



# drishti

## Special Report on Climate Change: IPCC

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The Intergovernmental Panel on Climate Change (IPCC) made public **'The Special Report on the Ocean and Cryosphere in a Changing Climate'** which underlined the dire changes taking place in oceans, glaciers, and ice-deposits on land and sea at the United Nations Climate Summit underway in the United States.

- The published report is the last in a series of **three reports on specific themes** that IPCC has published namely:
  - **Global Warming of 1.5° C:** A special report, which was commissioned to specifically explore the **scientific feasibility of the 1.5°C** goal set in the Paris Agreement, on global warming.
  - **Land and climate change:** The report focuses on the **contribution of land-related activities to global warming** i.e how the different uses of land affect the emission of greenhouse gases.
- The report also updates the **IPCC's 5<sup>th</sup> Assessment Report** — and summarises the disastrous impacts of warming based on current projections of global greenhouse gas emissions.

### IPCC's 5<sup>th</sup> Assessment Report

- The IPCC prepares comprehensive Assessment Reports about the state of scientific, technical and socio-economic knowledge on climate change, its impacts and future risks, and options for reducing the rate at which climate change is taking place.
- However, IPCC does not conduct its own research.
- The Assessment Report released by IPCC in **2014** was the **5<sup>th</sup>** in a series of such reports.
- **6<sup>th</sup> Assessment Report of IPCC** is expected to be released in **2022**.

### Key Findings of the Report

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- Over the 21<sup>st</sup> century, the ocean is projected to **transition to unprecedented conditions** with increased temperatures, further **ocean acidification, marine**

**heatwaves and more frequent extreme El Niño and La Niña events.**

- **Ocean Warming:**

- Global ocean has warmed unabated since 1970 and has taken up more than **90% of the excess heat** in the climate system.
- Since 1993, the **rate of ocean warming** and Marine heatwaves have very likely **doubled in frequency** since 1982 and are increasing in intensity.

- **Global Mean Sea-Level:**

- It has **increased by 16 cm** between 1902 and 2015, and that the rate of increase had doubled of late.
- Between 2006 and 2015, the global mean sea level recorded an average rise of **3.6 mm per year**, which was more than double of 1.4 mm per year recorded in the first 90-year-period of the 20th century.
- **Sea-level rise is not globally uniform and varies regionally.** Regional differences, within 30 % of global mean sea-level rise, result from land ice loss and variations in ocean warming and circulation

- **The Melting of Glaciers:**

- Between 2006 and 2015, the **Greenland ice sheet** lost ice-mass at an average rate of 278 billion tonnes every year (e.g. **Okjokull glacier of Iceland**), which was enough to result in a global sea-level rise of 0.8 mm per year. During the same period, **the Antarctic ice sheet** lost a mass of 155 billion tonnes on an average every year.
- Snow over outside of these two poles, like the **glaciers in the Himalayas**, together lost an average of 220 billion tonnes of ice every year.
- The melting glaciers are the **dominant source of sea-level rise, exceeding the effect of thermal expansion** of ocean water (due to rising temperatures).

- Since the mid-20<sup>th</sup> century, the **shrinking cryosphere** has led to predominantly negative impacts on food security, water resources, water quality, livelihoods, health, and well-being, as well as the culture of human societies, particularly for Indigenous peoples.

## **Intergovernmental Panel on Climate Change (IPCC)**

- The Intergovernmental Panel on Climate Change (IPCC) is the international body for assessing the science related to climate change.
- It was set up in **1988 by the World Meteorological Organization (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).

**Source: TH**