

Climate change: The heat is on

Dr Indu K Murthy, Jul 14, 2020

The temperature in the Indian subcontinent is set to increase 4 degree Celsius or more by the turn of the century, with frequent heatwaves persisting over longer durations. This and more such acute insights were revealed in a recent study released by the Ministry of Earth Sciences, Government of India. Based on a thorough assessment of the observed changes and future projections of temperature, rainfall, sea level, and extreme weather events such as droughts, floods, and heatwaves, the report is a clarion call for immediate action.

While mean annual and summer monsoon rainfall is projected to increase, the variability is also projected to rise—with more frequent and intense heavy rainfall events and extended dry spells. The report also predicts that sea levels will rise by approximately 300 mm by the twenty-first century, relative to the average over 1986-2005. The rising sea levels will erode and reshape the coastline, impacting fisheries and about 14 million people with gainful employment from fisheries. While the past trends in temperature, rainfall, extreme events and sea-level rise in the Indian region are a revelation, the future projections are a cause of concern, as risks are likely to be exacerbated.

Manifold risks

The changes in climate pose multiple risks to natural ecosystems such as forests, mangroves, and wildlife and also to land, freshwater. They also threaten socioeconomic systems such as agriculture, animal husbandry and infrastructure. With increased rainfall variability in a country that is predominantly rainfed, 52% of cropped area runs the risk of decline in crop production.

Similarly, increased intensity and frequency of heavy rainfall or drought events pose a risk to agriculture and livestock. It can further soil erosion and land degradation, the latter being a grave issue with 30% of the land already degraded in India. Prolonged wet conditions have implications for human health, with the chances of infectious diseases, particularly water-borne, likely to increase. That aside, different categories of infrastructure—power, transport, road, dams, buildings—will be adversely impacted by climate-induced risks and hazards.

The report reinforces that climate change is a reality and will worsen in the decades to come if business-as-usual continues. It is time to mobilise action targeted towards environmental conservation, climate-proofing of assets, improving the resilience of natural and man-made systems, and transitioning to low-carbon pathways—all of which can contribute to achieving the Nationally Determined Contribution targets and ultimately the Sustainable Development Goals.

Policies and programmes that synergistically promote development that is climate-resilient and sustainable could be the game-changer. These could span the transition from fossil fuel-intensive energy to renewables; climate-proofing of future infrastructure investments;

promotion of green infrastructure and nature-based solutions such as mangroves that could serve as green barriers to floods; conservation and preservation of nature reserves for carbon sinks and planning green spaces in urban systems.

The above strategies can synergistically promote climate change mitigation and adaptation, and at the same time provide multiple co-benefits. Promotion of biodiversity, reducing land degradation, land reclamation through afforestation, reduced energy and water consumption by the creation of urban green spaces and green infrastructure due to reduced air conditioning needs, improved air quality, and reduced urban flooding are some such benefits.

In addition to the above strategies, enhanced penetration of climate information services that are already available and generation of improved climate information to cater to all sectors is needed. This is particularly important for natural resource sectors, such as agriculture and fisheries to help cope with adverse effects of climate change, thereby reducing disaster-related losses, safeguarding assets, maintaining income and improving livelihoods.

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