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Why the IPCC's Synthesis Report is Critical to Developing Nations

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The Intergovernmental Panel on Climate Change's Synthesis Report lays down a stark warning—without immediate & ambitious climate action, the world will cross several tipping points, which will have catastrophic consequences for human beings, the economy, and nature. It is time we all pay attention.

In March 2023, the Intergovernmental Panel on Climate Change (IPCC) released the Synthesis Report of the Sixth Assessment Report (AR6) during its 58th session in Interlaken, Switzerland, which received a lot of attention in the media. It was based on three Working Groups Assessment Reports—WGI – The Physical Science Basis, WGII – Impacts, Adaptation and Vulnerability, WGIII – Mitigation of Climate Change, and the three Special Reports—Global Warming of 1.5°C, Climate Change and Land, The Ocean and Cryosphere in a Changing Climate.

The Synthesis Report of AR6 comes at a critical time. The world is experiencing extreme climate events in almost all regions at an unprecedented scale, which is affecting millions of people, their infrastructure, and nature. At the time this article was being written, there was a massive heat wave in parts of South and Southeast Asia. The Synthesis Report will provide an input to the Global Stocktake later this year where countries and other stakeholders will review their collective progress towards addressing climate change as agreed in Paris in 2015.

Seven years later, in 2030, we will see our progress on the United Nations' 17 Sustainable Development Goals, which include important targets to eradicate poverty, reduce hunger, provide access to clean water and sanitation, offer sources of clean and affordable energy, build sustainable cities and communities, and improve the status of our ecosystems, among other things.

> The Synthesis Report shows that global temperatures have already increased by 1.1°C above pre-industrial levels and are likely to reach or exceed 1.5°C by the mid-2030s. Greenhouse gas emissions from human activities continue to increase.

The Synthesis Report identifies gaps and challenges in climate action globally, and lays down a list of solutions that exist and could be scaled up to meet this challenge.

The report lays down a stark warning—in the absence of immediate and ambitious climate action, the world will cross several tipping points, which will have catastrophic consequences for human beings, the economy, and nature. It underlines that actions to reduce greenhouse gas emissions and adapt to the changing climate are needed now, and at a much deeper and wider scale than expected.

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Action Gaps and Challenges

Pace and scale of climate action is insufficient: As we now know, every tonne of carbon dioxide (CO_2) we add to the atmosphere adds to global warming. That means we have to stop adding CO_2 to the atmosphere to stop global warming from getting increasingly worse. To limit warming below any specific limit such as 1.5° or 2°C, the total amount of CO_2 emissions needs to be kept within the limits of a specific carbon budget. The total amount emitted is what will determine the total warming that we will experience. At the current rate of emissions, the remaining carbon budgets to limit warming to 1.5°C could soon be exhausted, and those for 2°C largely depleted.

By the end of 2022, around 140 countries had announced or were considering net zero targets, covering close to 90% of global emissions. More than 800 cities now have net zero targets in some form. The Government of India has pledged to achieve net zero emissions by 2070. Several Indian corporate houses have set decarbonisation targets internally to become carbon neutral by 2050 or before. These include Vedanta, Aditya Birla Group, Mahindra & Mahindra, and Dalmia Cement, among others.

However, globally, the pace and scale of what has been done so far, and current plans, are not enough to tackle climate change. For example, the commitments from countries to reducing emissions are not ambitious enough. Without a strengthening of policies, a global warming of 3.2°C is projected by 2100.

World is not prepared for dangers: Climate change has had an economic impact on climate-exposed sectors such as agriculture, forestry, fisheries, energy, and tourism. Livelihoods have been affected through, for example, destruction of homes and infrastructure, and loss of income. Roughly half the world's population now experiences water scarcity at some point each year, partly due to climate change. The limits of our ability to adapt to the changing climate have already been reached in some ecosystems and regions. Vulnerable communities that have historically contributed the least to climate change are disproportionately affected.

> The report highlights the need for greater investment in climate observation and monitoring systems, as well as efforts to improve the availability and quality of this information.

The development challenges now causing high vulnerability are influenced by historical and ongoing patterns of inequity such as colonialism, especially for many indigenous peoples and local communities. There is increased evidence of what is called maladaptation, or actions that are unsustainable. For example, farmers using high-cost irrigation in areas where drought may become more intense makes little sense. The report highlights the need for greater investment in climate observation and monitoring systems, as well as efforts to improve the availability and quality of this information.

Climate finance needs to increase many fold: In 2018, developed countries fell short of their goal of mobilising US$100 billion a year by 2020 to provide climate finance to developing countries. Currently, more money is going towards funding fossil fuels rather than climate action.

The current global financial flows for adaptation, including both public and private sources, are not enough. The gaps and opportunities are greatest in developing economies. A rapid scaling up of finance flows from global capital markets, and public funds from developed economies for enhanced mitigation and accelerated adaptation, can act as a catalyst for accelerating the global shift to sustainable, climate-resilient development.

There is sufficient global capital and liquidity to close global investment gaps, but there are barriers to redirecting capital to climate action. Developing countries like India require external funding to meet adaptation needs.

Earth may cross dangerous tipping points: Tipping points refer to critical thresholds in the Earth's climate system beyond which a particular aspect of the climate, such as temperature or ice cover, may undergo rapid and irreversible change even if the underlying drivers of climate change (for example, greenhouse gas emissions) are reduced or eliminated.

The report emphasises that tipping points are complex and difficult to predict with certainty, but highlights the importance of taking urgent and ambitious action to reduce greenhouse gas emissions and limit global warming. This can help to reduce the risk of crossing tipping points.

As temperatures rise, the frozen areas of the earth, such as glaciers, ice sheets, and permafrost are at risk. For example, the loss of the Greenland Ice Sheet could lead to the release of large amounts of methane, a potent greenhouse gas. These tipping points could have significant impacts on sea level rise, coastal communities, and global climate.

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The ocean plays a critical role in regulating the earth's climate and absorbing excess heat and carbon dioxide from the atmosphere. The collapse of major ocean circulation patterns could have significant impacts on regional and global climate patterns. As temperatures rise and precipitation patterns shift, ecosystems are at risk of crossing tipping points.

For example, nearly 50% of coastal wetlands have been lost over the last 100 years as a result of the combined effects of localised human pressures, sea level rise, warming, and extreme climate events. Approximately half of the species assessed globally have shifted pole wards or, on land, to higher elevations. Hundreds of local losses of species have been driven by increases in the magnitude of heat extremes and mass mortality events on land and in the ocean.

Human societies and economies are also at risk of crossing tipping points, such as the collapse of agricultural systems due to climate extremes or the loss of coastal infrastructure due to sea level rise. For coastal settlements in India, this could mean a significant risk to life, livelihoods, and infrastructure.

What Action Can We Take?

The Synthesis Report calls for significant changes in energy systems, land use, urban environments, transportation, and industry. The good news is there are several measures that are feasible, low-cost and effective, and have been implemented in a number of regions.

The top options for climate change mitigation in the near term are switching to renewables such as wind and solar energy; using energy efficiently; stopping deforestation; and reducing methane emissions. Many technologies or practices are increasingly becoming cost effective and are supported by the public. These include solar energy, wind energy, urban green infrastructure, reducing conversion of forests and other ecosystems, restoring ecosystems, reducing food waste and loss, and making energy-efficient buildings and appliances. They also involve shifting to public transport and cycling, switching to sustainable, healthy diets, and reducing the demand for materials in industry, while emphasising recycling.

> The report emphasises the role of behaviour change in reducing emissions. A transition towards sustainable lifestyles, including reducing and changing consumption patterns, is necessary.

Cities offer a global scale opportunity for ambitious climate action that contributes to sustainable development. India needs to reset its current model of development where cities sprawl to take over the countryside and new developments follow the western model of car-dependent growth. Shorter travel distances, supported by public transport and cleaner vehicle modes, could reduce air pollution and improve the quality of life in cities.

Ambitious building regulations can make buildings more energy efficient and resilient to heat and weather extremes. However, many large Indian cities are approving high-rise buildings that follow conventional construction practices that mainly rely on high amounts of cement and steel.

A transformation can only be achieved if efficiency, passive design, and cleaner technologies are made mandatory and incentives are provided to developers to shift to sustainable construction practices. If we fail to act, we will end up constructing millions of square metres of floor space requiring a high amount of energy for lighting and air conditioning.

Role of Sustainable Lifestyles

The report emphasises the role of behaviour change in reducing emissions. A transition towards sustainable lifestyles, including reducing and changing consumption patterns, is necessary. However, while a large population still needs significant energy and room to grow, the level of consumption among the wealthiest households in the country has been at an all-time high.

For example, SUVs are the fastest selling segment in the Indian car market. The sale of appliances has been growing rapidly and the well-off in major cities prefer large homes. People with a high socio-economic status contribute more to emissions and have the greatest potential to reduce them through their roles as citizens, investors, consumers, role models, and professionals. Current policies fail to check overconsumption by rich households.

Education and raising awareness can play a critical role in promoting sustainable lifestyles by fostering values and attitudes that prioritise sustainability and providing individuals with the skills and knowledge needed to make sustainable choices. For example, the Lifestyle for Environment (LiFE) Mission led by the Government of India aims to shift people from a wasteful “use-and-throw” economy to a more mindful and sustainable circular economy. It intends to encourage individuals to adopt simple but impactful eco-friendly habits in their daily lives.

> Significant progress has been made in developing and deploying low-carbon technologies such as rooftop solar panels, wind power, electric two wheelers, and buses. Many of these cleaner technologies also improve the health and well-being of people.

To achieve this, LiFE plans to utilise social networks by creating a global community of like-minded individuals called “Pro-Planet People” (P3), who are committed to promoting environmentally friendly lifestyles. Through the P3 community, the Mission hopes to

establish a self-sustaining ecosystem that reinforces and enables eco-friendly behaviour.

However, lifestyle changes need infrastructure and technology support. The shift to clean transport can only happen if cleaner public transport modes are available and accessible. The way choices and their implications are presented and conveyed can help people change their behaviour. While there is general awareness around sustainability in India, formal education at all levels fails to include practical and usable knowledge on sustainability in curricula.

The private sector has a significant role to play, both through their manufacturing and supply chains and adopting sustainable practices in the workplace. However, it has not been taking up its fair share of responsibility in climate action.

Hope on the Horizon

The Synthesis Report offers several key messages of hope for climate action. First, it is still possible to limit global warming to 1.5°C or below by reducing greenhouse gas emissions and implementing climate adaptation measures.

Significant progress has been made in recent years in developing and deploying low-carbon technologies such as rooftop solar panels, wind power, electric two wheelers, and buses. Many of these cleaner technologies or lifestyle changes can also improve the health and well-being of people. For example, changing diets by reducing meat and dairy consumption and a switch to plant-based diets can benefit health. Climate change adaptation actions, such as improving access to drinking water, reducing flood risks, improving early warning systems, and improving access to healthcare, can also have significant effects.

Overall, it is still possible to limit the worst impacts of climate change. But, of course, this will not happen without cooperation between countries, particularly on finance and technology transfer. India's historic contribution to greenhouse gas emissions has been quite low. It is only fair that developed countries shoulder a higher responsibility for taking bold actions. At the same time, this should not be an excuse for India to carry on with business as usual.

> Achieving net zero emissions is challenging for a developing country like India where millions or poor and low income households will require energy and infrastructure to achieve decent living standards.

Achieving net zero emissions is challenging for a developing country like India where millions of power and low income households will require energy and infrastructure to achieve decent living standards. The transition is not going to be easy.

While low-emissions development may create new job opportunities, some jobs may be lost. For example, coal is the cheapest source of energy for India. A large number of people in the country's coal districts depend on mines and power plants. These are among the poorest districts in the country, with a weak infrastructure and a population with a low level of literacy. A transition away from coal will be extremely challenging, both in terms of the jobs the coal sector provides and the revenue this generates.

A shift towards cleaner technologies is happening. However, a sustainable future for 1.56 billion Indians cannot be achieved without financial and technology support from the developed countries.

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