

## General Studies-3; Topic – Conservation, environmental pollution and degradation, environmental impact assessment

### Heat Waves in India

#### 1) Introduction

- Heat wave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the pre-monsoon (April to June) summer season.
- According to Indian Meteorological Department, Heat wave is considered if maximum temperature of a station reaches at least 40°C or more for Plains, 37°C or more for coastal stations and at least 30°C or more for Hilly regions.

#### 2) Present Status

- Extreme heat waves will become more common worldwide because of rising average global temperature.
- There has been an increasing trend of heat-wave in India over the past several years whereby several cities in India have been severely affected.
- The country will likely be among the worst affected by climate change given its weaker health systems and poorer infrastructure.

#### 3) Consequences

- Extreme heat can lead to dangerous, even deadly, consequences, including heat stress and heatstroke.
- Severe heat stroke can lead to multiple organ failure, seizures, and death.
- Children, the elderly and those with pre-existing morbidities are particularly vulnerable.
- Heat wave also cause death of cattle and wildlife besides affecting animals in various zoos in India.
- **Increased exposure to heat can cause**
  - a. A decrease in labour output
  - b. Burden health systems ill-equipped to cope with the effects of heat stress.
  - c. Promote the spread of diseases like cholera and dengue fever across endemic areas.
- **Labour loss**
  - a. Rising temperatures negatively affect workers' output
  - b. The agriculture sector experience largest increase in labour loss.

#### 4) Concerns / Challenges

- As Heat Wave is not a notified disaster at the National level, accurate information and data related to heat wave deaths and illnesses are not available.
- Heat wave is not notified in the list of disasters eligible for relief under National/ State Disaster Response Fund norms.
- National programmes in India exist to address many effects of climate change but there is no strategy to adapt to increasing heat.
- The worst heat wave that the country has ever seen was in 2015 when 2,300 people died.
- Most of the deaths were concentrated in Andhra Pradesh, Telangana, Punjab, Odisha, and Bihar.

#### 5) Way Forward

- Accurate weather prediction and coordinated action plan hold the key to cope with heat waves.
- Making communities both aware of and resilient to the impacts of the changing climate.

- Establish Early Warning System and Inter-Agency Coordination to alert residents on predicted high and extreme temperatures.
- Providing quality healthcare, particularly to the young and elderly, in a timely fashion.
- Necessary action for prevention, preparedness and community outreach to save the lives of the general public, livestock and wild life.
- Improving the forest coverage and green areas.
- Co-ordination among several departments and groups, and training of medical and community workers to prevent and respond to heat-related illnesses.
- Ahmedabad Municipal Corporation (AMC) has adopted a heat action plan which necessitates measures such as building heat shelters, ensuring availability of water and removing neonatal ICU from the top floor of hospitals.
- It has helped bring down the impact of heatwave of vulnerable population.
- Similar action plan should be developed by other states also.
- **Scientific Approach**
  - a. Climate data from the last 15-20 years can be correlated with the mortality and morbidity data to prepare a heat stress index and city-specific threshold.
  - b. Vulnerable areas and population could be identified by using GIS and satellite imagery for targeted actions.