



## UNPRECEDENTED CLIMATE EXTREMES - GS III MAINS

Q. Global warming and climate change present a multifaceted crisis that affects every aspect of life on Earth. Discuss the measures needed to be taken to protect our life on Earth. (15 marks, 250 words)

**News:** *Point of no return*

### What's in the news?

- According to the Food and Agricultural Organisation (FAO) of the United Nations, human activities have led to the unprecedented loss of one-third of Earth's forests, marking a historic event without parallel in the planet's 4.54-billion-year history.

### Unprecedented Climatic Extremes:

#### 1. Record-breaking Warmth and Wetness:

- According to the US National Oceanic and Atmospheric Administration (NOAA), January 2024 marked the warmest month in India since 1850, with global surface temperatures surpassing the 20th-century average by 1.27°C.
- Additionally, it was the second wettest month on record. Antarctica's sea ice extent also reached the fourth-lowest level.

#### 2. Continuation of Trends:

- The warming trends observed in January 2024 are consistent with patterns observed since June 2023, possibly influenced by El Niño phenomena.

#### 3. Global Environmental Challenges:

- A multitude of environmental milestones, including record-high atmospheric CO<sub>2</sub> levels, increased methane density, heightened plastic pollution, and unprecedented biodiversity loss, underscore the severity of the current environmental crisis.

### Impacts of Unprecedented Climate Extremes:

#### 1. Environmental Degradation:

##### a. Deforestation and Wildlife Decline:

- Human activities have led to the depletion of one-third of the world's forests, significantly impacting biodiversity.
- Wildlife populations have plummeted by 69% in the last five decades due to habitat loss.

##### b. Land and Ocean Degradation:

- Approximately 75% of Earth's land surfaces have been degraded, while ocean pollution, including plastics and chemicals, has made oceans 30% more acidic.

##### c. Extreme Weather Events:



- Recent occurrences, such as heatwaves in Europe, floods in China, landslides in India, and wildfires in Hawaii, highlight the intensification of extreme weather events globally.

## 2. Agricultural Challenges:

### a. Soil Erosion and Desertification:

- Unsustainable rates of soil erosion threaten fertile land, contributing to desertification, particularly in grasslands.

### b. Reduction in Plant Genetic Diversity:

- Loss of plant genetic diversity compromises resilience against pests and diseases, impacting agricultural productivity.

### c. Impacts on Crop Yields:

- Erratic weather patterns and extreme heat disrupt crop growth, leading to decreased agricultural productivity.

## 3. Health Implications:

### a. Increase in Vector-borne Diseases:

- Warmer temperatures expand the habitat range for disease vectors like mosquitoes and ticks, facilitating the spread of diseases such as Zika and Lyme disease.

### b. Direct Health Risks:

- Heat stress and poor air quality weaken the immune system, increasing susceptibility to illnesses and reducing vaccine effectiveness.

## 4. Social and Economic Impacts:

### a. Food Insecurity:

- Extreme weather events can devastate farmlands, leading to significant drops in food production, particularly for staple crops like corn and wheat.

### b. Migration of Pests:

- Warmer conditions contribute to the proliferation of pests that harm food crops, potentially causing agricultural crises.

Global warming and climate change present a multifaceted crisis that affects every aspect of life on Earth. Urgent and comprehensive global action is imperative to mitigate and adapt to these challenges.