



e – Magazine



Climate Change Forum for Youth in India Vol-I, Issue -1, Jan- Feb., 2021

e-magazine



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

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About Us

Climate Change Research Institute (CCRI) is a not-for-profit organization registered under Registration Society Act 1860 (www.ccri.in)

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 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 pollution among others.

The CCRI has been working at the grass root level towards strengthening the science-society-climate change policy interface. We actively produce the Bulletins, Newsletters, Event reports on emerging topics focussing on outreach and youth engagement related to climate change.

We have planned different activities for our members, which will have them give their contributions towards the NDCs of India and India's commitment towards **Paris Agreement**.

Why Climate Change Forum for Youth in India?

Climate Change Forum for Youth in India (CCFYI) is a platform for open discussions on the climate change related issues for the youth of our nation. Recognizing that Climate Change education is under-represented in the formal education system, we have attempted to introduce an interwoven integration of environmental knowledge with the learning on how an individual can reduce emissions by connecting the dots between major factors of lifestyle and major contributors of the carbon emissions.

We compliment young students who are members of CCFYI for their expression to climate change and contributions by articles and posters to our e-magazine.

The CCFYI aims to build a responsible and environmental citizenship amongst the targeted audience and give a sense of responsibility and self-awareness about scientific solutions to mitigate the ongoing climatic impacts.

Genesis of e-Magazine

Dear Readers,

At Climate Change Research Institute (CCRI), we have always believed in finding scientific solutions to the climate change focusing on outreach and youth engagement. We have been planning and executing our science communication activities in such a way that we cater each and every identified stakeholder of ours. We have worked on grass root level and to strengthen the science-society-policy interface.

In March 2020 when the whole world was taken by surprise with SARS-CoV-2 delta virus, we had no idea to what extent the virus will affect us. Mobility came to a stop; we could not move out of the house or go to office. Every activity had suffered from it. With great pressure on being safe, social distancing and work-from-home became the norms. Our scheduled programmes got cancelled and other plans came to standstill. Lockdown impacted educational institutions, examinations weren't conducted, no new admissions, and students and teachers came under pressure.

But the COVID-19 Pandemic crisis has not deterred our enthusiasm. The CCRI, responding to the call from our PM Shri Narendra Modi, decided to conduct a webinar-cum-workshop on “**COVID-19 and 3Es for Atmnirbhar Bharat**” to interact with students and the teachers and understand the burden on education, environment and economy & health during the lockdown. The workshop to celebrate Teachers' Day was conducted to bring COVID awareness among youth and mentoring them to take climate change control actions. The proceedings of the event is available at <https://bit.ly/2ZqcJVE>

On this day, our President launched “**Climate Change Forum of Youth in India**” (CCFYI) to connect with the youth and offered free membership to those between the age of 15-35 years of age. Taking this journey forward, we have started the **e-Magazine** of the Forum. It acknowledges the submissions by our members and responds to their queries. A special section on **e-News Alerts on Climate Change** is shared with the youngsters as a knowledge storehouse. Focusing on outreach and youth engagement, the first issue is before you.

We wish you happy reading!

CCRI Team

From President's Desk

“Elevating the voices of young people to protect the future of our planet”

-UNICEF

Youth have a very strong role to play in climate change mitigation. We thought of coming up with the “Climate Change Forum for Youth in India(CCFYI)” under the auspices of climate Change Research Institute by engaging their enthusiasm and energy of in the current environmental and climate change issues. We look forward to working with you, bring about changes in your lifestyle so as to make a significant change to reduce GHG emissions and make you a responsible future citizen.

Through this e-Magazine, we want to encourage more youth to participate and contribute articles so that maximum participation and creativity is there. This is your magazine and you have to make it interesting for all.

You will be happy to note that we celebrated **Youth Action Day 2020** on 5th December. A survey among the youth was conducted and is included in this issue. In this connection it reminds me that a global survey on similar topic, recently conducted by UNDP was participated by almost 50 countries. It was reported that climate change is becoming a *global emergency*. Interesting part is that in the global survey about 0.5 million participants were below 18 years of age.

We invite your suggestions as well as articles, poems, posters for the next issue of e-Magazine.

Dr. Malti Goel

President, Climate Change Research Institute



Honorable President of India, late A.P. J. Abdul Kalam releasing the book authored by Dr (Mrs) Malti Goel on “**ENERGY SOURCES AND GLOBAL WARMING**” in 2006.

About Dr.(Mrs.) Malti Goel,

Dr Malti Goel is Former Adviser, DST and CSIR Emeritus Scientist in the Ministry of Science & Technology, Government of India and is an energy and climate change expert. She is currently President, Climate Change Research Institute. Her academic and professional achievements include Ph.D in Physics from IIT Delhi and multidisciplinary trainings in science & technology, energy utilization, coping with global warming a management of technology change from Italy, Japan, Israel and UK among others. She has served as honorary editor-in-chief for the only air pollution journal in the country by Indian Association of Air Pollution Control. She is Peer Reviewer for international Elsevier publications on Energy and Energy Policy. ***She received in 2016 the PEARL Foundation for Educational Excellence Life Time Achievement Award in recognition of her outstanding contributions and achievements in the field of Climate Change Research in India.***

Message from Honourable Chairman

Dear Readers,

First of all, I would like to warmly welcome you all on board with us towards the fight against climate change.

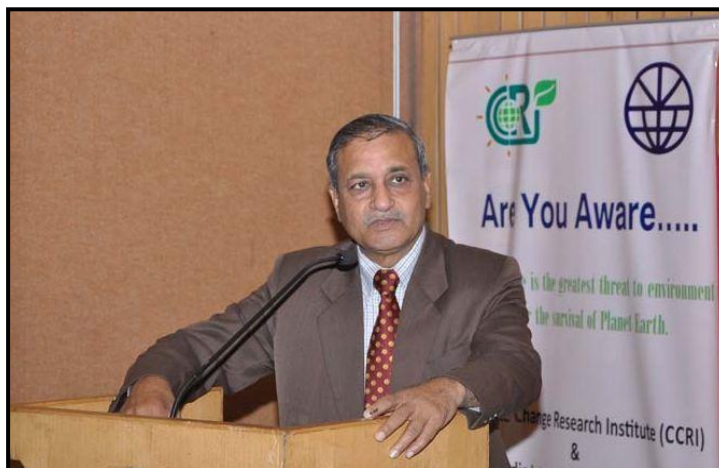
Climate Change Research Institute is a growing organisation and will achieve the milestone when young minds like you will connect with us.

We have planned a lot and have properly executed a lot. We have set examples for the kind of work we do and with the new extended family, it's a huge responsibility that we have on us to take forward this forum to a height from where we can set an example.

Let's promise ourselves that the investment we are making towards this forum, we get the highest return in terms of knowledge, capacity building and by becoming an aware and environmentally responsible citizen.

I would urge that you should start a club in your schools, become leaders introducing others to become members who genuinely care for the environment. I extend my best wishes on the occasion of launch of the first issue of e-magazine of the *Climate Change Forum for Youth in India*.

Dr. D.P. Aggarwal,
Chairman, Governing Council, CCRI



Prof D. P. Agrawal, Chairman of the Governing Council, CCRI addressing young participants on World Earth Day.

About Prof. D.P. Aggarwal

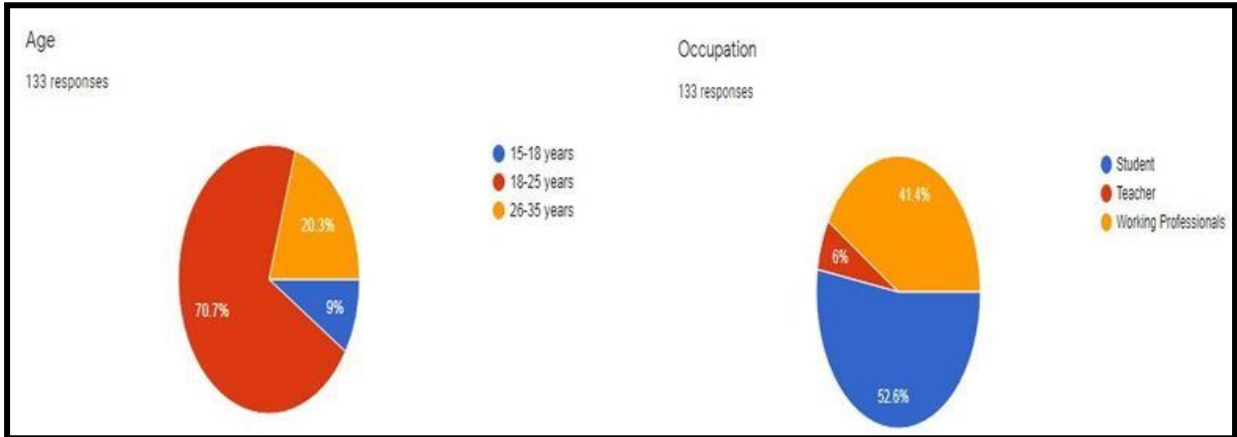
Prof D. P. Agrawal is Former Chairman of Union Public Service Commission (UPSC) and founder Director of Atal Behari Vajpayee Indian Institute of Information Technology and Management IIITM), Gwalior. Under his leadership IIITM, has entered into MOUs with Institutions/Universities in the USA and Spain for joint collaboration in the areas of research, exchange programmes for faculty and students, and consultancy to companies in India and abroad.

Professor Agrawal has been an eminent teacher, educational administrator and institution builder. He was Professor and Dean at IIT- Delhi from where, in 1994, he took over as Joint Educational Adviser (T) in the Ministry of HRD, Government of India. He has planned and developed a number of initiatives at national level in technical education, particularly in the areas of information technology and computer education. Prof. Agrawal was christened as 'Engineer of the Year 2006' by the Institution of Engineers and is distinguished Alumni of IIT Delhi.

YOUTH CLIMATE ACTION DAY - 5TH DECEMBER

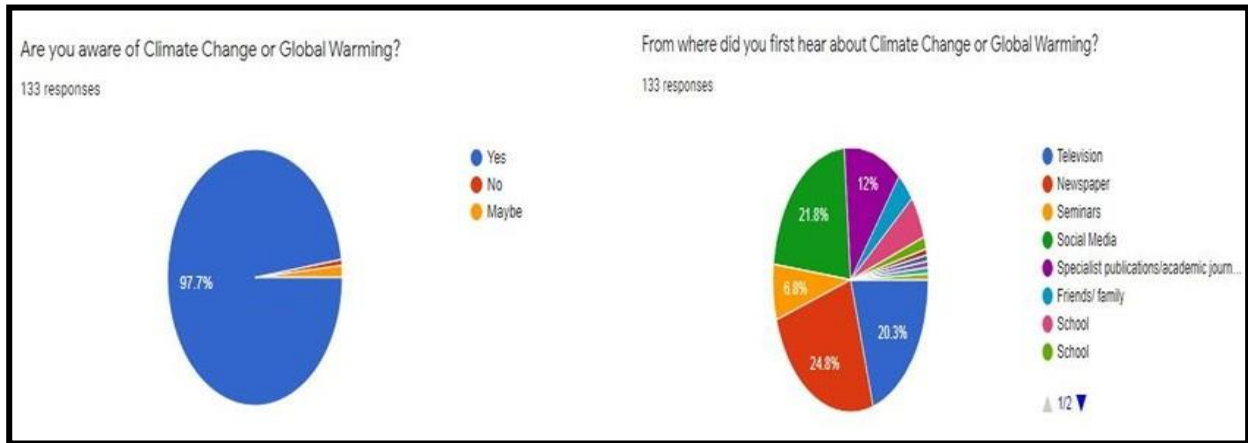
Climate Change is for real! And we all are in this together because the consequences of climate change would be borne by both the elite and poor, although poor would be the most vulnerable to the climate change. The **Climate Change Forum for Youth in India (CCYFI)**¹ has carried out a survey among the youth in Delhi, for spreading awareness and taking climate change control actions.

SURVEY OUTCOME



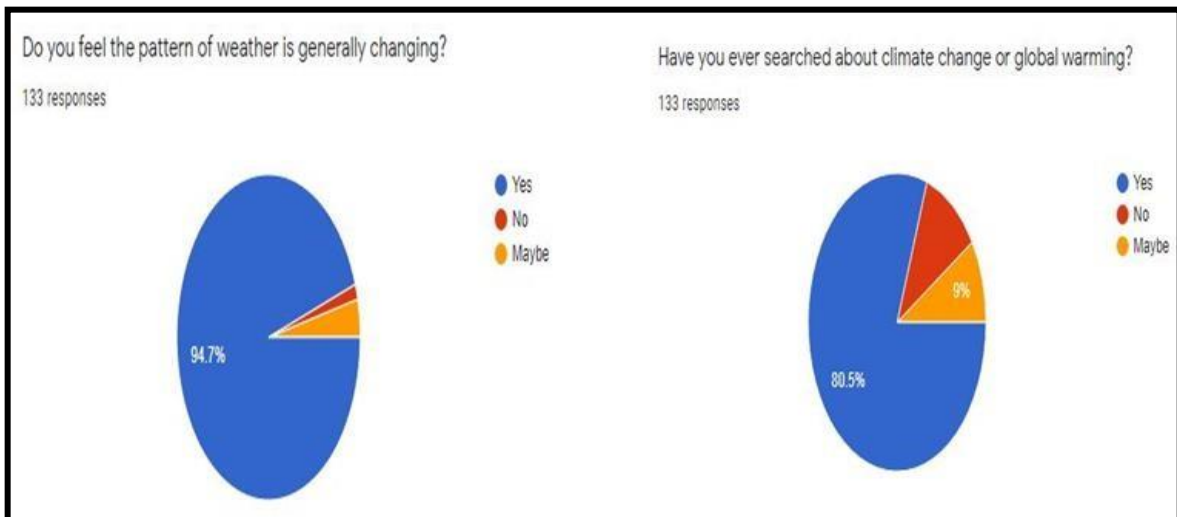
70.7% of Respondents age is between 18-25 years, and 20.3 % of Respondents age is 26-35 years, and the 9% of Respondents age is between 15-18 years, 52.6% of Respondents Occupation is Student, 41.4% of Respondents Occupation is Working Professionals, 6% Respondents Occupation is Teacher.

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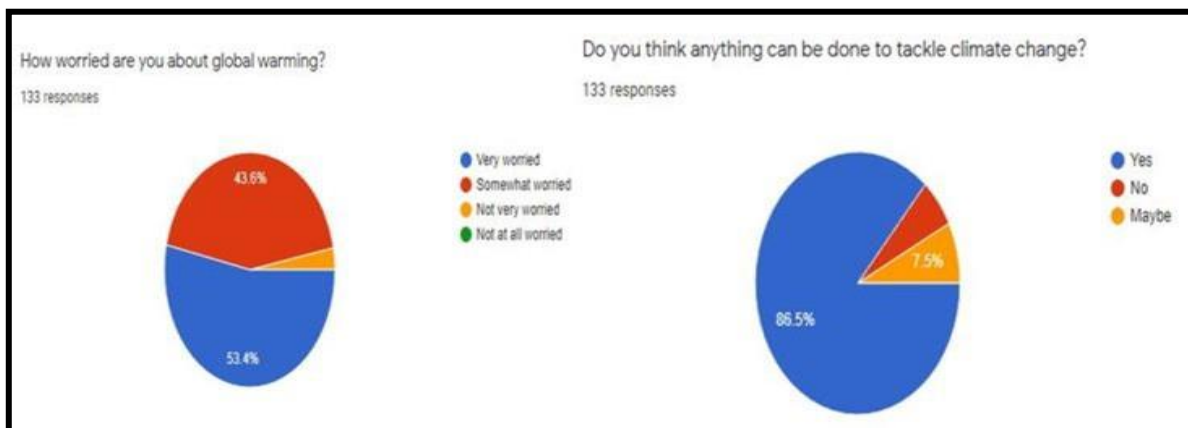


97.7% of the respondents were aware of climate change and global warming and 24.8% had heard about it from newspaper followed by social media (20.3%) and television (20.3%)

¹ Under the ambit of **Climate Change Research Institute** the outcome of survey has been prepared. The youth age group was set between the age group 15-35 years as per the National Youth Policy 2014. Around 133 youth participated in the survey.



94.7% of respondent believed that the pattern of weather is changing and think that only information dispensed from a scientist, environmental organization can be trusted the most. 80.5% participants have searched about climate change and 58.6% personally believe global warming is an extremely important issue.



53.4% participants are very worried about the climate change while 43.6% were somewhat worried. When the participants were questioned if anything can be done to tackle climate change, 86.5% were affirmative in their response.

The Survey clearly showed that youth are concerned and willing to work on individual level for the climate change control action. The changing weather, rising temperature, unseasonal rainfall, floods, droughts etc., are understood as the impacts of the climate change. We look forward to more debate and webinars on this topic.

Realizing the gravity of situation New Zealand Parliament has declared Climate Emergency and announced that all public organizations must become carbon neutral by 2025 (-Hindustan Times, 3.12.20). India is signatory of Paris Agreement of Climate Change, 2015 and taking several actions.

Dr. (Mrs.) Malti Goel, President, Climate Change Research Institute, contactus@ccri.in

Member's Contribution

Article on Climate Change by Akshita Ajmani



About Akshita Ajmani

She is currently pursuing her BEd and her area of interest is Social Science. She strongly believes that young people need to be much more actively involved in shaping the global environment.

Climate change is a change in the properties of the climate system that persists for several decades or longer—usually at least 30 years. These statistical properties include averages, variability and extremes. Climate change may be due to natural processes, such as changes in the Sun's radiation, volcanoes or internal changeability in the climate system, or due to human influences such as changes in the composition of the atmosphere or land use.

The main causes of climate change includes Humanity's increased use of fossil fuels – such as coal, oil and gas to generate electricity, run cars and other forms of transport, and power manufacturing and industry. The main contributor to the climate change is deforestation – because living trees absorb and store carbon dioxide. Countries which are using increasingly intensive agriculture – which emits greenhouse gases like methane and nitrous oxide and industrialized countries – including USA, England, France, Germany, China etc. – have built their economies on burning fossil fuels to provide electricity, transport and to develop industries.

Developing countries are now beginning to do the same. The global temperature increase brings disastrous consequences, endangering the survival of the Earth's flora and fauna, including human beings. The worst climate change impacts include the melting of the ice mass at the poles, glaciers which in turn causes rising sea level, producing flooding and threatening coastal environments through which small island states risk disappearing entirely.

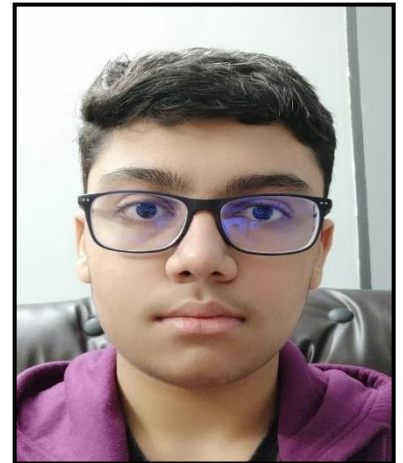
Climate change also increases the appearance of more violent weather phenomena, drought, fires, the death of animal and plant species, flooding from rivers and lakes, the creation of climate refugees and destruction of the food chain and economic resources, especially in developing countries.

People, communities, cities, businesses, schools, faith groups and other organizations are taking action on climate change. Citizens can urge government to take bold, ambitious climate action now, use more and more renewable resources, shift to the pollution free sources of energy, In Canada, transportation accounts for 24 per cent of climate-polluting emissions, a close second to the oil and gas industry. The many ways to reduce your transportation emissions will also make you healthier, happier and you will save some money too.

Adopting principles of Reduce, Recycle and Reuse to keep environment clean, green and sustainable. By joining different environmental organizations or groups; participating in various governmental, non-governmental, school or community programs and projects against climate change, joining clean-up drives at school or in community; participating in tree planting and go-green activities; garbage picking and recycling. In these ways we can contribute our part towards maintaining the clean and green environment for all.

Member's Contribution

Article on Biodiversity and Climate Change by Shourya Gandhi



About Shourya Gandhi

Shourya is a 9th class student and his area of interest is biodiversity and climate change. He believes that the major cause of climate change is depletion of ozone and global warming.

Biodiversity is a term used to describe the enormous variety of life on Earth. It refers to every living thing, including plants, bacteria and animals living in one ecosystem. Healthy ecosystems and rich biodiversity are fundamental to life on our planet.

Climate change is affecting the habitats of several species, which must either adapt or migrate to areas with more favourable conditions. Even small changes in average temperatures can have a significant effect upon ecosystems.

As climate change by itself can cause the disappearance of many species. The fate of many species in a rapidly warming world will likely depend on their ability to migrate away from increasingly less favourable climatic conditions to new areas that meet their physical, biological, and climatic needs.

Climate change also leads to many natural disasters like drought, melting ice caps, etc. These could be a threat to flora and fauna of that habitat.

We can preserve the biodiversity from the effects of climate change. This is possible by the conservation, restoration, and improved management of land, in order to increase carbon storage or avoid greenhouse-gas emissions in landscapes worldwide. Afforestation is also a natural solution.

We need to do small acts daily to reduce climate change, as little drops of water make the mighty ocean.



(Image Courtesy: Google)

Member's Contribution

Article on Sustainable Development by Srishti Aggarwal

About Srishti

Srishti is a class 10th student and her area of interest is Sustainable Development. She wants to contribute and gain knowledge about sustainable development through this forum.



Sustainable development is to make a world a better place for everyone now without destroying the possibilities for the next generation. We should keep 3 things in mind at once – **SOCIAL PROGRESS, ECONOMIC DEVELOPMENT and CLIMATIC CHANGES.**

We human resources are very important for the world. We have minds that can create the strangest and the most creative things. Almost everything we develop, buy and trade starts with nature. The smarter we use our natural resources and the better systems we create for a fair distribution the more the sustainable we are.

Taking good care of our planet should be our first priority. We have many ecosystems that must be in balance in order for us to live here. The climate system is one of them. This system ensures that the temperature is correct and that the atmosphere emits exactly the right amount of solar energy.

When we emit harmful gases such as CO₂, we clog the atmosphere this changes the temperature in earth which again affects our development. How we produce and use energy is incredibly important. We just have to think new ways through which these 3 must work together



(Image Courtesy: Google)

Member's Contribution

Fun with Crossword

By Tisya Dewan

About Tisya

Tisya is a student and an active participant of school's Ecoclub. Her area of interest is sustainability and she is quite passionate about the environment.



Environment Word Search

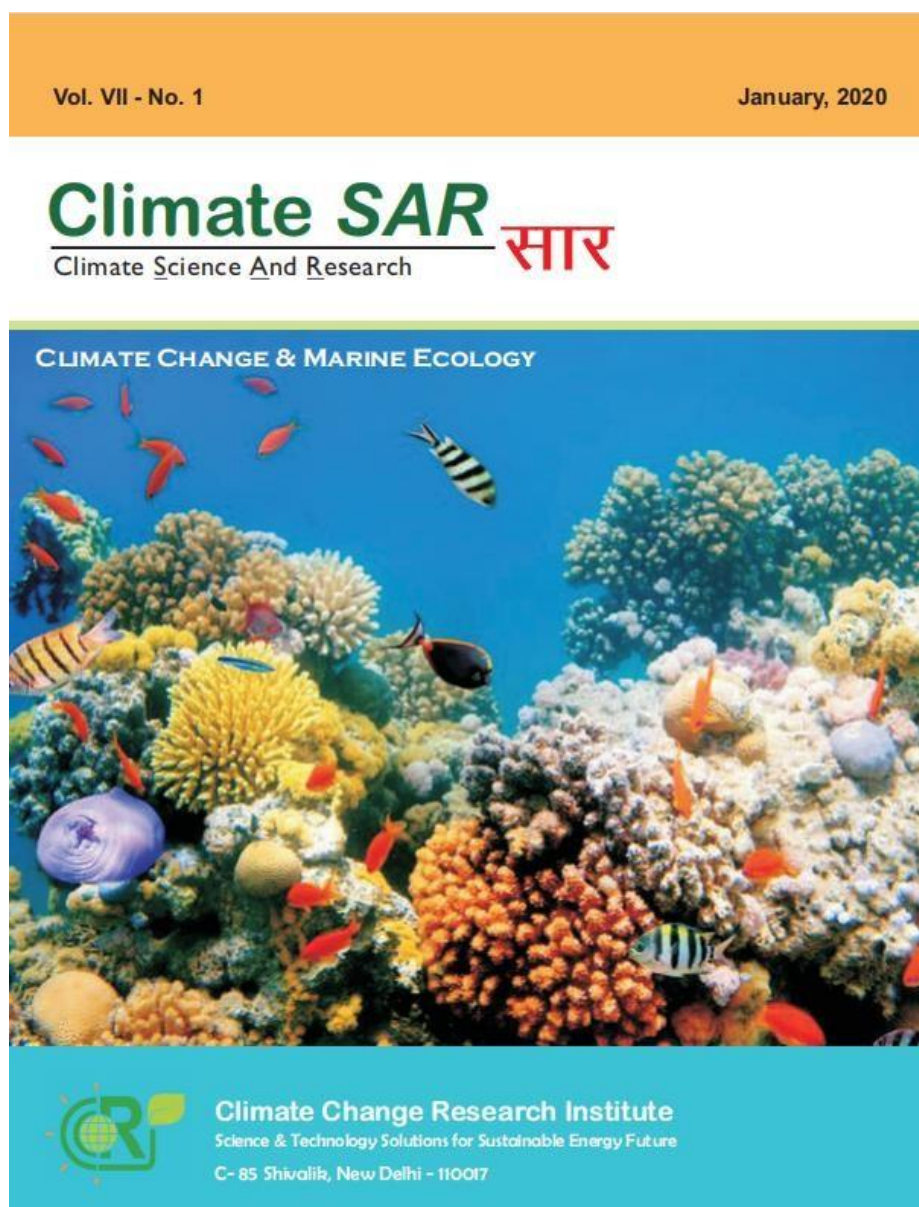
I	E	L	T	A	M	U	B	C	G	P	R	R	S
D	S	U	R	C	L	B	I	O	G	O	E	G	A
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G	O	I	U	D	M	O	D	S	O	L	A	A	E
I	H	C	S	R	E	D	E	E	B	U	L	G	H
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H	E	O	T	V	Y	Y	E	T	N	P	I	I	S
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BIODIVERSITY
 RECYCLE
 GLOBAL WARMING
 ACID RAIN
 OZONE LAYER
 REUSE
 EARTH
 TREE
 POLLUTION
 CONSERVATION
 ECOSYSTEM
 BIODEGRADABLE
 REDUCE
 CLIMATE
 GREENHOUSE

From the Archive

Climate SAR

From the beginnings CCRI brings out a Bulletin on Climate SAR (Science And Research) on a climate change related theme. In 2020 a very small and crisp **Climate SAR(Vol.VII-No.1)** on a very sensitive topic was brought out i.e., **Climate Change and Marine Ecology**. In this Climate SAR, Dr.(Mrs.) Malti Goel, President and Chief Executive, Climate Change Research Institute said, *“the impact of pollution caused by increasing CO₂ and solid waste is giving rise to new threats to Marine Ecology. Due to ozone layer depletion, increasing exposure to solar UV radiation threatens growth and survival of tiny creatures in the oceans”*



[Click here to read the Climate SAR](#)

Activity Based Learning for Science Teachers

The Climate Change Research Institute (CCRI) in association with India International Center held a **Teachers' Training Workshop for Activity Based Learning in Chemistry** on June 6-7, 2019. The workshop was conducted in collaboration with the **Royal Society of Chemistry** and supported by **ONGC** to celebrate **World Environment Day**. In the Inaugural Session Honorable Chief Guest **Dr. V.K. Garg, Ex-CMD, Power Finance Corporation Ltd** said that future development of any nation is in the hands of teachers. He described importance of chemistry in our life and gave innovative ideas on how to mitigate plastic pollution. **Dr. (Mrs.) Malti Goel, President CCRI** said that chemistry has a vital role in our environment. Chemicals produced from natural resources enhance our life in many ways, but their overuse is accompanied by environmental pollution as well as adverse health impacts. Knowledge about chemistry then helps to solve the environmental problems. She gave an example of 'ozone layer depletion' caused by certain chemicals as refrigerants. Guest of Honor on this day **Prof. G.D. Sharma, Ex-Secretary UGC** enlightened the participants about the need for changing the life styles to deal with the environment crisis due to climate change. He said education encourages people to use resources more efficiently. There is a need for everyone to learn how to recycle household waste. **Mrs. Maya Gupta, Director-Principle Universal Public School** in the Keynote address giving examples from ancient Vedas, provided insights about teachers' role in creating environment awareness among children.

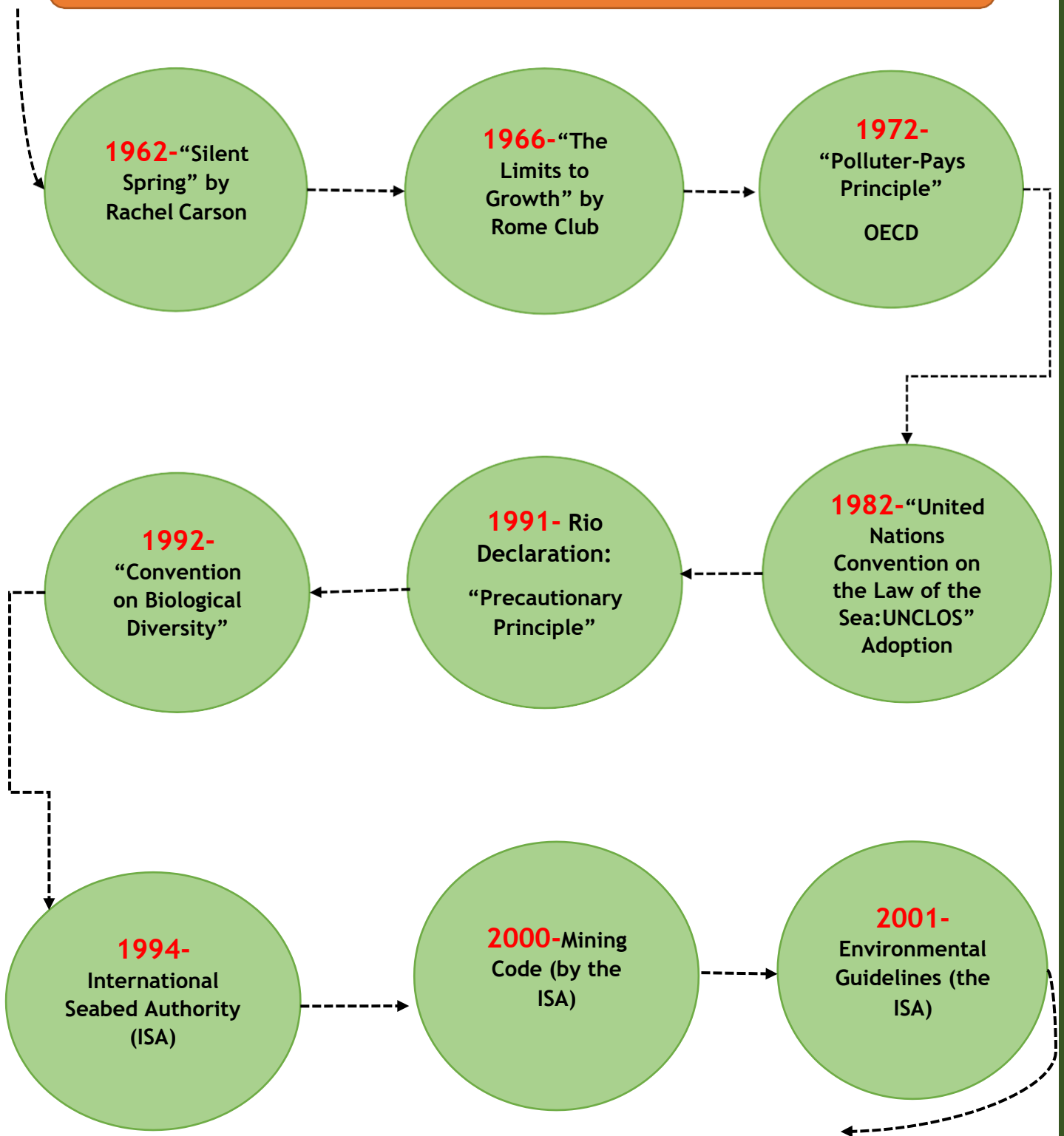
This unique Workshop participated by more than forty teachers and mentors from different schools had a focus on enhancement of skills and knowledge of science teachers. Giving emphasis to 100% engagement through novel approaches, the resource person introduced activity based learning techniques such as; DART, use of Concept maps, Tarsia grids and Chemical reaction grids. Different playful tools were suggested like; Bingo, Word search, Ionic jigsaw and others for teaching chemical equations and topics like particle nature of matter so as to inspire school students to study science. 'Foldscope' - a low cost, paper microscope easy to assemble and designed to give optical quality similar to conventional microscope was demonstrated for detection of pollutants in air, water and soil. Teachers were urged to introduce it among children for monitoring of pollution data from their surroundings.

The active learning in science benefited many teachers who felt that they could create magic in the classroom. 'Extremely interesting and useful' noted some participants. The two day Workshop ended with distribution of certificates & mementoes with recommendations to hold more such programmes in future towards excellence in human resource development towards sustainability. The IIC and joint partners ONGC and DSSTF were thanked profusely. CCRI Bulletin 'Climate SAR' on 'Climate Change and COP 24' vol. VI, no. 1, 2019 was released on this occasion'.



Glimpse from the event

Marine Environment Protection Acts



Based on the Guest Lecture delivered by Dr. M. Sudhakar, Director, Centre for Marine Living Resources and Ecology, Cochin and Adviser, Ministry of Earth Sciences on World Earth Day 2019, which was organized by the Climate Change Research Institute at the India International Centre, Delhi.

Chamoli Disaster

In Chamoli district of Uttarakhand, nature caused havoc on Sunday (7 February, 2021), wreaking havoc.

At around 9:15 am, a part of the glacier collapsed and fell into Rishinj at the mouth of Rishinj in the top part of Reni village in Neeti valley, causing severe flooding in the river.

A part of the glacier broke and collapsed into the Dhaul Ganga River. What are the initial thoughts about what brought about this mishap?

A large volume of water was flowing through a very narrow gorge, just above Reni village. The slope was extremely high and the valley very narrow -- this is the reason it shot like a jet," says Dr Mohammed Farooq Azam, assistant professor, IIT-Indore with a long experience in glaciology and hydrology.

Scientists trying to understand the possible reasons for the disaster

"One reason could be the snowfall that happened in that area on February 1. It is possible that the clear environment and the weather subsequently resulted in the melting of snow that went through the crack. When melted water reaches the bottom of a hanging glacier, we know it freezes and builds pressure. One explanation is that the glacier slipped because of this pressure.

The other reason could be that mass was slowly accumulating for the last few years and that heavy weight generated a crack day before yesterday (*February 6*) -- and then yesterday (*February 7*), it slipped completely."

Is climate change one of the main reasons for the Chamoli disaster?

Opinions

"We cannot really say right now how this is linked to climate change, but one way or another it is linked with climate change. Such events can also happen without climate change because snowfall is a natural phenomenon and over a period of time, the mountain slope is unable to hold more snow. That is what leads to a snow avalanche or an ice avalanche. That is how the excess snow and ice from a particular area is released."

"Climate change has resulted in the slopes becoming more lubricated because of warm snow. The snow is close to zero degrees centigrade. This makes the snow wet and we know that wet snow has a greater tendency for avalanche compared to very dry snow."

Overall, it is true that even without climate change, we will have such events, but climate change is the reason we are witnessing these events at higher frequency.

Why did glacier break in cold winter month of Feb?
EconomicTimes, Feb 8, 2021

DEHRADUN: It's winter. February temperatures can drop to below zero in the hills of Uttarakhand's Chamoli and summer is a long way off. Why, then, did a glacier break off, with disastrous effect? Geologists who have been studying the region's glaciers said climate change is to blame. [Read More](#)

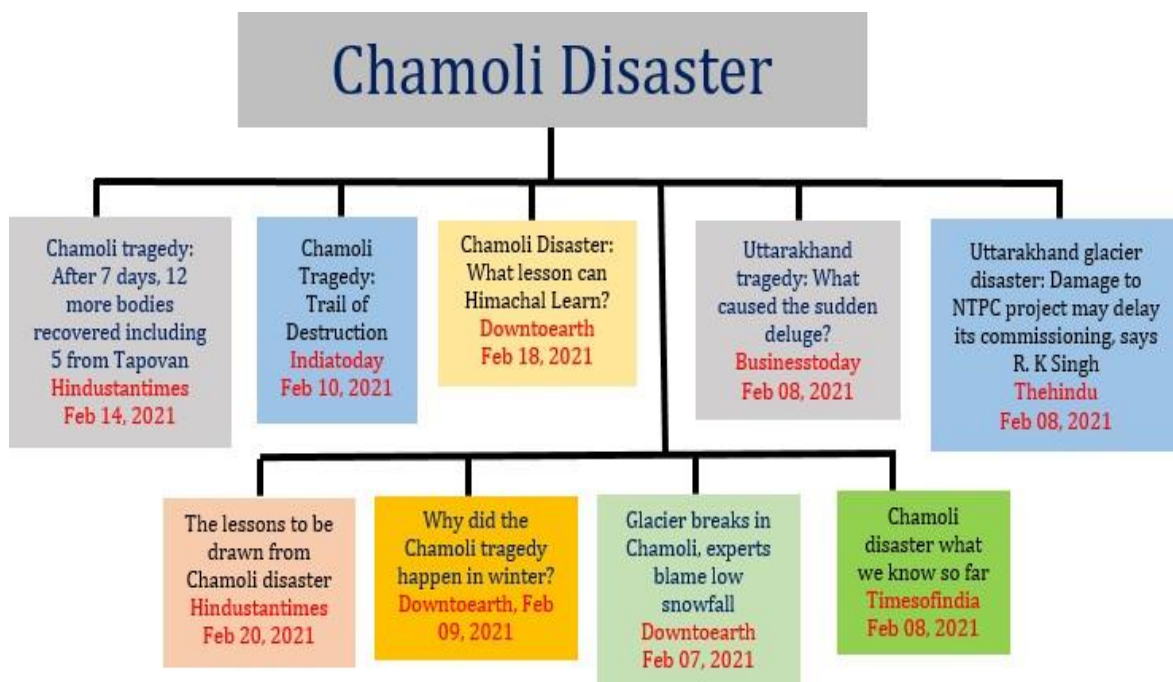


Uttarakhand glacier disaster highlights climate crisis risks:
Hindustantimes, Feb 9, 2021.

At least 31 people have died, 165 people are missing many more are feared to have died. The deluge first smashed into a small dam, gathering more energy as it grew heavier from the debris it collected along the way. When Ravi Chopra saw the devastating deluge of water and debris crash downstream from a Himalayan glacier on Sunday, his first thought was that this was exactly the scenario that his team had warned the Indian government of in 2014. [Read More](#)

Warming and warnings from the high Himalayas:
Timesofindia, Feb 13, 2021

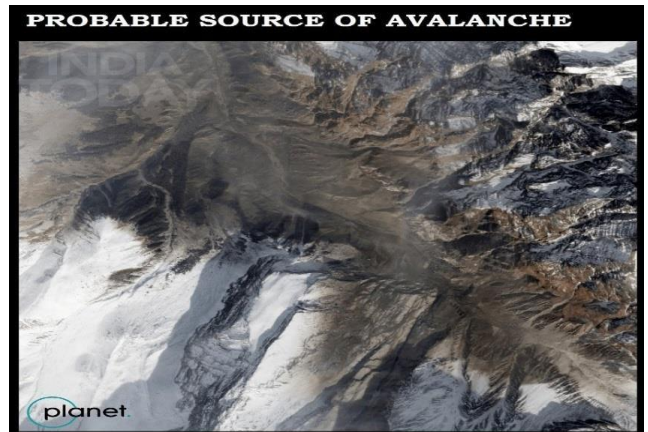
On Sunday (February 7), a glacier in the Indian Himalayas burst apart, releasing a torrential flood that destroyed one Hydroelectric dam project and damaged another, killed at least one people and left nearly 200 people missing and likely dead. Half a world away, this event might seem easy to disregard as yet another distant catastrophe – tragic yet unrelated to our daily lives. [Read More](#)



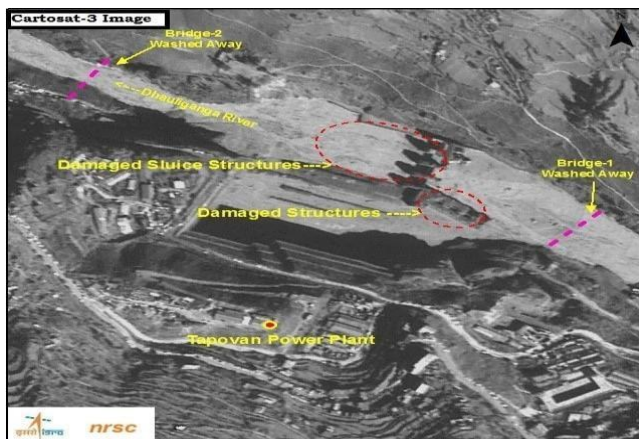
Chamoli Disaster



Relative of a person missing after the Uttarakhand flash floods awaits his return.



Satellite image shows the probable source of Sunday flash floods



Satellite image the damage at the NTPC project



Satellite image shows heavy boulders in the river belt near Joshimath



Chamoli tapoval Tunnel: people rescued complaining pain chamoli Disaster

E-news on climate change

The climate crisis needs a vaccine too: [Hindustantimes, Jan 1, 2021](#)

The pandemic has starkly exposed the perils of the rampant degradation of our planet's fragile ecology. It has been estimated that countries around the world may have spent a total of \$6 trillion to deal with the economic consequences of Covid-19, not counting the billions spent in laboratories around the world to fast-track an effective vaccine. The existential nature of the threat from the pandemic justified this extraordinary response even though nations failed to pool their scientific and financial resources to enable a collective and collaborative response. [More](#)



Climate crisis: Uttarakhand may see forest fires round the year: [Downtoearth, Jan 6, 2021](#)

It is winters but state forests are on fire. Experts say lack of soil moisture due to insufficient rainfall aided spread. It's freezing in Uttarakhand but the forests are on fire. The 'fire season' is likely to be a year-long phenomenon due to rising temperature, according to state forest minister Harak Singh Rawat. [More](#)

Early COVID-19 lockdown in Delhi had less impact on urban air quality than first believed: [Sciencedaily, Jan 13, 2021](#)

The first COVID-19 lockdowns led to significant changes in urban air pollution levels around the world, but the changes were smaller than expected, a new study reveals. The first COVID-19 lockdowns led to significant changes in urban air pollution levels around the world, but the changes were smaller than expected, a new study reveals. [More](#)





Upper ocean hottest in 2020 despite lower emissions due to COVID-19 Lockdowns: Downtoearth, Jan 14, 2021

When economies across the world locked themselves down last year to curb the spread of the novel coronavirus disease (COVID-19) pandemic, much was made out about how it helped the environment. Turns out global warming continued unabated: Surface temperature of oceans rose to record levels despite a drop in carbon emissions, a new study has found. [More](#)

Here' show air pollution is linked to increased risk of irreversible vision loss: Hindustantimes, Jan 26, 2021

Air pollution is associated with an increased risk of progressive and irreversible sight loss, known as age related macular degeneration (AMD), according to a long-term study that could pave the way for new treatment options for the disorder. The researchers, including those from the University College London, UK, noted that AMD is the leading cause of irreversible blindness among the over 50s in high-income countries, with the numbers of those affected projected to reach 300 million by 2040. [More](#)



Climate urgency: India and the World, Thehindu, Feb 18, 2021

The year 2020 broke records when it came to climate change. The need of the hour is to implement sustainable measures to reverse the tide. The United Nations Environment programme (UNEP) Emission Gap Report was released last month, at a time when the COVID-19 crisis dominated the world. 2020 set now records in terms of rise in extreme weather events, including wildfires and hurricanes, and in the melting of glaciers and ice at both poles. [Read More](#)

Global

Plastic is blowing in the wind: [Sciencedaily](#), Dec 23, 2020

The discovery of microplastics in the air above the ocean reveals the spread of this hazardous pollution. As the plastic in our oceans breaks up into smaller and smaller bits without breaking down chemically, the resulting microplastics are becoming a serious ecological problem. A new study at the Weizmann Institute of Science reveals a troubling aspect of microplastics - defined as particles smaller than 5 mm across.

[More](#)



Flashing plastic ash completes recycling: [Sciencedaily](#), Jan 13, 2021

A new flash graphene process, adapted to convert worthless pyrolyzed plastic ash, could be used to strengthen concrete and toughen plastics used in medicine, energy and packaging applications. Rice University scientists have turned their attention to Joule heating of the material, a by product of plastic recycling processes. A strong jolt of energy flashes it into graphene. [More](#)

Earth the reach temperature tipping point in next 20 to 30 years, new study finds: [Sciencedaily](#), Jan 13, 2021

An international team looked at 20 years of data from throughout the world and found that record-breaking temperatures are contributing to a significant decrease in plants' ability to absorb human-caused carbon emissions. [More](#)



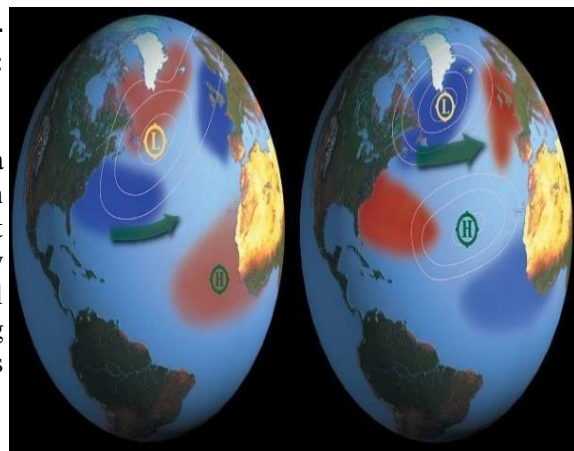


Northern lakes at risk of losing ice cover permanently, impacting drinking water: Sciencedaily, Jan 13, 2021

Close to 5,700 lakes in the Northern Hemisphere may permanently lose ice cover this century, 179 of them in the next decade, at current greenhouse gas emissions, despite a possible polar vortex this year, researchers have found. Those lakes include large bays in some of the deepest of the Great Lakes, such as Lake Superior and Lake Michigan, which could permanently become ice free by 2055. [More](#)

Human-induced climate change caused the north-western pacific warming record in august 2020: Sciencedaily, Jan 14, 2021

A new study revealed that the record-warm sea surface temperature over the northwestern Pacific in August 2020 could not be expected to occur without human-induced climate changes. Such extremely warm condition is likely to become a new normal climate in August by the mid-21st century, needing the prompt implementation of adaptation measures for anthropogenic global warming. [More](#)



Greenland melting likely increased by bacteria in sediment: Sciencedaily, Jan 14, 2021

Bacteria are likely triggering greater melting on the Greenland ice sheet, possibly increasing the island's contribution to sea-level rise, according to scientists. That's because the microbes cause sunlight-absorbing sediment to clump together and accumulate in the meltwater streams, according to new study. The findings can be incorporated in climate models, leading to more accurate predictions of melting, scientists say.

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Sea ice kept oxygen from reaching deep ocean during last ice age: [Sciencedaily](#), Feb 2, 2021

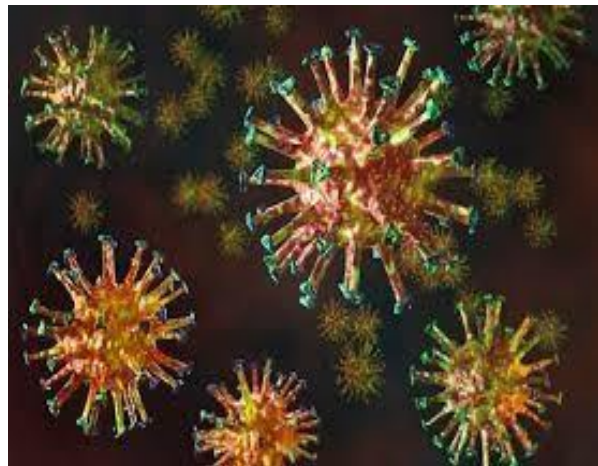
Extensive sea ice covered the world's oceans during the last ice age, which prevented oxygen from penetrating into the deep ocean waters, complicating the relationship between oxygen and carbon.

Extensive sea ice covered the world's oceans during the last ice age, which prevented oxygen from penetrating into the deep ocean waters, complicating the relationship between oxygen and carbon, a new study has found. [Read More](#)

Climate change may have driven the emergence of SARS-CoV-2: [Sciencedaily](#), Feb 5, 2021

A new study provides evidence of a mechanism by which climate change could have played a direct role in the emergence of SARS-CoV-2, the virus that caused the COVID-19 pandemic.

Global greenhouse gas emissions over the last century have made southern China a hotspot for bat-borne coronaviruses, by driving growth of forest habitat favoured by bats. [Read More](#)



Coal and COVID-19: How the pandemic is accelerating the end of fossil power generation: [Sciencedaily](#), Feb 8, 2021

COVID-19 has not only caused a temporary drop in global carbon dioxide emissions, it has also reduced the share of power generated by burning coal -- a trend that could in fact outlast the pandemic, according to a new study that looked at COVID-19's impact on the energy system and demand for electricity. [Read More](#)



Facts on the ground: How microplastics in the soil contribute to environmental pollution, Sciencedaily, Feb 11, 2021

Scientists in Korea investigate the abundance, characteristics, and potential sources of microplastic pollutants in agricultural soil samples. Plastic is a major threat to the environment. Of particular ecological risk is its manifestation as microplastics (<5 mm in size) in the agricultural environment. Scientists addressed this issue in a recent study, looking into the levels, shapes, and sizes of microplastics in Korean agricultural soils. [Read More](#)

More sustainable recycling of plastics, Sciencedaily, Feb 17, 2021

Plastics belong to the most widely used materials, and they are vital components of all modern technologies. So far, it has been possible to recycle these valuable materials only to a limited extent. In order to offer novel solutions, chemists developed a more sustainable method for chemically recycling polyethylene-like plastics. The researchers use 'breaking-points' on a molecular level to disassemble the plastic back to its molecular components. [Read More](#)



Skies of blue: Recycling carbon emissions to useful chemicals and reducing global warming Sciencedaily, Feb 17, 2021

Researchers optimize a novel process for the efficient conversion of carbon emissions into useful chemicals like acetate using microbes. Researchers optimize a novel process for the efficient conversion of carbon emissions into useful chemicals like acetate using microbes. Rapid global urbanization has dramatically changed the face of our planet, polluting our atmosphere with greenhouse gases and causing global warming. [Read More](#)

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