



# Events of Extreme Weather

## Why in News

People around the world have been doubly hit by the [Covid-19 pandemic](#) and **extreme weather events** which experts say have been **fuelled by** [climate change](#).

## Key Points

### ▪ Recent Extreme Weather Events:

- The **unprecedented** [heat wave](#) that drove temperatures across **Canada and parts of the United States to a record high**, causing hundreds of deaths between June 25 to 30.
- The recent **floods in Germany** that killed over 180 people in the country.
  - **Floods** have also been reported across **several Asian countries, in China, India and Indonesia**.
  - **Cyclones** [Tauktae](#) and [Yaas](#) that hit India's west and east coasts respectively.

### ▪ Some Causes of Extreme Weather Events:

#### ◦ Extreme Temperature:

- The **temperature of the Earth is rising every year** and increasing temperature and extreme sunshine on top of it **creates a low-pressure system**.
- Due to which the hurricanes and other tropical storms get their way to start.

#### ◦ High Atmospheric Winds:

- The jet stream is found where the **cold air from Earth's poles meets with warm tropical air**.
- These winds help to continue and control the weather system from west to east in the northern hemisphere and from east to west in the southern hemisphere.
- Sometimes these winds bring unpleasant weather with them which may lead to the formation of a tornado.

#### ◦ When Pressure Systems Meet:

- When **too cold high-pressure systems** meet with **too warm low-pressure systems**, the **chances of extremely high waves on sea surface** increases.
- The too cold high-pressure systems originate from sub-polar land whereas too warm low-pressure systems originate from temperate seas.

#### ◦ Improper Weather Systems:

- The weather systems (such as air masses, fronts, etc.) keep on moving in a proper way which helps to maintain the weather conditions in a smoother way.
- When the weather conditions come across any disturbance in between, it **creates disasters**.

#### ◦ Climate Change:

- The world temperature has increased quite high from the past few decades and

even keeps on changing year after year.

- One of the **big reasons** for the increase in Earth's temperature **is the level of CO<sub>2</sub>**.
- As the **CO<sub>2</sub> is increasing in the atmosphere**, the temperature of the earth is also increasing simultaneously.
- **Global Warming:**
  - As the world temperature is increasing due to global warming simultaneously the effects of it are also increasing.
  - Global warming is contributing to **intensifying heatwaves**.
  - Global warming also **boosts the amount of water vapor in the atmosphere** which may lead to causes of severe weather like heavy rainfall, heavy snowstorm, etc.
- **Concerns:**
  - The rise in **average global temperature** is linked with **widespread changes in weather patterns**.
    - The **rising average global temperature** is making **heavy rainfall more likely**.
    - **Warmer air carries more moisture**, meaning that more water will be released eventually.
  - **Extreme weather events** like **heat waves and extreme rainfall** are likely to become more frequent or more intense with **rising anthropogenic climate change**.
    - The Theory of **Anthropogenic Climate Change** is that **humans are causing most of the current changes** to climate by burning fossil fuels such as **coal, oil, and natural gas**.
  - **Temperatures at the Earth's poles** are rising at two to three times the temperature at the equator.
    - This weakens the **jet stream of the mid-latitudes**, situated over Europe.
    - During summer and autumn, the weakening of the jet stream has a causal effect resulting in slower-moving storms.
    - This can result in more severe and longer-lasting storms with increased intensity.
  - Also, according to a study, **human-induced global warming** has contributed to the increased frequency and intensity of **cyclonic storms over the Arabian Sea**.
- **Related Initiatives:**
  - **[National Action Plan on Climate Change \(NAPCC\)](#)**
  - **[India's Intended Nationally Determined Commitments \(INDC\)](#)** under Paris Climate Deal.

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