# Lancet Countdown on Health and Climate Change, 2023: Summary of Key Findings and Policy Implications for India

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## Introduction

The Lancet Countdown's 2023 report provides a comprehensive assessment of the intersection between climate change and global health. In the Indian context, several key findings underscore the urgent need for targeted interventions. Below is a summary of these findings, accompanied by relevant findings and their policy implications for India.

### ❑ Climate change and health in the Indian context

1. Temperature-Related Health Risks

In contrast to 1986–2005, there was a 94% global increase in heatwave days during 2013–22. This led to a 110% rise in heatwave exposure for infants under one (increasing from 4·0 to 8·4 days), and a 96% increase for individuals above 65 years (rising from 5·0 to 9·8 days).

- Key findings for India
  - For adults over 65 years, heat-related mortality at the mid-century (2041-2060) is projected at 128,681 deaths (96,781 – 160,218) under a 2°C scenario and 259,658 deaths (159,013 – 368,616) under a 3.7°C scenario.
  - The expected change in per-person days of heatwave exposure for individuals over 65 years at mid-century compared to 1995-2014 baseline is estimated to be 20.14 days (29.16 - 20.62) under a 2°C scenario and 31.63 days (83.73 - 31.66) under a 3.7°C scenario.
  - Labour hours lost annually due to heat exposure in key sectors (agricultural, construction, manufacturing, and service) increased significantly from 122,000 million hours in 1990- 2000 to 191,000 million hours in 2022.
- Implications for India: India, with its diverse climate zones, faces an elevated risk of heat-related health issues. Vulnerable populations, including the elderly and outdoor workers, are disproportionately affected. This necessitates the implementation of heat action plans, public awareness campaigns, and targeted interventions in high-risk regions.

2. Air Pollution

Exposure to air pollution increases the risk of respiratory and cardiovascular disease, cancer, diabetes, neurological disorders, and adverse pregnancy outcomes. Many of the major sources of GHG emissions also contribute substantially to air pollution. In 2020, anthropogenic PM2.5 was responsible for 3·3 million deaths globally. Use of coal as reduced over a period however, coal still contributed to 53% (640 000) of all deaths attributable to fossil-fuel-derived PM2.5 in 2020

- Key findings for India
  - Attributable deaths due to PM2.5 ambient air pollution increased from 53 deaths per 100,000 in 2005 to 60 deaths per 100,000 in 2020
  - Mortality from exposure to household air pollution in 2020 is estimated at 108 deaths per 100,000. There is significant

variance in deaths attributable to indoor air pollution in rural and urban India with 116 deaths per 100,00 and 97 deaths per 100,000 respectively.

- Implications for India With increasing urbanization and industrialization, India grapples with severe air pollution. Robust health surveillance mechanisms, stricter air quality standards, sustainable transportation policies, and a transition to renewable energy sources are imperative to mitigate the health impacts of air pollution. In addition to ambient air pollution, indoor air pollution continues to remain a significant health burden in India. Policies implementing accelerated shift to less polluting fuels, such as biogas, natural gas, liquefied petroleum gas as well as solar and electric energy can help reduce this health burden.

3. Vector-Borne Diseases

Globally, Dengue cases have doubled every decade since 1990 due to climate change, urbanization, and human movement, putting almost half of the global population at risk. A mechanistic model, considering temperature and precipitation changes, reveals a 28.6% and 27.7% increase in the average R01 for dengue transmission by Aedes aegypti and Aedes albopictus, respectively, from 1951–60 to 2013–22. Similar trends are observed for other arboviruses. Chikungunya transmission by Aedes albopictus increased by 27.7%, and Zika transmission by Aedes aegypti rose by 31.9% during the same period

- Key findings for India

From 1951–60 to 2013–22, the average R0 for dengue transmission increased by 23%. By mid-century, compared to the 1995-2004 baseline, projections indicate a 4% (-8% - 12%) increase under the 2° scenario and an 11% (-1% - 13%) increase under the 3.7° scenario.

- Implications for India Given India's susceptibility to vector-borne diseases, rapid pace of urbanization and the changing climate patterns pose a significant threat. The country must reinforce vector control programs, invest in climate-resilient health systems, and enhance community-based surveillance to curb the spread of diseases.

4. Healthcare Sector Greenhouse Gas Emissions

Quality healthcare demands energy, goods, services, and infrastructure, all contributing to global Greenhouse Gas (GHG) emissions. Despite a 3.7% reduction in absolute emissions from 2019, the global healthcare sector still accounted for approximately 4.6% of GHG emissions in 2020. Furthermore, healthcare-related air pollution and supply chain impacts globally led to an estimated loss of 4 million Disability Adjusted Life Years (DALYs) in 2020.

- Key findings for India

In 2020, Indian healthcare sector is estimated to have contributed 26.29 megatonnes of CO2 equivalents of GHG, which is 18.8 kilograms of per capita carbon footprint.

- Implications for India

Significant investments and efforts to minimize healthcare related emissions will also reduce health-care demand and associated impacts of high emissions. Clean, renewable energy also offers the chance to supply electricity to remote or energy-deficient areas, potentially saving lives and enhancing the health of vulnerable populations. Reaching this objective requires collective action and close collaboration with the energy and finance sectors, civil society, and indigenous communities to implement renewable energy technologies in healthcare delivery and supply chains.

Adaptation, planning, and resilience for health

Scientific evidence unequivocally demonstrates the current and future impact of climate change on health. Addressing the escalating health

risks necessitates enhancing the adaptability of health systems and related support structures. Simultaneously, there is a need to curb GHG emissions to maintain climate change within manageable limits. Successful adaptation requires informed climate change-health risk assessments, well-funded implementation, and ongoing evaluation for continuous improvement.

Key strategies for informed adaptation include

### A. Assessments of Climate Change Impact and Vulnerability for Health

- Mitigation reduces climate change hazards, while adaptation plans address climate risks equitably.
- Plans should be informed by a comprehensive understanding of health risks across demographics.

### B. Enabling Climate Information for Health

- Essential climate services aid health sector research and informed decision-making.
- Close cooperation between meteorological and health services is crucial for accessing, understanding, and acting upon health-relevant meteorological information.

### C. City-Level Climate Change Risk Assessments

- Urban centers, housing 36% of India's population, are disproportionately affected by climate change and ironically urbanization also accelerates climate change.
- City-level interventions have potential in preventing climate change-related health impacts and potentially slow down pace at which climate is changing.

### D. Detection, Preparedness, and Response to Health Emergencies

- Increasing climatic suitability for infectious disease transmission necessitates and robust health emergency preparedness and response systems complimented with strengthened disease surveillance.

### E. Adaptation Plans for Health

- Health Adaptation Plans (HAPs) are crucial for health systems to prepare for the growing climate burden.
- Priorities in HAPs should be guided by vulnerability and adaptation assessments and integrated into comprehensive adaptation plans.

### F. Climate Resilient Healthcare Infrastructure

- The report emphasizes the strain on healthcare systems due to climate-related health emergencies, urging the need for capacity building, training of healthcare professionals, and the establishment of regional response centers.

### G. Cross-Sectoral Collaboration and Policy Integration

- The findings highlight the importance of inter-ministerial coordination, urging the integration of health considerations into broader climate change policies. An action plan is recommended to foster collaboration between health, environment, and disaster management agencies.

### H. Resource Mobilization and Intersectoral Collaboration

- Adequate resource allocation, including the establishment of a dedicated fund for climate- health initiatives, is essential. Active engagement and collaboration with other sectors are encouraged to address

shared challenges and facilitate resource mobilization.

### ❑ Mitigation actions and health co-benefits

The report emphasizes the pivotal role of the health sector in driving mitigation actions that yield substantial health co-benefits. The report underscores that the health sector is uniquely positioned to advocate for and implement policies that not only address climate change but also directly improve public health outcomes. By championing initiatives such as the reduction of fossil fuel dependence, the promotion of active and sustainable transportation, and the enhancement of green spaces, the health sector becomes a catalyst for mitigating climate change and simultaneously fostering a healthier population.

Highlighting the interconnectedness of environmental and human health, the report emphasizes that the health sector can act as a key advocate for policy interventions that yield both climate and health dividends. For instance, shifting to accessible active, public, and electric travel not only reduces carbon emissions but also has potential to avoid 460,000 deaths globally every year from travel related PM2.5 emissions and encourage increased physical activity. Moreover, encouraging sustainable practices in healthcare facilities, such as energy-efficient buildings and waste reduction, contributes to broader climate goals while ensuring that healthcare settings prioritize patient well-being. The Lancet Countdown underscores the imperative for a health-centered response, emphasizing the symbiotic relationship between climate action and improved public health outcomes, thus making the health sector an essential driver of positive change in the face of irreversible environmental challenges.

### ❑ Conclusion

In conclusion, the report underscores the urgent need for a comprehensive and health-focused approach to address the climate crisis, especially in the context of India. The co-benefits associated with mitigation actions aimed at reducing greenhouse gas emissions can substantially improve air quality and, consequently, public health outcomes. Given India's unique vulnerabilities to climate change, including extreme heat events, changing disease patterns, and air pollution, adopting a health-centered response becomes imperative for safeguarding the well-being of its population. In the Indian context, where the health sector faces the compounded challenges of a vast and diverse population, integrating health considerations into climate action is vital.

The report serves as a crucial guide for policymakers in India, urging them to prioritize health-centric strategies that simultaneously address climate change and improve public health outcomes. By aligning policies with the findings and recommendations of the Lancet Countdown, India can navigate the complex landscape of climate-related health risks, ensuring a resilient and sustainable future for its citizens.