



India and the Sixth Assessment Report

This editorial is based on [“The Heat Is On”](#) which was published in Indian Express on 02/03/2022. It talks about the India-specific analysis of the second part of IPCC’s sixth assessment report.

For Prelims: Sixth Assessment Report of IPCC, Climate Change, Himalayan Ecosystem, Urbanisation, Black Carbon, Net Zero Emissions, Climate Financing.

For Mains: IPCC Sixth Assessment Report - India-specific analysis, urbanisation and climate change interlinkage, impact of climate change on India’s coastal areas.

The [Intergovernmental Panel On Climate Change \(IPCC\)](#) released the [second of its three-part report in the 6th assessment report](#), which focuses on the impacts of climate change and its implications on vulnerability and adaptation.

With global **warming of 1.1°C**, some impacts of climate change are already locked in, causing disruptions in the lives of billions of people. India, which has almost all the world’s agro-ecological zones, is not spared. **The study’s India-related findings are sobering.**

Dealing with the climate problem will require correcting past mistakes such as ignoring hydrology while planning towns and cities, neglecting flood alert systems, and encouraging water-guzzling crops.

What does the Second Part of the Report reveal for India?

- The **Indian population is one of the most vulnerable** and exposed to severe climate-induced risks and disasters.
- The **three major climate change hotspots** are the **semi-arid and arid regions**, the [Himalayan ecosystem](#) and **coastal zones**.
- About half of India’s landmass is arid and semi-arid, prone to impacts of rising temperatures.
- It has found that climate change is **increasing vector-borne and water-borne diseases** such as [malaria](#) or [dengue](#), particularly in **sub-tropical regions of Asia**.
 - It has also said deaths related to [circulatory, respiratory, diabetic and infectious diseases](#), as well as infant mortality, are likely to increase with a rise in temperature.
- The **sea-level extremes** that previously occurred once in 100 years **could happen more frequently**.

How Urbanisation is linked to Climate Vulnerability?

- **Urbanisation-Climate Interlinkage:** [Urbanisation](#) processes have **generated vulnerability and exposure** combined with climate change hazards, this has driven the urban risk and impacts.
 - Life-threatening climatic conditions will arise from **extreme heat and humidity**.
 - Cities in India will experience more heat stress, urban floods and other **climate-induced**

hazards such as cyclones.

- Roughly a quarter of Indians now live in urban areas, in the next 15 years, this figure is expected to reach 40%.
- The combination of **global warming and population growth** in already-warm cities in India is the **primary driver of increased heat exposure**.
- **Consequences:** Older adults, **people with comorbidities** and **dwellers** living without much access to hygienic environments will be at a **much higher risk in urban areas**.
 - A higher urban population accompanied with high climate vulnerability in urban areas implies **heat-induced labour productivity loss, resulting in economic impacts**.
 - The current adaptation measures **largely focus on knee-jerk solutions** and disaster management which has to move towards long-term planning for resilient cities.
 - Sea level rise, increase in tropical cyclone storm surge and higher intensities of rainfall will lead to larger **probabilities of cities getting flooded**.
 - **Coastal megacities** (Mumbai, Chennai, Kolkata, Visakhapatnam), smaller **coastal towns and villages** and the [Andaman and Nicobar Islands](#) are at a **greater risk of being flooded**.

What about the Impact on the Himalayas?

- Urbanisation in the Himalayas is sprawling small towns with populations under a lakh. The **unplanned urbanisation is causing significant changes in land use** and land cover.
- **Increased rainfall variability** is one of the climate-induced impacts on the physical environment. **Heavy rains are becoming a norm** and are **leading to more landslides**.
- Global warming has increased the average temperature in the Himalayas causing **glacier melt and subsequent change in hydrological regimes** of the region.
- Glacial decline has also been exacerbated by [black carbon](#) which is a consequence of [stubble burning](#), brick kilns, polluting industries.
- Most towns in the Himalayan region meet their water needs using supplies from springs, ponds, and lakes.
 - Urbanisation in the Himalayas is **reducing the cover of these water bodies** thus making **water insecurity** in hill towns the order of the day.

What Steps Can Be Taken?

- **Managing Flood Impacts:** The current adaptation measures to manage flooding impacts such as **stormwater management, green infrastructure, and sustainable urban drainage systems** must be overhauled to prepare for flooding in the future.
 - The report identifies that flooding will intensify in the Ganga and the Brahmaputra basins and crop production systems will be disrupted by droughts and water scarcity.
 - Policymakers will have to find ways to **ensure that the country's food security is not adversely affected**.
 - They will have to **cushion the most vulnerable from the impacts of inflation** and create avenues to offset climate-induced livelihood losses.
- **Adaptation Policies at Local Level:** Better adaptation policies could lead to a safer and more sustainable future. The economic benefits of adaptation are a strategy for **local institutions to support adaptation action**.
 - Surat stands out as a case where **city-level political leadership** has supported adaptation action beyond national policy.
- **Passive Cooling to Reduce Urban Heat Islands:** Passive cooling technology, a widely-used strategy to **create naturally ventilated buildings**, can be a vital alternative to address the urban heat island for residential and commercial buildings.
 - The IPCC report cites **ancient Indian building designs that have used this technology, which could be adapted to modern facilities** in the context of global warming.
- **Making Urban India Water-Secure:** The report cites the example of Bengaluru, where Indian communities have traditionally managed a network of water tanks of immense ecological importance.
 - However, urban development has increasingly threatened this blue network in the last half-century.

- The **restoration of the blue network** offers a more sustainable and socially just alternative for managing water resources.
- **Climate Adaptation Fund:** India and other developing countries have for long and correctly argued that developed countries must accept their historical culpability for climate change. The **IPCC has again made a call for “equitable adaptation”** efforts across the world.
 - Mere commitments to the **net zero emissions** or increasing the share of renewable energy might not be just enough vis-a-vis the developed countries.
 - They will also have to do more or commit more in terms of **climate financing, ensuring better flow of finance to adaptation** to taking into consideration the issues like loss and damage of resources.

Drishti Mains Question

‘The India-related findings of the IPCC’s Sixth Assessment Report are sobering. The Himalayan ecosystem and coastal zones are the major climate change hotspots in India’. Discuss.