

State of the Global Climate in 2018 - WMO Report

Why in news?

The World Meteorological Organization (WMO), the UN's weather agency, released its annual report, State of the Global Climate in 2018.

What are the highlights?

- **Climate indicators** - The report highlighted the worsening impact of climate change across the world.
- It showed how the world was degenerating on key climate indicators.
- These include the following:
 - i. sea levels rose at a record pace last year
 - ii. vast ocean stretches continued to become acidic
 - iii. very high land and ocean temperatures over the last 4 years
 - iv. most monitored glaciers are retreating
- **Emissions** - All of the above are linked to the rising anthropogenic carbon dioxide (CO₂) emissions.
- The CO₂ levels, were at 357 parts per million (PPM) when the WMO statement was first published in 1994.
- It kept rising to reach 405.5 PPM in 2017, and is expected to increase even further in 2018 and 2019.
- **Extreme weather events** - WMO underlined the extreme weather events experienced all over the world in 2018.
- This included the severe flooding in Kerala in August 2018, which led to economic losses estimated at \$4.3 billion.
- Rainfall in Kerala in August was 96% above the long-term average.
- A cold wave also affected parts of India; 135 deaths in just 10 ten days in January in Uttar Pradesh were attributed to cold.

HOW CLIMATE CHANGE PLAYED OUT IN 2018

SEA LEVELS RISE

Global Mean Sea Level for 2018 was around 3.7 millimetres higher than in 2017, and the highest on record

OCEAN ACIDIFICATION

In the past decade, the oceans absorbed around 30% of anthropogenic CO₂ emissions. Absorbed CO₂ reacts with seawater and changes the pH of the ocean. This process is known as ocean acidification, which can affect the ability of marine organisms

DEPLETING ARCTIC ICE

Arctic sea-ice extent was well

\$4.3 bn

The WMO report identified the floods in Kerala as one of the main indicators of extreme weather events due to climate change, leading to economic losses of \$4.3 billion

below average throughout 2018 and was at record-low levels for the first two months of the year. The Greenland ice sheet has been losing ice mass nearly every year over the past two decades

What are the notable climate change impacts?

- **Warming** - 2018 was ranked among the top 10 warmest years in Africa, Asia, Europe, Oceania and South America.
- Sea-surface waters in a number of oceans were unusually warm in 2018, including much of the Pacific.
- The greatest rates of ocean warming were seen in the southern ocean, with warming reaching the deepest layers.
- In November 2017, a marine heat wave developed in the Tasman Sea (in South Pacific Ocean between Australia and New Zealand) and persisted until February 2018.
- Sea-surface temperatures in the Tasman Sea exceeded 2 °C above normal, setting a record.
- **Ocean acidification** - As ocean acidification rises, marine biodiversity is at a major risk.
- Since the middle of the last century, there has been an estimated 1%-2% decrease in the global ocean oxygen inventory.
- Hundreds of sites are known to have experienced oxygen concentrations that impair biological processes or are lethal for many organisms.
- **Sea level** - The global mean sea level for 2018 was around 3.7 mm higher than in 2017 and the highest on record.
- Rapid ice mass loss from ice sheets is the main cause of the global mean sea-

level rise.

- **Arctic sea-ice extent** was significantly below average throughout 2018.
- The report referred to monitoring of glacier mass-balance by the World Glacier Monitoring Service for 19 mountain regions.
- It noted that 2017-18 was the 31st consecutive year of negative mass balance for the glaciers monitored.
- This refers to glaciers losing more mass than they receive.
- **Rainfall** - Although weak La Nina conditions were noticed at the beginning of 2018, the effect on precipitation was the opposite of what had been expected.
- E.g. several floods occurred in California, an unexpected event during La Nina
- The Indian monsoon brought less rainfall than normal to the Western Ghats and the eastern parts of the Himalayas, but higher than normal in the Western Himalayas.
- The all-India rainfall for June to September 2018 was around 9% below the long-term average.
- In all, the report calls for urgent support to poor people and countries in tackling climate impacts that are forcing millions out of their homes.
- Rich countries must lead the transition to a greener economy and assist developing countries to follow suit.

Source: Hindustan Times

