



IPCC: Part Two of Sixth Assessment Report

For Prelims: Sixth Assessment Report of Intergovernmental Panel on Climate Change (IPCC), climate change, Non-Communicable Diseases, Kyoto Protocol, GreenHouse Gases

For Mains: Sixth Assessment Report of Intergovernmental Panel on Climate Change (IPCC), Climate Change, Adaptation Measures, Impact of Climate Change

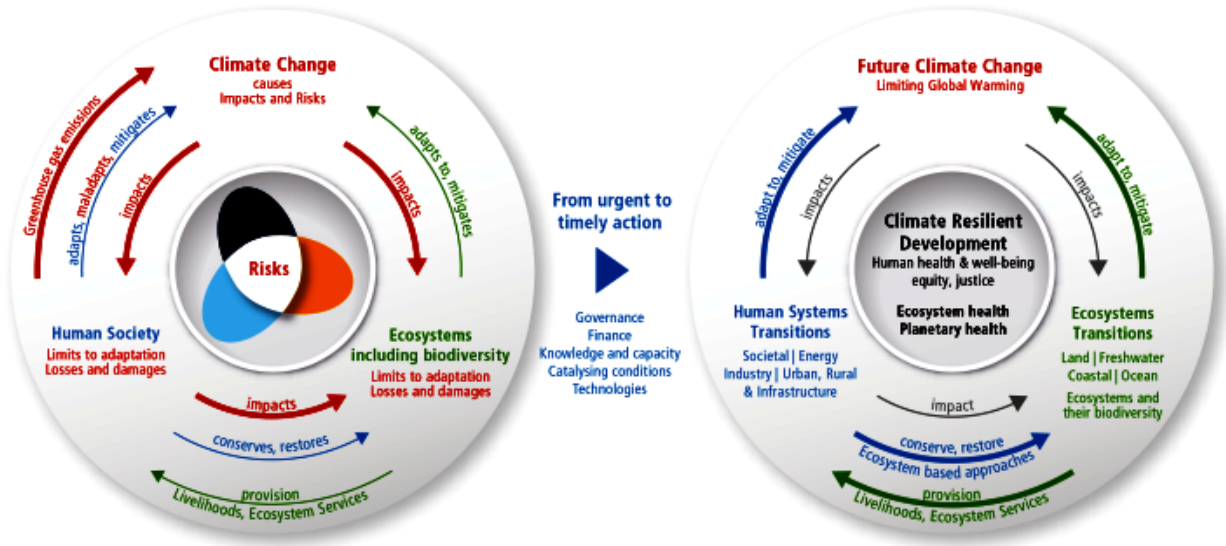
Why in News?

Recently, the [Intergovernmental Panel on Climate Change \(IPCC\)](#), released the second part of its **sixth assessment report**. This second part of the report is **about climate change impacts, risks and vulnerabilities, and adaptation options**.

- The [first part of this report](#), on the **physical science of climate change in 2021**. It had warned that **1.5 degree Celsius warming** was likely to be achieved before 2040 itself.
- The **third and final part of the report**, which will look into the **possibilities of reducing emissions, is expected to come out in April 2022**.

What are Important Observations of the Report?

- **Population at Risk:** Noting that over **3.5 billion people**, over **45% of the global population**, were living in areas highly vulnerable to climate change.
- **Indian Scenario:** The report identifies India as one of the **vulnerable hotspots**, with several regions and **important cities facing very high risk of climate disasters such as flooding, sea-level rise and heat-waves**.
 - For example, **Mumbai** is at high risk of sea-level rise and flooding, while Ahmedabad faces serious danger of heat-waves.
- **Complex, Compound and Cascading Risks:** The latest report warns that **multiple disasters induced by climate change** are likely to emerge in different parts of the world in the next two decades.
 - Multiple climate hazards will occur simultaneously, and **multiple climatic and non-climatic risks** will interact, resulting in compounding overall risk and risks cascading across sectors and regions.
- **Near to Long-term Risks:** Even if adequate efforts are made to keep the global rise in temperatures within **1.5 degree Celsius from pre-industrial times**.
 - Even temporarily exceeding this warming level will result in **additional severe impacts, some of which will be irreversible**.
 - The magnitude and rate of climate change and associated risks depend strongly on **near-term mitigation and adaptation actions**.
 - Projected adverse impacts and related losses and damages escalate **with every increment of global warming**.
- **Coupled System:** There is a strong focus on the interactions among the coupled systems climate, **ecosystems (including their biodiversity) and human society**.



- **Regional Variation:** Vulnerability of ecosystems and people to climate change differs **substantially among and within regions.**
 - These are driven by patterns of intersecting **socio-economic development, unsustainable ocean and land use, inequity, marginalization, historical and ongoing patterns of inequity such as colonialism, and governance.**
- **Health Impacts of Climate Change:** 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.
 - Increasing frequency of extreme weather events like heatwaves, flooding and drought, and even air pollution was contributing to **under-nutrition, allergic diseases and even mental disorders.**
- **Current Adaptation and its Benefits:** Progress in adaptation planning and implementation has been observed across all sectors and regions, generating multiple benefits.
 - However, **adaptation progress is unevenly distributed** with observed adaptation gaps.
 - Many initiatives prioritise immediate and nearterm climate risk reduction which reduces the opportunity for transformational adaptation.

Adaptation Risks & Strategies

System transitions	Representative key risks	Climate responses ¹ and adaptation options
Land and ocean ecosystems	Coastal socio-ecological systems	Coastal defence and hardening Integrated coastal zone management
	Terrestrial and ocean ecosystem services	Forest-based adaptation ² Sustainable aquaculture and fisheries Agroforestry Biodiversity management and ecosystem connectivity
	Water security	Water use efficiency and water resource management
	Food security	Improved cropland management Efficient livestock systems
Urban and infrastructure systems	Critical infrastructure, networks and services	Green infrastructure and ecosystem services Sustainable land use and urban planning Sustainable urban water management
Energy systems	Water security	Improve water use efficiency
	Critical infrastructure, networks and services	Resilient power systems Energy reliability
Cross-sectoral	Human health	Health and health systems adaptation
	Living standards and equity	Livelihood diversification
	Peace and human mobility	Planned relocation and resettlement Human migration ³
	Other cross-cutting risks	Disaster risk management Climate services, including Early Warning Systems Social safety nets Risk spreading and sharing

- **Gaps in Adaptation:** The report also highlights large gaps in the adaptation actions that are being taken and the efforts that are required. It says these gaps are a result of “**lack of funding, political commitment, reliable information, and sense of urgency**”.

- Adaptation is essential to reduce harm, but if it is to be effective, it **must go hand in hand with ambitious reductions in greenhouse gas emissions** because with increased warming, the effectiveness of many adaptation options declines.
- **Need for Holistic Changes:** It is clear now that minor, marginal, reactive or incremental changes won't be sufficient.
 - **In addition to technological and economic changes**, shifts in most aspects of society are required to overcome limits to **adaptation, build resilience, reduce climate risk to tolerable levels, guarantee inclusive, equitable and just development** and achieve societal goals without leaving anyone behind.

What is the Intergovernmental Panel on Climate Change?

- It is the **international body for assessing the science related to climate change**.
- It was set up in 1988 by the [World Meteorological Organisation \(WMO\)](#) and [United Nations Environment Programme \(UNEP\)](#) to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.
- IPCC assessments **provide a scientific basis for governments at all levels to develop climate related policies**, and they underlie negotiations at the UN Climate Conference - the [United Nations Framework Convention on Climate Change \(UNFCCC\)](#).

What is the Assessment Report of IPCC?

- The Assessment Reports, the **first of which had come out in 1990**, are the most **comprehensive evaluations of the state of the earth's climate**.
 - Every few years (about 7 years), the IPCC produces assessment reports.
- **Hundreds of experts** go through every available piece of relevant, published scientific information to prepare a common understanding of the changing climate.
- The four subsequent assessment reports, each thousands of pages long, came out in **1995, 2001, 2007 and 2015**.
 - These have formed the basis of the **global response to climate change**.
- Over the years, each assessment report has built on the work of the previous ones, **adding more evidence, information and data**.
 - So that most of the conclusions about climate change and its impacts have far greater clarity, certainty and wealth of new evidence now, than earlier.
- It is these negotiations that have produced the [Paris Agreement](#), and previously the [Kyoto Protocol](#).
 - The Paris Agreement, negotiated on the basis of the [Fifth Assessment Report](#).
- The Assessment Reports - by three working groups of scientists.
 - **Working Group-I** - Deals with the scientific basis for climate change.
 - **Working Group-II** - Looks at the likely impacts, vulnerabilities and adaptation issues.
 - **Working Group-III** - Deals with actions that can be taken to combat climate change.

[Source: IE](#)