protect.
- 1.4. The COVID-19 has thrown greatest challenge to 3Es: Economy, Education and Environment. Major contributors to air pollution are economic and energy sectors namely; agriculture, transportation, industry, construction and others.
- 1.5. The important take away to fight climate change are use of solar energy and waste minimization. The waste should be recycled, reused and reduced. Planting of saplings, minimize automobiles use to save fuel, save energy by using more efficient household appliances, reduce consumption of material resources and saving water are other sustaining activities.
- 1.6. Clinical symptoms of COVID-19 on human health are many. To tackle the crisis healthcare infrastructure has been enhanced like; addition of new beds, availability of PPE kits and masks, requisitioning portions of private hospitals and use of telemedicine has emerged having economic implications on smaller health care systems.
- 1.7 The message - Youth should develop capacity to fight COVID-19 and plan to live simple and frugal life, taking a vow not to waste.

“When there are difficulties, we develop capacity to fight it all”.

7. Webinar on Restoring Earth Resources

The Climate Change Research Institute (CCRI) held a Science Awareness Campaign on the World Earth Day 2021 on April 27th. The webinar was attended by youth in large number and the registration exceeded one hundred participants. It was 51st Earth Day and CCRI held it in collaboration with SEED. The theme of the event **Restoring Earths Resources: Climate Change and Water** had a focus on the most precious resource of the earth -WATER, without which survival is next to impossible. This was in line with the World Earth day theme for the year 2021 **“Restore Our Earth”** which brings attention to natural processes, emerging green technologies, and innovative thinking that can restore the world’s vulnerable ecosystems.

Dr Malti Goel, Chief Executive and President, CCRI in her introductory remarks cited ancient practices and current policies in water management. Prof. G. D. Sharma Former Secretary, UGC presided over. In the opening address he shared his experience about *Bund-Bund Bachayen* and described practices adopted in the desert regions with the precise water management techniques. Prof N. K. Goel, Department of Hydrology, IIT Roorkee delivered the guest address on ‘Impact of Climate Change on Water Resources’. He said climate change is felt primarily through changes in water. He explained various impacts of climate change on water resources, mitigation measures and how children can contribute towards environment and save water. Dr. Rina Surana Associate Prof. MNIT, Jaipur in the special address touched on the Role of Water Bodies in Physical Planning.

8. Science Campaign and Capacity Building Workshop - World Environment Day 2021

The **World Environment Day 2021** theme this year was **“Ecosystem Restoration”**. The CCRI Science Campaign was held on ‘Ecosystem Restoration: Ocean and COVID-19’ in collaboration with the India International Centre on 4th June 2021 having eminent speakers.






India International Centre and Climate Change Research Institute	Webinar on Ecosystem Restoration: Ocean and COVID-19
	Lead presentation: Dr. Malti Goel Chief Executive, Climate Change Research Institute and Former Scientist 'G' & Emeritus Scientist, Ministry of Science & Technology
	Keynote Speaker: Dr. N. Ramaiah Former Chief Scientist, Professor at AcSIR and Deputy Director, CSIR-NIO, Goa
	Co-Chair: Dr M. Sudhakar Former Director, Centre for Marine Living Resources & Ecology, Kochi and Former Adviser, Ministry of Earth Sciences
	Chair: Dr. Hari Narain Srivastava, Former Additional Director General, India Meteorological Department, New Delhi
	Friday, 4 June 2021 from 4:00 pm to 5:00 pm Registration link: http://webcast.streaminglive.in/iicwebinar3/signup.php 

For Ecosystem Restoration and health of our seas, national & international collaborations are vital. Sustained outcomes demand pollution control measures, more scientific observations in seas and reducing single use plastic.

9. Knowledge Sharing through Publications on Climate Change

e-Magazine

The Climate Change Research Institute has started the e-Magazine for a wider outreach among the society. The following Issues of the e-Magazine have been published by the Institute during the period of Report

-  e-Magazine Issue-1, January–February 2021 – **CLIMATE CHANGE**
-  e-Magazine Issue-2, March-April 2021 - **RESTORING EARTH RESOURCES**
-  e-Magazine Vol.-I, Issue-3, May-June 2021 – **ECOSYSTEM RESTORATION**
-  e-Magazine Vol.-I, Issue-4, July-August 2021 – **AZADI KA AMRIT MAHOTSAV**
-  e-Magazine Vol.-I, Issues-5&6 – **CLIMATE ACTION**

E-Newsletter

- Climate SAR, Vol VIII, no.1 - Climate Change and Marine Ecology
- COVID-19 and Climate Change, April-June 2020
- Biomedical Waste, COVID-19 and SDG 3, July –September 2020

Book Publication

- ❖ Climate Change and Green Chemistry of CO₂ Sequestration, Eds **Malti Goel**, T. Satyanarayana, M. Sudhakar, D.P. Agrawal, 2021, **Springer Nature**, Green Energy and Technology Series, ISBN 978-981-16-0029-6
- ❖ Science Diplomacy for South Asian Countries: Insights and Breakthroughs, **Malti Goel**, 2021, **Springer Nature**, ISBN 978-981-16-3024-8

Scientific articles

Published in the International and national journals of repute

- ❖ **Clean Energy Transitions and Role of Science Diplomacy** Malti Goel, in **SCIENCE DIPLOMACY REVIEW** | Vol. 2, No. 1 | March 2020, pp 27-34.
- ❖ **Building Bridges between Science and Diplomacy to Address Global Challenges**, Malti Goel, in South Asia in **SCIENCE DIPLOMACY**, October-December 2021, Vol 5. P 9-12, ISSN : 2456-5318.
- ❖ **COVID-19 and Climate Change**, Malti Goel, **NESA e-version** May 2020. P 11.
- ❖ **Climate Change, COVID-19 and Cities: Social Transformation**, Malti Goel and N.G. Tripathi, in **SOCIAL ACTION JOURNAL**, July-September 2020. Vol 79, no.3 pp206-215.

10. Keynote Lectures Delivered by Our CEO (Dr. Malti Goel) at International and National Conferences

INTERNATIONAL

1. **Delivered** invited lead talk in the COP26@ Lancaster University Festival on **Carbon Capture, Utilization and Implications** in the Virtual seminar on “Mitigating Climate Change Through Carbon Dioxide Capture and Utilization Technologies” organized by Sunway University, Malaysia on 20-22 October 2021
2. **Invited lecture** on Carbon Capture, Utilization in IRON & STEEL Industry: Outlook and Implications in the International Conference & 75th ATM of The Indian Institute of Metals on 13-15 November 2021, Kolkata.
2. **Keynote Lecture** in the Inauguration of International Conference on Recent Advances in Mechanical Infrastructure (ICRAM – 2021) organized by IITRAM, Ahmedabad on August 6-8, 2021 on 6th August 2021.

NATIONAL

- **Participated** in national TV channel Panel Discussion on ‘Samadhan Carbon ka’ in Hindi on DD Science on 16th January 2020.
- **Delivered** a presentation on **KUSUM Scheme: Opportunities & Challenges** in IEF Renewable Energy Trajectories Summit held on 17th January 2020
- **Lecture** on **Physics of Global Warming and Strategies for Mitigating Climate Change Crisis** to Youth under INSPIRE Programme, on 23rd Jan 2020 at MIT Merrut.
- **Participated** as Panelist in the **World Petro coal** conference in the Session on Future Energy Systems: Fuel Markets Global Opportunities on 17th February 2020.
- **Invited as Chief Guest** and delivered the address on ‘**Women in Science**’ on National Science Day celebration on 28th February at Hindustan Science & Technology College, Mathura.
- **Member** Technical Working Group (TWG) Meetings of Carbon Registry of the **Network for Certification and Conservation of Forests** (The NCCF shares CCRI logo on their website).
- **Delivered** the Environment Day lecture on **"Post COVID-19: Future on Biodiversity"** at India International Centre (IIC), in World Environment Day Campaign 2020 on a virtual platform.
- **Delivered** Live lecture on **Clean Coal Technology (Part I and Part II)** for the ICED ‘Audit of Environmental Management in PSEs (Steel and Power Plants)’, Jaipur held on 25th June 2020 on a virtual platform.
- Lecture in virtual mode on ‘**Challenges in Nature’s Healing: Climate Change and COVID-19**’ in the webinar “COVID-19 and 3Es for Atmnirbhar Bharat”
- **Invited Lecture** on **"32 years and Healing"** – Our Planet, Our Environment in the World Ozone Day, 2020 seminar on “Ozone Layer & Climate Change: Human Efforts” organized by STE on 19th September 2020.
- **Lecture** on **CCS Status and Challenges**’ in IEF summit on “Challenges Facing Integrating Renewable Energy In Electricity Grid And Reducing Carbon Footprints” on 22nd January 2021.

- **Lecture on “Plastic Pollution and Control” in the in the NOSTC programme ‘100 Schools, 100 lectures’ for Modern Public School, Shalimar Bagh on 19th March 2021.**
- **Theme lecture on “Restoring Earth Resources-Climate Change and Water” organized by Climate Change Research Institute in collaboration with SEED on 27nd April, 2021.**
- **Lead Speaker on Ecosystem Restoration: Ocean and Pandemic in the virtual Webinar on World Environment Day 2021 organized by India International Center on 4th June 2021.**
- **Chief Guest lecture on UN Sustainable Development Goal 7- Affordable and Clean Energy in Self-Actualized Leadership Network Global Summit 2021 (SALN Global Summit 2021) conducted by Defined Values Consultants Pvt Ltd. On 21st August 2021.**
- **Lecture on Stay Smart-Love Green-Go Clean in the Annual Alumni Day-cum-Festival in ‘Equitable Growth and Sustainable Development’ held on 26-27 December 2021.**

11. AWARDS

Climate Change Research Institute (CCRI) received GNE Award of Excellence Certificate as one of the Best NGOs in India for setting up and promoting impactful social practices on June 28, 2021.

The Institute provided support to the Sustainable Development Goals Algorithm project of Springer Publications for keywords for SDG 13: Climate Action aimed to create strong and representative search strings to generate a Training Module in Machine Learning model.

V. CONCLUDING REMARKS

The Climate Change Research Institute has been engaged in providing resources and would continue to support UN Global Compact within its sphere of influence. In this communication we describe the actions that our organization has taken to support the UN Global Compact and its principles as suggested for an organization like ours. Our focus has been Environment, Climate Change and Sustainable Development Goals.

These efforts of our institute in promoting environment educations and creating awareness on emerging environmental issues are, but a few examples of the many ways in which the Climate Change Research Institute has been working to create a transformative impact on National/International scene.

We pledge to continue to take part in the activities of United Nations Global Compact at International/national/local networks level, whenever feasible, to involve in specialized initiatives, to engage in partnership projects and to review the projects and progress when approached.