



## Provisional State of Global Climate Report, 2022

**For Prelims:** Provisional State of Global Climate Report, World Meteorological Organization, greenhouse gases

**For Mains:** Issues related to increasing disaster and steps need to be taken

### Why in News?

Recently, the [World Meteorological Organization \(WMO\)](#) released the provisional State of the Global Climate report, 2022.

- The full and final report is expected to be published in April, 2023.

### What is the WMO State of the Global Climate report?

- The report is **produced on an annual basis**, complementing the most recent long assessment cycle provided by the [sixth IPCC Assessment Report](#).
- The report provides an authoritative voice on the current state of the climate using key climate indicators and reporting on extreme events and their impacts.

### What are the Highlights of the Report?

- **Increase in Concentration of Greenhouse Gases:**
  - The concentrations of three main [greenhouse gases](#), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and Nitrous oxide (NO<sub>2</sub>), were all at record highs in 2021.
  - The **emissions of methane, which is 25 times more potent than carbon dioxide** in causing global warming, in fact, increased at the fastest pace ever.
    - At the [climate change conference in Glasgow](#), countries had pledged to cut **global methane emissions** by at least 30% by the year 2030.
- **Temperature:**
  - The **global average temperature in 2022 is estimated to be about 1.15 °C above** the 1850-1900 average.
  - 2015 to 2022 are likely to be the **eight warmest years on record**.
  - [La Niña](#) (a cooling of sea-surface waters in the equatorial Pacific Ocean) conditions have dominated since late 2020 and are expected to continue until the end of 2022.
    - **Continuing La Niña** has kept **global temperatures relatively low for the past two years** - albeit higher than the last significant La Niña in 2011.
- **Glaciers and Ice:**
  - In the European Alps, **glacier melt records were shattered in 2022**. Average thickness losses of between 3 and over 4 metres were measured throughout the Alps, substantially more than in the previous record year 2003.

- In Switzerland, **6% of the glacier ice volume was lost between 2021 and 2022**, according to initial measurements.
- For the first time in history, **no snow outlasted the summer season even at the very highest measurement sites** and thus no accumulation of fresh ice occurred.
- **Sea Level Rise:**
  - **Global mean sea level has risen by an estimated  $3.4 \pm 0.3$  mm per year** over the 30 years (1993-2022) of the satellite altimeter record.
  - The rate has **doubled between 1993-2002 and 2013-2022** and sea level increased by about 5 mm between January 2021 and August 2022.
- **Ocean Heat:**
  - The **ocean stores around 90% of the accumulated heat** from human emissions of greenhouse gases.
  - The **upper 2000m of the ocean continued to warm to record levels in 2021**.
  - Overall, **55% of the ocean surface experienced at least one marine heatwave** in 2022.
  - In contrast only 22% of the ocean surface experienced a marine cold spell. Marine heatwaves are becoming more frequent, in contrast to cold waves.
- **Extreme Weather:**
  - In East Africa, **rainfall has been below average in four consecutive wet seasons**, the longest in 40 years, with indications that the current season could also be dry.
  - Record breaking rain in July and August, 2022 led to extensive flooding in Pakistan.
    - The **flooding came hard on the heels of an extreme heatwave** in March and April in both India and Pakistan.
  - **Large parts of the northern hemisphere were exceptionally hot and dry.**
    - China had the most extensive and long-lasting heatwave since national records began and the second-driest summer on record.
  - Large parts of **Europe sweltered in repeated episodes of extreme heat.**
    - The United Kingdom saw a new national record on 19th July, 2022 when the temperature topped more than 40°C for the first time.

## What are the Steps taken to tackle Climate change?

- **National:**
  - **NAPCCC:**
    - To counter the emerging threats from climate change, India released its [National Action Plan to Combat Climate Change \(NAPCC\)](#). It has 8 sub missions including **National Solar Mission**, National Water Mission etc.
  - **India Cooling Action Plan:** It provides an integrated approach towards cooling and related areas including reduction in the cooling demand. This would help reduce emissions thereby combating global warming.
- **Global:**
  - **Paris Agreement:**
    - It seeks to keep the rise in global temperatures **“well below” 2°C from pre-industrial times**, while “pursuing efforts” to limit it to 1.5°C.
  - **UN SDGs:**
    - These are 17 broad goals for achieving sustainable development in the society. Amongst them **Goal 13 exclusively focuses on tackling climate change.**
  - **Glasgow Pact:**
    - It was finally adopted by 197 parties in 2021 during the COP26 negotiations.
      - It has emphasized that stronger action in the current decade was most **critical for achieving the 1.5-degree target.**

## What is the World Meteorological Organization (WMO)?

- The WMO is an **intergovernmental organization** with a membership of 192 Member States and Territories.
  - India is a member of WMO.
- It originated from the **International Meteorological Organization (IMO)**, which was established after the 1873 Vienna International Meteorological Congress.

- Established by the ratification of the WMO Convention on 23rd March 1950, WMO became the specialized agency of the United Nations for meteorology (weather and climate), operational hydrology and related geophysical sciences.'
- WMO is **headquartered in Geneva, Switzerland.**

## Way Forward

- **There is a need to focus the efforts on bold policies and solutions** that can quickly transform the way the resources are produced and consumed.
- People and partnerships have to be the **central approach**, whether it is to create new jobs, provide more access and affordability for everyone and to build a cleaner and greener living environment.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### Prelims

**Q1. "Momentum for Change: Climate Neutral Now" is an initiative launched by (2018)**

- (a) The Intergovernmental Panel on Climate Change
- (b) The UNEP Secretariat
- (c) The UNFCCC Secretariat
- (d) The World Meteorological Organisation

**Ans: (c)**

**Q2. Which one of the following is not related to the United Nations? (2010)**

- (a) Multilateral Investment Guarantee Agency
- (b) International Finance Corporation
- (c) International Centre for Settlement of Investment Disputes
- (d) Bank for International Settlements

**Ans: (d)**

### Mains

**Q. Assess the impact of global warming on the coral life system with examples. (2019)**

**Q. Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997. (2022)**

**Source: IE**