

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

Increasing Heat Waves

1) Introduction

- Climate change is here and affecting our health, with extreme heat in particular also having effects on productivity, food supply and disease transmission, a new global report finds.
- 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) Lancet Countdown: Tracking Progress on Health and Climate Change

- Between 1901 and 2007, India's mean temperature increased by more than 0.5 degree Celsius.
- India experienced an additional 40 million heatwave exposure events in 2016 as compared to 2012, raising concerns over a “dangerous surge” in negative health impacts.
- Over the last two decades, there has been a “marked increase” in the duration of heatwaves in India, as well as the numbers of Indians exposed to heatwaves.
- The country will likely be among the worst affected by climate change given its “weaker health systems and poorer infrastructure.
- These are the findings of a study called Lancet Countdown: Tracking Progress on Health and Climate Change.

3) Heatwaves and Heat Stress

- Heat exposure can lead to heat stress — illnesses which occur as a result of the body’s inability to prevent its temperature rising from beyond a normal range.
- Severe heat stroke can lead to multiple organ failure, seizures, and death.
- Children, the elderly and those with pre-existing morbidities are particularly vulnerable.

4) Socio-economic Impact of Climate Change

- Since 1990, every region of the globe has become steadily more vulnerable to extreme increases of heat.
- **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.
- Climate change threatens to undermine the public health gains of previous decades.
- With each additional tonne of carbon dioxide emitted costs India \$86 — almost double the expense borne by the USA (\$48) and Saudi Arabia (\$47), according to a study.
- IPCC warned that if the global community are not able to limit a temperature rise to 1.5 degrees, climate-related risks to livelihoods, food security, health, water supply and human security will further intensify.

5) Labour loss

- India lost nearly 75 billion hours of labour in 2017 as a result of rising temperatures.
- This made sustained work increasingly difficult and negatively affecting workers’ output.
- The agriculture sector experienced the largest increase in labour loss.

- The “climate-related impacts” on the workforce and economy could be significant for India, with 18 percent of the country’s GDP tied to the agricultural sector.
- An urgent review of occupational health standards and labour laws must be carried out.

6) **Carbon Emissions Exacerbating Premature Deaths**

- India’s dependency on fossil fuels is contributing to high levels of ambient air pollution containing PM 2.5
- Land-based transport is “responsible for a substantial number” of PM 2.5 related deaths.
- However, these emissions can be addressed through improvements to travel infrastructure.
- Cities should tackle the population’s transport needs through public infrastructure, limiting the rise in of car-users and keeping vehicular pollution at bay
- Raising awareness of such pollution-related issues, their associated health risks and climate change overall is the key.
- Increasing regional, non-english media coverage of climate change and health issues across states can further help to stimulate a “state-by-state policy response”.
- Carrying out comprehensive city-level traffic surveys to guide urban infrastructure while promoting safe walking and cycling to reduce the emission load.
- It is of prime importance for India to reduce its carbon emissions and air pollution levels, specifically targeting the use of coal, oil and natural gas.

7) **Way Forward**

- Advance implementation of local Heat Action Plans, plus effective inter-agency coordination is a vital response which the government can deploy in order to protect vulnerable groups.
- This will require identification of “heat hot spots”, analysis of meteorological data and allocation of resources to crisis-prone areas.
- 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.