

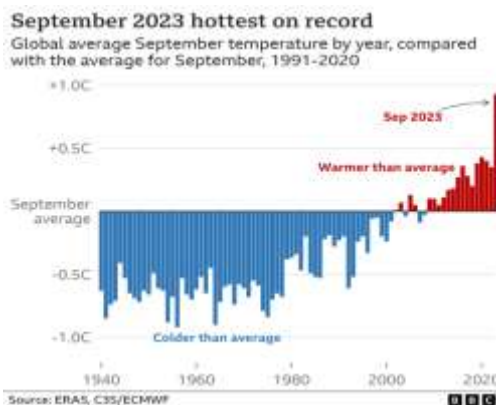
From ‘Climate Crisis’ and its Policies to the ‘Climate Polycrisis’

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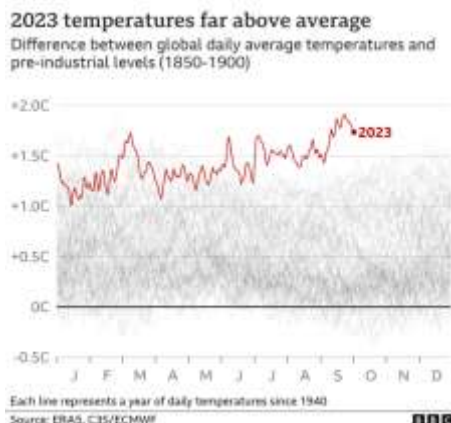
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The world's September temperatures were the warmest on record, breaking the previous high by a huge margin, according to the EU climate service. Last month was 0.93C warmer than the average September temperature between 1991-2020, and 0.5C hotter than the previous record set in 2020. Ongoing emissions of warming gases in addition to the El Niño weather event are driving the heat, experts believe. Some scientists said they were shocked by the scale of the increase. They say 2023 is now "on track" to be the warmest on record. September's high mark comes in the wake of the hottest summer on record in the northern hemisphere as soaring temperatures show no signs of relenting. The data, from the Copernicus Climate Change Service, shows that the month had the biggest jump from the long term average in records dating back to 1940. Scientists have been quite shocked by some of the detail in the data. "This month was, in my professional opinion as a climate scientist - absolutely gobsmackingly bananas," Zeke Hausfather, an experienced researcher, wrote on X formerly knowTwitter.



September's figure isn't a breach of that agreement, because the Paris target refers to decades not months. But it is undoubtedly a worrying direction of travel. Scientists believe that this year as a whole will stay under that 1.5C limit, but 2023 is "on track" to become the warmest on record, according to Copernicus. The year to the end of September shaded the current warmest year, 2016, by 0.05C as the hottest ever. Extreme heat has continued into October, smashing monthly high records in many locations including in Spain.



Experts believe the scale of heating puts new pressure on politicians to act, as they prepare to gather for the COP28 climate summit at the end of November. "Two months out from COP28, the sense of urgency for ambitious climate action has never been more critical," Dr Burgess said.

A new synthesis report designed to help governments reach a decision on the global stocktake at COP28 has been published by UN Climate Change. The report reflects the views of governments and their perspectives on the main elements that could constitute such a decision.

The global stocktake is part of the Paris Agreement and a key means to assess the world's global response to the **climate crisis** and chart a better way forward. The synthesis report is comprehensive and includes the views of almost all Parties. It is based on submissions received from 24 Parties on behalf of Party groups or individual Parties, representing 180 Parties and from 44 non-Party stakeholders (as of 2 October). Whilst there are divergent views on the details of how to reach the goals of the Paris Agreement, governments expressed broad agreement that past climate action has been insufficient and that more action by all Parties and support for developing countries is needed to limit global warming to 1.5 degrees Celsius, to avoid loss and damage, and to adapt to climate change.

Simon Stiell, Executive Secretary of UN Climate Change, said: "This report puts the cards on the table - except this is not a game. We know that we as the global community are not on track towards achieving the long-term goals of the Paris Agreement and that there is a rapidly closing window of opportunity to secure a livable and sustainable future." "This synthesis report is a blueprint of what the final outcome of the global stocktake could look like, based on Parties' own words. Nations should make full use of the inputs to build consensus for an ambitious outcome towards action in this critical decade," he added.

Dr. Sultan Al Jaber, COP28 President-Designate, said: "The report is again telling us the world is off track. COP28 is the moment for all Parties to come together and put actionable solutions on the table. We must be ready with real answers to tackle the challenges, eradicate 22 gigatons of emissions by 2030, strengthen global resilience and mobilize finance at the scale necessary to enable a just and equitable transition. Now is the time to Unite, Act, and Deliver a strong negotiated outcome on the Global Stocktake." The new report comes on the heels of the technical report on the global stocktake published in September which details actionable solutions to climate change that are ready to be implemented.

The global stocktake is held every five years and is intended to inform the next round of climate action plans under the Paris Agreement (nationally determined contributions, or 'NDCs') to be put forward by 2025. Last week, the World Meteorological Organisation said the 1.5 degree Celsius threshold was likely to be breached, at least temporarily, over the next five years. It also said that at least one of the next five years was almost certain to become the warmest year on record. A series of recent studies and reports have once again sounded the red alert on climate change, saying the situation was worsening rapidly, and the window of opportunity for effective action was narrowing faster than ever before.

The leaders of the G7 group of big, wealthy nations called this weekend for all governments to aim for net zero by 2050 at the latest. At a summit in the Japanese city of Hiroshima, leaders approved a document calling "on all parties – especially major economies" to "commit to net zero by 2050" at the latest. Campaigners have accused them of going against the principle that historical polluters should act faster than developing countries, which have contributed less to the climate crisis.

G7 leaders also urged countries to set targets that are aligned with limiting global warming to 1.5C. But, according to Climate Action Tracker, none of the G7 countries have targets or policies which are aligned with the 1.5C goal. Recently, Delegates to the Paris Agreement met in Bonn, Germany, paving the way to some key decisions for the UN Climate Conference (COP 28) in Dubai in 2023.

The **Bonn session** concluded with the agreement to share "informal notes" that will guide continued work leading up to COP (Conference of Parties) 28 in Dubai. The Bonn Climate Change Conference occurred from June 6-16, 2023. It was a significant event in the global effort to address climate change. Representatives from over 190 countries attended the conference. It allowed delegates to discuss and negotiate various issues related to climate change, including mitigation, adaptation, finance, and technology transfer.

Although the UN Climate Change Conference COP27 is behind us, the decisions taken in Sharm el-Sheikh require all countries to make an extra effort to address the climate crisis – starting now. Or as UN Secretary-General António Guterres put it, "COP27 concludes with much homework and little time."

So what did COP27 achieve and what needs to happen next to ensure the world can keep the worst consequences of climate change at bay? Here are five key takeaways from the conference, which will also shape the priorities for climate action in 2023 and beyond.

What are the important outcomes of COP27?

The Sharm el-Sheikh Implementation Plan emphasized that a global transition to a low-carbon economy will require at least annual spending of \$4-6 trillion.

The New Collective Quantified Goal on Climate finance and the Global Goal on Adaptation, which is equivalent to the global goal on mitigation of limiting global temperatures to 1.5 degrees Celsius.

The countries who have signed and ratified the Paris Agreement adopted Article 6 of the Paris Agreement, which allows countries to voluntarily cooperate with each other to achieve emission reduction targets set out in their NDCs.

Countries at the 27th Conference of Parties (COP27) to the United Nations Framework Convention on Climate Change (UNFCCC) at Sharm El-Sheikh finally decided on the establishment of a framework for achieving the Global Goal on Adaptation (GGA). They plan on achieving this through the remaining workshops on the Glasgow Sharm El-Sheikh Work Programme (GlaSS) on GGA that will be conducted in 2023.

The framework will be considered and adopted at the COP28 in 2023. It will also review the progress of achieving GGA and feed this information into the global stock-taking process that is going to end next year.

“We made progress on GGA and established a framework to guide the achievement of the goal as well as the review of overall progress in achieving it and enhancing adaptation action and support,” Collins Nzovu, Zambia’s minister of green economy and environment, representing the African Group of Negotiators (AGN), said at the closing plenary of COP27 on November 20, 2022.

We agreed on a process to track the doubling of adaptation finance. We call for enhanced support for adaptation action in developing countries, including through the Adaptation Fund. Both the establishment of a framework for achieving GGA and matters related to adaptation finance were issues of concern for the AGN bloc which represents all the 54 African countries at UNFCCC conferences. These decisions on GGA did not come easy and were achieved after negotiations began on a slow note in the first week, even though adaptation was one of the focus areas for COP27 presidency with many events themed around it.

India and Sweden hosted the **LeadIT Summit**, on the sidelines of COP27 at Sharm El Sheikh in Egypt. The Leadership for Industry Transition- LeadIT initiative focuses on low carbon transition of the hard to abate industrial sector.

Minister of Environment, Forest and Climate Change Bhupender Yadav emphasised that co-development is the only option to meet the targets that the world has taken for itself and without it, low carbon transition could be delayed by decades. He said, the low carbon transition of the industrial sector will not only contribute towards the reduction in required greenhouse gas emissions.

The Minister said, it has several co-benefits that include increasing resilience to changes in climate, enhanced energy security, innovation, socio-economic development and job creation. He also highlighted that the current phase of LeadIT is set to conclude in 2023 and the next year is the time to reflect on the performance and achievements so far.

The summit concluded with the adoption of the summit statement by the members of LeadIT which re-emphasized the commitment to continue pursuing the low-carbon transition of the industry. The members also committed to providing technical assistance to new members and emerging economies.

India Considers Joining **G7-Piloted 'Climate Club'** to Boost Climate Action: India is reportedly considering joining the 'Climate Club,' an environmental initiative started by the G7 to promote stronger climate action. The club’s three pillars are advancing ambitious and transparent climate policies, supporting substantial industrial decarbonisation, and encouraging international cooperation towards a just transition. The only new and clear deliverable on climate action at the recent G20 summit was a commitment to work towards tripling global renewable energy capacity by 2030.

According to an assessment by the International Energy Agency (IEA) earlier this year, this single measure could prevent 7 billion tonnes of carbon dioxide emissions by 2030. Not surprisingly, in the past few years, countries have been repeatedly urged to accept this as a goal.

At the 27th Conference of the Parties to the UN Framework Convention on Climate Change (COP27) held in 2022, the UN Secretary-General António Guterres warned the world leaders that humanity is on a “highway to climate hell with a foot on the accelerator”. This very sense of urgency to address rising temperatures and climate change was visible at the G20 Leaders’ Summit in New Delhi where the G20 nations committed to urgently accelerate their actions to address environmental crises and challenges including climate change. Inadequate progress on climate action calls for urgent sector and system-wide transformations – in the electricity supply, industry, transport and buildings sectors, and the food and financial systems – as current climate pledges leave the world on track for a temperature rise of 2.4-2.6°C by the end of this century. The latest report warns that atmospheric levels of the three main greenhouse gases - carbon dioxide, methane, and nitrous oxide - reached new record highs in 2021, showing the biggest year-on-year jump in methane concentrations since systematic measurements began nearly 40 years ago. Moreover, the increase in carbon dioxide levels from 2020 to 2021 was larger than the average annual growth rate over the last decade. This article was updated on March 20, 2023, to include findings from the most recent IPCC report.

As the G20 is collectively responsible for about 80 percent of global emissions, the climate change is an issue that requires global action. The nations acknowledged that the global ambition and implementation to address climate change remain insufficient to achieve the temperature goal of the Paris Agreement to hold the increase in the global average temperature to well below 2 degree C above pre- industrial levels, and they will

pursue efforts to limit the temperature increase to 1.5 degree C above pre-industrial levels. Also, limiting global warming to 1.5 degree C requires rapid, deep and sustained reductions in global GHG emissions of 43 per cent by 2030 relative to the 2019 levels.

The New Delhi Leader's Declaration urged all countries that have not yet aligned their Nationally Determined Contributions (NDCs) with the temperature goal of the Paris Agreement, to revisit and strengthen the 2030 targets in their NDCs, as necessary, by the end of 2023, taking into account different national circumstances. The G20 nations also agreed to pursue and encourage efforts to triple renewable energy capacity globally through existing targets and policies, as well as demonstrate similar ambition with respect to other zero and low-emission technologies, including abatement and removal technologies, in line with national circumstances by 2030.

G20 nations in New Delhi also reiterated their commitment to achieve global net zero GHG emissions/carbon neutrality by or around mid-century, while taking into account the latest scientific developments and in line with different national circumstances, taking into account different approaches including the Circular Carbon Economy, socio-economic, technological, and market development, and promoting the most efficient solutions. Recognizing the need for increased global investments to meet climate goals of the Paris Agreement, and to rapidly and substantially scale up investment and climate finance from billions to trillions of dollars globally from all sources, the G20 noted the need of \$ 5.8-5.9 trillion in the pre-2030 period required for developing countries, in particular for their needs to implement their NDCs, as well as the need of \$4 trillion per year for clean energy technologies by 2030 to reach net zero emissions by 2050. The G20 members recalled and reaffirmed the commitment made in 2010 by the developed countries to the goal of mobilizing jointly \$100 billion climate finance per year by 2020, and annually through 2025, to address the needs of the developing countries, in the context of meaningful mitigation action and transparency in implementation. Developed country contributors expect this goal to be met for the first time in 2023.

The G20 nations have promised to successfully to implement the decision at COP27 on funding arrangements for responding to loss and damage for assisting developing countries that are particularly vulnerable to the adverse effects of climate change, including establishing a fund. It was also stated that Call on Parties (COP) to set an ambitious, transparent and trackable New Collective Quantified Goal (NCQG) of climate finance in 2024, from a floor of \$100 billion a year, taking into account the needs and priorities of developing countries in fulfilling the objective of the UNFCCC and implementation of the Paris Agreement. The leaders also affirmed the 'G20 High Level Voluntary Principles on Hydrogen', to build a sustainable and equitable global hydrogen ecosystem that benefits all nations.

And as sustainable biofuels are critical to facilitating net zero by 2050, in New Delhi, the G20 Presidency launched the **Global Biofuels Alliance** with the United States as a founding member along with India, Brazil, Italy, Canada, Argentina, and South Africa. This new Alliance will bring countries together to expand and create new markets for sustainable biofuels.

Tripling capacities within seven years is an ambitious task, nonetheless. The current global installed capacity of renewable energy is just short of 3,400 GW. In 2022, about 295 GW of new capacity was added, the highest ever. To triple the total capacity by 2030, the world would have to add nearly 1,000 GW of new capacity every year. That is what agencies like the International Renewable Energy Agency (IRENA) and the IEA, and climate activists and civil society organisations have been pushing for. "Tripling renewable capacity by 2030 is an ambitious, yet achievable goal. Annual capacity additions have more than doubled from 2015 to 2022, rising by about 11% per year on average. Just a slightly higher annual growth rate would put renewables on track to meet the 2030 capacity target," the IEA said in a recent assessment. It acknowledged that a higher annual growth rate would require much stronger policy push from governments. "It is the single most important lever to bring about the reduction in carbon dioxide emissions needed by 2030. Expansion at that speed would allow renewable power generation growth to outpace total electricity demand, which is expected to increase strongly in the coming years — supported by the electrification of energy systems, the increasing use of cooling as temperatures climb, and robust demand growth in emerging and developing economies," IEA said.

The OECD International Programme for Action on Climate (IPAC) supports country progress towards net-zero greenhouse gas (GHG) emissions and a more resilient economy by 2050. Through regular monitoring, policy evaluation and feedback on results and best practices, IPAC helps countries strengthen and co-ordinate their climate action. It complements and supports the UNFCCC and the Paris Agreement monitoring frameworks.

The OECD repository of climate-related indicators brings together the latest international data and indicators on the environmental, economic, financial and social dimensions of climate change. The repository responds to the growing need for robust data to help countries design and implement effective policies to achieve net-zero emissions and contribute to a green recovery.

“The OECD has been working for decades on environmental, social and economic indicators. We are mainstreaming climate across every area of our work. This week, we are launching an expanded version of our Environment at a Glance platform, which gives access to about 50 climate-related indicators, interactive graphics and key messages on major environmental issues,” said OECD Secretary-General Angel Gurría.

The data range from greenhouse gas emissions and their drivers, to climate related impacts on the environment and well-being, and measures taken to achieve climate goals and seize the opportunities provided by a low-carbon economy. Bringing together data from OECD, IEA, ITF and other international sources in a single repository aims to facilitate their access and use. The data can be explored by country, source and sector, including detail on the factors driving emissions and individual country policies including carbon pricing, fossil fuel subsidies, innovation, investment in renewable energy and financial flows. More than 50 indicators are displayed for OECD countries and, when possible, with a global country coverage.

The Climate Change Performance Index 2023 report was released recently and India secured 8th position in the index which is 2 positions up from the last edition. Since no country was strong enough in all index categories to achieve an overall very high rating, thus the top three places i.e 1-3 are vacant. The current energy crisis clearly demonstrates how the world remains dependent on fossil fuels. However, many countries used this moment as a turning point for ambitious climate mitigation through rapid improvements in energy efficiency and renewable energy. Countries such as Chile, Morocco and India (ranked 6 to 8) have consistently performed well in the CCPI and are closing in on leading countries such as Denmark and Sweden (ranked 4 and 5). However, the largest emitter, China, falls sharply behind, dropping 13 ranks (now ranked 51) in the new index to the ‘very low’ category and joining the second largest emitter, the US (ranked 52). None of the 60 largest emitters is on a 1.5°C pathway yet, which means that the first three ranks of the index remain unoccupied. The Climate Change Vulnerability Index evaluates the vulnerability of human populations to extreme climate events and changes in climate over the next 30 years. It combines exposure to climate extremes and change with the current human sensitivity to those climate stressors and the capacity of the country to adapt to the impacts of climate change.

Most recently, in March 2023, the IPCC released an overarching synthesis report, integrating the findings from its Sixth Assessment Report cycle and serving as a “how-to guide to defuse the climate time bomb,” according to U.N. Secretary General António Guterres. Leading up to this final publication, the Sixth Assessment Report had included a three-part series—each written by a corresponding working group. In August 2021, the first part laid out the current, best-available physical science on climate change. The second part, released in February 2022, covered impacts, adaptation, and vulnerability to climate change, for both ecosystems and people. And the third part evaluated mitigating climate change and was released in April 2022.

What are the important findings of the current IPCC report?

Widespread, rapid, and intensifying—those are the words used by the IPCC to describe climate change in the Sixth Assessment Report, the most comprehensive look at present and future climate impacts to date. Its conclusions, based on the latest generation of climate models, are clear: “There is a rapidly closing window of opportunity to secure a livable and sustainable future for all,” the most recent synthesis report says. With very high confidence, the choices and actions taken in this decade will impact us “now and for thousands of years.” Current adaptation efforts, too, are scattered and leave behind some of the most vulnerable communities. And if the planet gets much warmer, we may see irreversible changes to some ecosystems around the world, which would be catastrophic for the people and wildlife that depend on them.

At the halfway point of the 2030 Agenda, the science is clear – the planet is far off track from meeting its climate goals. This undermines global efforts to tackle hunger, poverty and ill-health, improve access to clean water and energy and many other aspects of sustainable development, according the United in Science 2023 report, a multi-agency report coordinated by the World Meteorological Organization (WMO).

Extreme weather and climate change impacts are increasing in Asia, which ricocheted between droughts and floods in 2022, ruining lives and destroying livelihoods. Melting ice and glaciers and rising sea levels threaten more socio-economic disruption in future, according to a new report from the World Meteorological Organization (WMO). The expected increase in the frequency and severity of extreme events over much of Asia will impact agriculture, which is central to all climate adaptation planning.

More than a century of burning fossil fuels as well as unequal and unsustainable energy and land use have led to global warming of 1.1°C above pre-industrial levels. This has resulted in more frequent and more intense extreme weather events that have caused increasingly dangerous impacts on nature and people in every region of the world. But there are multiple, feasible and effective options to reduce greenhouse gas emissions and adapt to human-caused climate change, and they are available now, said scientists in this IPCC report. Taking effective and equitable climate action will not only reduce losses and damages for nature and people, it will also provide wider benefits, the report points out, underscoring the urgency of taking more ambitious action now to secure a livable sustainable future for all.

Solar Radiation Modification – a speculative group of technologies to cool the Earth – requires far more research into its risks and benefits before any consideration for potential deployment, according to an Expert Panel convened by the United Nations Environment Programme. The panel finds that Solar Radiation Modification is not yet ready for large-scale deployment to cool the Earth. Rapid reduction in greenhouse gas emissions must remain the global priority, the report states.

We are facing a **Climate Polycrisis**, a complex and multidimensional problem that requires urgent action. According to the 2021 WHO Health and Climate Change Survey Report, climate change poses a serious threat to human health and well-being, especially for the most vulnerable populations.

The **Climate Polycrisis**- a term made popular by Adam Tooze- refers to the interconnected and compounding crises related to climate change that are affecting the planet not just in a few sectors but across several sectors and domains. It encompasses the physical impacts of climate change (rising temperature, sea-level rise, and extreme weather events and social, economic, and political challenges) that arise from these impacts.

The WHO estimates that between 2030 and 2050, climate change will cause approximately 250,000 additional deaths per year from: Malnutrition, Malaria, Diarrhea and Heat stress. Globally there is an obsession with the enigmatic "disease x" but it is the familiar annual cycles of known agents such as influenza, measles, Japanese encephalitis, dengue etc. Climate change is not limited to infectious diseases. It also exacerbates injuries and deaths from extreme weather events, respiratory and cardiovascular diseases and mental health issues.

According to a RBI report, Extreme heat and humidity may adversely affect labor hours and up to 4.5% of India's GDP could be at risk by 2030. According to Sri Sri Institute of Agricultural Sciences & Technology Trust (SSIAST), as agriculture contributes 15% to India's GDP, climate change presumably causes about 1.5% loss in GDP. By 2030, rice and wheat are likely to see about 6-10% decrease in yields. Lack of Political Will and Collective Action: Addressing the climate crisis and environmental challenges requires coordinated efforts at local, national, and global levels. A lack of political will and inadequate collective action can hinder the implementation of effective policies and measures to reduce emissions, adapt to climate change, and support vulnerable communities. For instance, even after 8 years of signing the Paris Agreement, it has significantly failed to address climate change. After signing of the Agreement, the last eight years (2015-2022) have consecutively been the warmest years on record globally.

Globally updated NDCs to limit global warming to 1.5°C have failed even to achieve the 2°C target. It has not been able to equitably phase out fossil fuels predominantly responsible for the climate crisis. Extreme Weather Events: India is already experiencing an increase in the frequency and intensity of extreme weather events such as cyclones, floods, droughts, and heatwaves.

Climate change affects the social and environmental determinants of health – clean air, safe drinking water, sufficient food and secure shelter.

Between 2030 and 2050, climate change is expected to cause approximately 250 000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress.

The direct damage costs to health (i.e. excluding costs in health-determining sectors such as agriculture and water and sanitation), is estimated to be between USD 2-4 billion/year by 2030.

Areas with weak health infrastructure – mostly in developing countries – will be the least able to cope without assistance to prepare and respond.

Reducing emissions of greenhouse gases through better transport, food and energy-use choices can result in improved health, particularly through reduced air pollution.

Climate change is the single biggest health threat facing humanity, and health professionals worldwide are already responding to the health harms caused by this unfolding crisis.

The Intergovernmental Panel on Climate Change (IPCC) has concluded that to avert catastrophic health impacts and prevent millions of climate change-related deaths, the world must limit temperature rise to 1.5°C. Past emissions have already made a certain level of global temperature rise and other changes to the climate inevitable. Global heating of even 1.5°C is not considered safe, however; every additional tenth of a degree of warming will take a serious toll on people's lives and health.

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While no one is safe from these risks, the people whose health is being harmed first and worst by the climate crisis are the people who contribute least to its causes, and who are least able to protect themselves and their families against it - people in low-income and disadvantaged countries and communities. The climate crisis threatens to undo the last fifty years of progress in development, global health, and poverty reduction, and to further widen existing health inequalities between and within populations. It severely jeopardizes the realization of universal health coverage (UHC) in various ways – including by compounding the existing burden of disease and by exacerbating existing barriers to accessing health services, often at the times when they are most needed. Over 930 million people - around 12% of the world's population - spend at least 10% of their household budget

to pay for health care. With the poorest people largely uninsured, health shocks and stresses already currently push around 100 million people into poverty every year, with the impacts of climate change worsening this trend.

In the short- to medium-term, the health impacts of climate change will be determined mainly by the vulnerability of populations, their resilience to the current rate of climate change and the extent and pace of adaptation. In the longer-term, the effects will increasingly depend on the extent to which transformational action is taken now to reduce emissions and avoid the breaching of dangerous temperature thresholds and potential irreversible tipping points.

Incidentally, tripling of renewable capacities was also among the lowest-hanging fruits available to the G20 grouping on the climate front, despite some initial reservations from traditional fossil fuel-producing countries like Russia and Saudi Arabia. Renewable energy is already being deployed at a rapid pace across the world, with annual capacity additions growing by around 10% every year. And though the push no doubt came from the developed countries, there is no inherent objection to the deployment of renewable energy from the developing countries.

For countries like India and China, the growth of renewable energy is also the most preferred way to contribute to the global fight against climate change, and bring down the role of fossil fuels in their economies. For example, we can end inefficient fossil fuel subsidies and put a price on carbon, we can invest in innovation and new technology, in better management of overall energy systems, or in building sustainable and resilient food systems. Many will contain trade-offs for policymakers to consider carefully and address, but solutions are multiple.

A **climate polycrisis** could lead to more frequent and severe events, causing widespread damage to infrastructure, agriculture, and human settlements.

According to a RBI report, Extreme heat and humidity may adversely affect labor hours and up to 4.5% of India's GDP could be at risk by 2030.

Agriculture: India's agriculture sector is highly dependent on monsoon rains. A climate polycrisis with erratic rainfall patterns, prolonged droughts, and flooding can disrupt crop cycles, leading to reduced yields and food insecurity. This could result in higher food prices and economic challenges for farmers.

According to Sri Sri Institute of Agricultural Sciences & Technology Trust (SSIAT), as agriculture contributes 15% to India's GDP, climate change presumably causes about 1.5% loss in GDP. By 2030, rice and wheat are likely to see about 6-10% decrease in yields.

Water Scarcity: Climate change can exacerbate water scarcity issues in India. Rising temperatures and changing precipitation patterns can reduce the availability of freshwater for drinking, agriculture, and industrial use. This can lead to conflicts over water resources and impact public health.

Sea-Level Rise: India has a long coastline, and many major cities are located near the coast. Sea-level rise, coupled with increased storm surges, can lead to coastal erosion and inundation of low-lying areas, displacing communities and causing economic losses.

Health Impact: Climate polycrisis can increase the risk of health problems, including heat-related illnesses, vector-borne diseases (such as malaria and dengue), and respiratory issues due to air pollution and wildfires. Vulnerable populations, including children and the elderly, are particularly at risk.

Economic Disruptions: The interconnectedness of various sectors means that disruptions in one area, such as agriculture or infrastructure, can have cascading effects on the overall economy. Reduced agricultural productivity, damage to infrastructure, and increased healthcare costs can strain the country's economy.

Increased Energy Demands: Increased temperatures may lead to higher energy demands for cooling, which can strain the electricity grid and contribute to greenhouse gas emissions if fossil fuels are used for power generation.

Climate Feedback Loops: Climate polycrises can trigger feedback loops, where one crisis exacerbates another. For example, wildfires can release stored carbon, contributing to further climate change.

Political Instability: Resource scarcity, displacement, and economic hardships can contribute to political instability, conflict, and social unrest in affected regions.

National Security: Climate-related challenges can exacerbate tensions and conflicts over resources such as water and arable land, potentially impacting national security.

To tackle this intertwined crisis effectively, we need to develop a holistic strategy that takes into account the diverse perspectives and goals of different stakeholders. This strategy should also emphasize resilience, equity, and justice principles.

How to Tackle Climate Polycrisis?

Implement National Carbon Accounting (NCA): Establish a comprehensive NCA system that measures and tracks carbon emissions from individuals to the entire nation, including businesses and households.

Promote Carbon Awareness: Educate the public about the importance of carbon emissions and the impact on climate change. Make carbon emissions and their effects more visible to the general population.

Introduce Carbon Taxation: Implement a progressive carbon tax system based on NCA data. Penalize large emitters more than average consumers to incentivize carbon reduction efforts.

Set Realistic Reduction Targets: Use the NCA system to set specific, science-based carbon reduction targets for the nation. These targets should align with global climate goals, such as achieving net-zero emissions.

Predict and Track Progress: Utilize NCA data to make predictions about future emission reductions and continuously track progress toward meeting carbon reduction targets. Adjust policies and strategies as needed.

Innovate for Carbon Reduction: Encourage the development and adoption of new technologies and practices that reduce carbon emissions. Support research and development in sustainable technologies.

Carbon GDP as a Parallel Goal: Alongside traditional economic GDP, introduce "carbon GDP" as a parallel goal. Encourage countries to work towards reducing their carbon GDP to promote ecological sustainability.

Public Discourse and Engagement: Foster a new form of public discourse around carbon emissions and sustainability. Engage citizens in discussions about the environment and the economy's role in it.

Align Development and Sustainability: Ensure that economic development and sustainability goals are aligned. Use NCA data to make informed decisions that balance economic growth with environmental protection.

Global Adoption: Promote the adoption of NCA systems globally, encouraging other nations to implement similar frameworks for tracking and managing carbon emissions.

Create New Livelihoods: Explore opportunities for creating new livelihoods and economic activities related to carbon reduction, such as renewable energy industries and carbon offset projects.

Policy Integration: Integrate carbon accounting and reduction measures into various policy areas, including energy, transportation, agriculture, and industry.

International Cooperation: Collaborate with other countries to address the global nature of the climate polycrisis. Share best practices, technologies, and resources for a collective effort.

Beating a long term recent average by almost a degree is bad enough, but this masks even greater differences in some parts of the globe. In Europe, for example, the scale of heating was remarkable, beating the long term average by 2.51C.

"The unprecedented temperatures for the time of year observed in September - following a record summer - have broken records by an extraordinary amount," said Dr Samantha Burgess, Deputy Director of the Copernicus Climate Change Service (C3S).

Global temperatures may surge even further above normal as the El Niño weather event is yet to peak.

El Niño forms part of the El Niño Southern Oscillation - the dominant natural mode of global climate variability on Earth on seasonal or year-to-year timescales. During El Niño events, warm water comes to the surface in the East Pacific, releasing additional heat into the atmosphere.

What is El Niño, and how does it affect the weather?

This is one of the reasons for surging global temperatures - when added to the long-term warming caused by humans, mainly from fossil fuel burning releasing planet-warming greenhouse gases.

A series of recent studies and reports have once again sounded the red alert on climate change, saying the situation was worsening rapidly, and the window of opportunity for effective action was narrowing faster than ever before.

Climate-change sensitive knowledge-gathering for Himalayan rivers is vital. Renowned water resources expert Professor Ajaya Dixit talks about why the climate crisis is the only lens through which we must view the Himalayas. The flooding in Sikkim, which has left 22 dead and over 100 missing — as per the latest count, the numbers are still rising — has made it clear the price we pay for development at the cost of the environment. Kathmandu-based Ajaya Dixit, a Professor of Practice at the Kathmandu School of Law and an internationally renowned expert on water resources, argues for an overhaul in knowledge collection about the Himalayan river system — one which must take into account the very real consequences of climate change — before creating any further infrastructure for the residents of the region.

Climate change is causing more frequent, intense cyclones on India's western coast

Human-induced climate change is causing more frequent and intense cyclones on India's west coast, finds a new study. Changes in the patterns of ocean and atmosphere warming are causing more frequent and severe tropical cyclones in the Eastern Arabian Sea, next to India's west coast, according to a new study.

Typically, tropical cyclones usually happen in the Arabian Sea at the start of the southwestern monsoon between March and June, as well as after the season, between October and December.

“In 2019, the Arabian Sea witnessed five cyclones as compared to its normal count of three, and the year 2019 corresponds to a positive IOD (Indian Ocean dipole) phase. Hence, under favourable natural climate modes, warming of Arabian Sea can increase the frequency and intensity of tropical cyclones in the North Indian Ocean,” said S Abhilash, co-author of the study published in Scientific Reports, to indianexpress.com. He is an associate professor in the Department of Atmospheric Science at the Cochin University of Science and Technology. (CUSAT).

The Indian Ocean Dipole and its effect on cyclones

The IOD is similar to the El Nino, where one part of the ocean gets warmer than the other. During its positive phase, sea surface temperatures get warmer, and there is more precipitation (rain) in the western Indian Ocean region. This corresponds to more rain in the eastern Indian Ocean. The Indian Ocean Dipole and its effect on cyclones

The IOD is similar to the El Nino, where one part of the ocean gets warmer than the other. During its positive phase, sea surface temperatures get warmer, and there is more precipitation (rain) in the western Indian Ocean region. This corresponds to more rain in the eastern Indian Ocean. Cyclones could affect the entire western coast of India from Gujarat to Thiruvananthapuram

As the eastern Arabian Sea changes, the coastlines of western India are increasingly at risk. As the intensity of cyclones increase, so does their potential to cause high wind, storm surges, severe rainfall, and more. This means that cyclones could pose more and more of a threat to all densely populated coastal regions along the western coast, from Thiruvananthapuram to the coast of Gujarat.

“This is something we have never seen before in the Arabian Sea. We need more studies about these trends. This is especially going to affect the lives and livelihood of the indigenous coastal communities and artisanal fishers,” added Abhilash.

Across these 5 policy levers and 5 sectors;

INVEST

Governments can fund research and development in innovation to boost greener technology and infrastructure.

REGULATE

Governments can regulate to control emissions and ban polluting activities and chemicals that are toxic for people and the environment.

TAX & SUBSIDISE

Governments can tax and subsidise in a way that drives decarbonisation, for instance by applying carbon taxes and cutting support for fossil fuels.

LEAD BY EXAMPLE

Governments can lead the way with greener subcontracting and rules of conduct nationally and locally.

INFORM & EDUCATE

Governments can step up educational programmes and campaigns to raise awareness, and inspire businesses and consumers to act.

The need to reduce greenhouse gas emissions more quickly .The world needs to reduce greenhouse gas emissions by 50% by 2030 and move towards ‘**Green Energy Transition**’. It should reach net-zero emissions by mid-century to avoid the worst effects of climate change.

The need to increase climate finance. Developed countries must fulfill their commitments to provide climate finance to developing countries. It will help them to transition to a low-carbon economy.

The need to improve the implementation of the Paris Agreement. Countries need to strengthen the implementation of the agreement along with **Sustainable development goal no.13**. It includes the development of new rules and procedures such as ‘**Ecological Governance**’ and also need to embrace the ‘**One Health Paradigm**’ as our best defences.The road ahead demands concerted efforts,not just to adopt but also to proactively safeguard our Planet and its habitants.

Recognising the complexity and interconnectedness of the climate polycrisis,it is crucial in developing a holistic approach that takes into account the diverse perspectives and priorities of different stakeholders while ensuring resilience, equity,and justice.

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