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Climate Change And Health

From respiratory and cardiovascular illnesses to mental health issues, extreme weather events are taking a toll

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THE HEALTH-CLIMATE NEXUS

Climate change is leading to deaths from extreme weather events, food system disruptions and mental health issues

The World Health Organisation (WHO) defines health as a state of complete physical, mental and social well-being, not merely the absence of disease or infirmity. Human health, therefore, is affected by physical, chemical and biological elements of environmental and social factors. These play a critical role in health-related outcomes of a society and a country.

Climate change is already having an impact on health in a variety of ways, such as: increased incidence of death and illness from increasingly common extreme weather events (heatwaves, storms and floods), food system disruptions and mental health issues.

Extreme weather events have exacerbated food insecurity, air pollution, access to clean water, population migration and the transmission patterns of vector-borne illnesses. The health effects of these disruptions may include increased respiratory, cardiovascular and infectious disease; injuries, heat stress and mental health problems.

Further, many social determinants of human health, such as livelihoods, equality and access to health care, as well as social support structures, are being disrupted by climate change. The most vulnerable and disadvantaged groups are disproportionately affected by climate-related health concerns.

Cover Design: **Anjan Das**

Scale of the Catastrophe

Approximately 3.3–3.6bn people around the world live in contexts that are highly vulnerable to climate change, as per the Intergovernmental Panel on Climate Change's (IPCC) *Sixth Assessment Report: Climate Change 2022*. Between 2000 and 2016, the number of people exposed to heat waves increased by 125mn. An additional 250,000 fatalities are estimated to result each year between 2030 and 2050 due to climate change.

In India, a 1°C rise in temperature will lead to a 3% loss in gross domestic product (GDP), according to the Overseas Development Institute, a think tank headquartered in London. This is expected to increase malnutrition and related health disorders such as child stunting—with the poor likely to be affected the most. As per the World Bank, child stunting in India is projected to increase by 35% by 2050 compared to a scenario without climate change.

Climate change is also envisaged to increase the frequency and magnitude of extreme weather events. And due to frequent and severe extreme weather events, health risks from a variety of other climate-related hazards such as food-borne, water-borne and vector-borne diseases and poor air quality are likely to rise.

Case for Climate Justice

Climate change knows no borders. It affects every part of the environment and culture. However, not all communities are affected equally by climate change. Marginalised groups frequently suffer the most from its negative consequences.

Residents of low-income areas are frequently clustered in urban heat islands, which are characterised by a dearth of green space and a larger concentration of concrete buildings.

These regions endure more intense heat waves as global temperatures

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rise, which increases the occurrence of heat-related ailments like heatstroke, dehydration and heat exhaustion among locals who lack access to adequate cooling resources.

To address these discrepancies, a multidimensional strategy is needed that integrates actions to address social and economic injustices with methods for climate change impact reduction and adaptation. Prioritising the needs of marginalised communities in the battle against climate change and ensuring that they have the access and resources required to safeguard their health and well-being are essential if we want to create a more resilient and equitable society. OB

CASE STUDY

The Bangladesh Example

In Bangladesh, marginalised communities—particularly those living in low-lying coastal regions—have been disproportionately impacted by climate change. The coastal settlement of Gabura, which is home to the Munda people, serves as one example.

In the past, agriculture and fishing were the Mundas' main sources of income. But now, their crops have been destroyed and their freshwater sources ruined by cyclones that occur frequently and saltwater intrusion brought on by climate change.

The Munda community now faces more health concerns as a result.

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Malnutrition, water-borne illnesses and increased susceptibility to vector-borne diseases like malaria and dengue have all been linked to a lack of access to clean drinking water. Their living situations have been stressed by displacement, and their health issues have been made worse by inadequate shelter, sanitary conditions and health-care facilities.

WHOSE CLIMATE IS IT ANYWAY?

The proper implementation of a climate action plan will require cooperation among governments, health-care providers, scientists as well as communities

Mitigating and adapting to adverse health effects due to climate change requires a multifaceted approach that encompasses planning and regulatory actions, economy, infrastructure, technology and communication.

The health-care ecosystem in India encompasses a series of interconnected activities and stakeholders involved in developing health-care services. There are distinct differences between rural and urban health-care value chains, due to variations in infrastructure, access to health-care services and the prevalence of health-care facilities.

The proper implementation of a climate action plan will require cooperation among governments, health-care providers, scientists as well as communities.

Planning and Regulatory Action

The first step is to carry out risk assessment and mapping. Authorities will need to identify vulnerable populations and regions at high risk of climate-related health consequences such as heatwaves, flooding or vector-borne diseases.

Authorities will also need to come up with heat action plans that include early warning systems, cooling centres and public education to

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protect vulnerable populations from heat-related illnesses and deaths. To increase resilience against climate-related shocks, there is a need to put into practice long-term strategies for supply chain management, workforce training and health-care infrastructure.

Economic Action

Money needs to be allocated for the building and remodelling of health-care facilities with a focus on designs that are climate and energy resilient. Further, vulnerable and marginalised communities will need financial support for climate adaptation measures including better housing, access to clean water and health care.

Authorities will also need to implement carbon pricing systems to promote emission reductions and allocate funds for projects that promote climate resilience in health care.

Green Infrastructure

In order to reduce the creation of urban heat islands and enhance air quality, there is a need to create and maintain parks, urban woods and green areas. There also needs to be continuity of care during catastrophes by retrofitting current health-care facilities to resist severe weather conditions and power outages.

To secure dependable and clean water sources and lower the risk of waterborne illnesses during climate-related disruptions, authorities need to upgrade the infrastructure for water and sanitation.

Crisis Communication

Public-awareness campaigns will go a long way in mitigating the immediate

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impact of climate events. Such campaigns should be initiated to inform the public about the health hazards posed by climate change and encourage the use of protective measures.

it is also important to establish clear and accessible communication routes for the dissemination of vital health information during climate emergencies.

Initiatives in India

In India, efforts to combat climate change have generally centred on fostering connections between human development and environmental results. The Energy Conservation Act, passed in 2001 and amended in August 2022, is now in effect.

Consumers must now meet their energy needs from non-fossil sources, and businesses and residential buildings must now adhere to the Energy Conservation Building Code, which specifies energy consumption rules for ships and automobiles, among other modifications.

India has created missions and plans to lessen its climatic vulnerability. The National Action Plan on Climate Change (NAPCC) was published on June 30, 2008. OB

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BIG IDEAS FOR HEALTH CARE

Health-care systems face unprecedented challenges in a world affected by rising temperatures and extreme weather events

Although climate change is often seen only as a problem for health, it also puts access to health-care, its quality and the financial viability of individuals and institutions at risk.

Health Infrastructure

Extreme weather events disrupt infrastructure and communication systems, which are critical to maintaining access to emergency services and health care. Hospital supply chains may also be disrupted, leading to shortages of essential pharmaceuticals and medical devices.

The effects of climate change will be felt mostly in countries where health systems are weak and the capacity to adapt and respond to climate change is low. But developing climate-resilient health-care infrastructure in these countries requires substantial financial investments.

Often, countries also lack the technical expertise to design and implement climate-resilient health infrastructure. Building this infrastructure requires collaboration across multiple sectors, including health, environment, urban planning and disaster management.

First, governments need to strengthen health adaptation plans and integrate climate change risks in national disaster risk management.

Next, there is a need to allocate funds towards retrofitting and climate proofing existing critical infrastructure to make them climate resilient. New health-care facilities must incorporate resilient design features, such as elevated structures, flood barriers and energy-efficient systems.

Telemedicine infrastructure can be developed to provide health-care services remotely, reducing the burden on physical facilities during disasters. Finally, local communities must be encouraged to get involved in disaster preparedness and response planning.

Building Preparedness

India has seen a rise in economic losses to infrastructure caused by natural disasters. Such incidents have also laid bare the vulnerability of health systems in the country, highlighting the importance of an institutional framework that integrates disaster risk management with climate risks.

Integrating climate resilience with disaster management faces several challenges in India, given the country's size and diverse climatic conditions. Further, upgrading critical infrastructure is a resource-intensive process.

In this context, various stakeholders could take up different responsibilities. Government bodies can focus on inter-ministerial and inter-departmental coordination to develop policies and regulations while health-care institutions should conduct vulnerability assessments, develop emergency response plans and stockpile essential medical supplies. The role of community organisations, academia and the private sector is also critical to ensure information dissemination and collaboration to develop solutions.

Equitable Access

Promoting equity in access to technological innovations involves widening the reach of the latest diagnostics, medical devices, therapies and digital health tools. This is a crucial element in reducing systemic inequities in health-care delivery.

Digital health-care solutions are becoming the bridge through which the limitations of health-care infrastructure can be addressed and last mile delivery be ensured. This is important to lay the groundwork for ensuring health justice

Vietnam—Engaging with Communities

The Vietnamese government has established a framework for disaster risk management and climate that has helped the country transition from a post-disaster, reactive response strategy to one focused on risk-informed planning and resilient infrastructure. Community-based projects, including climate resilient maintenance of rural roads and renovation of irrigation facilities, have generated employment opportunities and benefited over 3mn Vietnamese people.

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India—Vaccine Success

India's success in developing a Covid-19 vaccine and making it available to the masses, both at the domestic and international levels, is an exemplary model of facilitating equity in access to technological innovations. Mission Covid Suraksha was launched through a public-private partnership and with a stimulus of Rs 900 crore. The initiative enabled the development of indigenous, affordable and accessible vaccines for the country.

and making health care available to all.

Promoting digital literacy to achieve health equity requires the involvement of stakeholders, from government, advocacy groups, researchers, health care practitioners to the common citizen. Some interventions that can promote equity in access to technological innovations include simplifying and customising health technology among communities that find it difficult to integrate it into their lives, fostering local ownership of these technologies rather than imposing their use from the top and embedding equity in access to these technologies.

Greening Health Care

The health-care industry is a significant contributor to pollution and carbon emissions, impacting air and water quality. By adopting eco-friendly technologies and waste reduction measures, green health-

The Sustainable Swedish Solution

Hospitals in Sweden collaborate with cities to create more sustainable systemic solutions, encompassing sustainable heating, cooling, wastewater treatment and clean energy access. The health sector consistently adheres to green building standards, efficient waste management and the integration of renewable energy. Institutions like the New Karolinska Solna Hospital utilise geothermal energy along with district heating and cooling, resulting in near climate-neutral energy consumption.

care initiatives can mitigate adverse environmental effects.

Many health-care facilities in India, however, lack the infrastructure and resources to effectively implement green technologies. Upgrading existing infrastructure and adopting sustainable designs can be expensive and logistically challenging.

There is also a lack of awareness to ensure the implementation of green practices. Several institutions operate on limited budgets and allocating resources for green initiatives may compete with other health-care priorities, making it difficult to invest in sustainable practices.

Greening India's health-care systems requires a strategy that includes planning, financial incentives, infrastructure improvements, technological advancements, and communication and outreach efforts.

Telemedicine and Digital Health

The scope of digital health solutions has expanded over the past few years, and includes mobile health, wearable devices, health-information systems, telehealth platforms, telemedicine and personalised medicine.

Health-care practitioners are advocating the adoption of digital health technologies to reduce inefficiencies and provide services in remote and inaccessible areas.

But there is a huge disparity in technology access and literacy among communities and demographics, which widens the health-care gap instead of reducing it. The ability to use digital health technologies effectively requires training of practitioners, which is a resource-intensive process.

The handling of sensitive medical records is a critical task and there is no consensus yet on how this should be handled. Telemedicine is also subject to various regulations and licensing requirements that can prove to be a challenge.

Enforcing strict data protection and privacy laws to safeguard patient information can address some of these concerns. Integrating telemedicine into public health initiatives, especially for remote monitoring of chronic diseases and epidemic control can be another solution. OB

THE BUTTERFLY EFFECT

Small, well-thought-out changes within health-care systems have the potential to set off a chain reaction of favourable outcomes

Initiating a ripple effect in building climate-resilient health-care systems involves introducing small, well-thought-out strategic changes that can yield substantial and beneficial results in the long run. These concepts prioritise the development of resilience, sustainability and flexibility within health-care systems, holding the promise of setting off a chain reaction of favourable outcomes.

Though small in scale, each of these has the capability to create a 'butterfly effect' that lead to large scale and long-term commitments from nations in building climate-resilient health care infrastructure.

Can COP Help?

The Conference of the Parties (COP) meetings are crucial global platforms for addressing climate change. COP can potentially serve as a catalyst for concrete health–climate action, bringing together nations to commit to policies and strategies that protect public health from climate change impacts.

According to the World Health Organisation (WHO), the direct damage costs to health from climate change are likely to be $2–4bn per year by 2030. This will not only exacerbate poverty in underserved areas but will also lead to an increase

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in health inequity. It is, therefore, important to invest in health as a critical component of climate resilience. This is especially crucial for channelising concessional funds to meet the health needs of the Global South.

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Prime Minister Narendra Modi with Brazil's Luiz Inacio Lula

A Global Climate-Health Compact

COP26 saw commitment by a group of 50 countries to develop climate-resilient and low-carbon sustainable health systems to address the health impact of climate change. Going forward, such meetings could make countries commit to specific health and climate targets, such as reducing air pollution, enhancing disaster preparedness and improving healthcare access by a mutually decided deadline.

In this era marked by profound challenges of climate change and health, the imperative for a unified global response has never been more pronounced. There is a growing need for all stakeholders to work together. Governments, non-governmental organisations (NGOs) and the private sector need to collaborate on a scale that transcends borders. This collective endeavour should recognise the urgent need for comprehensive initiatives that address the multifaceted issues at the confluence of climate and health.

A global climate–health alliance can bring together a diverse array of stakeholders who share a commitment to climate and health. This includes countries from various regions, international organisations, regional health bodies, research institutions and civil society organisations.

India and Brazil: Change Through G20

During its G20 presidency, India emerged as a trailblazer in championing the intertwined imperatives of health and climate. G20 health ministers convened and recognised a fundamental truth: "Climate change will continue to drive health emergencies." This collective acknowledgement marked a pivotal moment in global governance, a recognition that the health of our planet and the health of its inhabitants are inexorably linked.

India's presidency served as a powerful platform for amplifying the call to action on these critical fronts. The nation showcased its commitment to addressing the multifaceted challenges posed by climate change to public health. It recognised that devastating impacts of climate change, from extreme weather events to shifting disease patterns, are not

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distant threats but immediate realities.

It also focused on how the impacts of climate change on health systems will be most acutely felt in low- and middle-income countries and small island developing countries. India's leadership was not confined to rhetoric; it extended to policy initiatives that emphasise building climate-resilient low-carbon health systems.

With Brazil now leading the G20, there are expectations of concrete action. It is anticipated that Brazil will seize this pivotal moment to further advance the global agenda on health and climate.

What India Can Do

One of the ideas that India can pursue on its own is the creation of a dedicated health fund. An India health fund will be dependent on thorough research and analysis of the surrounding environment, community and the estimated 'risk and vulnerability factor' that can be attributed to climate change.

The need for a special fund is based on the assumption that there are unique health challenges posed by climate change and specially allocated funds can be utilised to support research, surveillance and response efforts to address climate risk.

Further, there will be a need to identify and map out vulnerable regions and communities who are disproportionately affected by the health impacts of climate change. This is necessary to recognise, strategise and allocate resources to take the needed interventions and reduce health disparities.

Further, India can create a technology stack with a focus on climate change-related resilience integrating various technologies and tools that can help mitigate the impacts of climate change, adapt to changing conditions and enhance the country's overall resilience. OB

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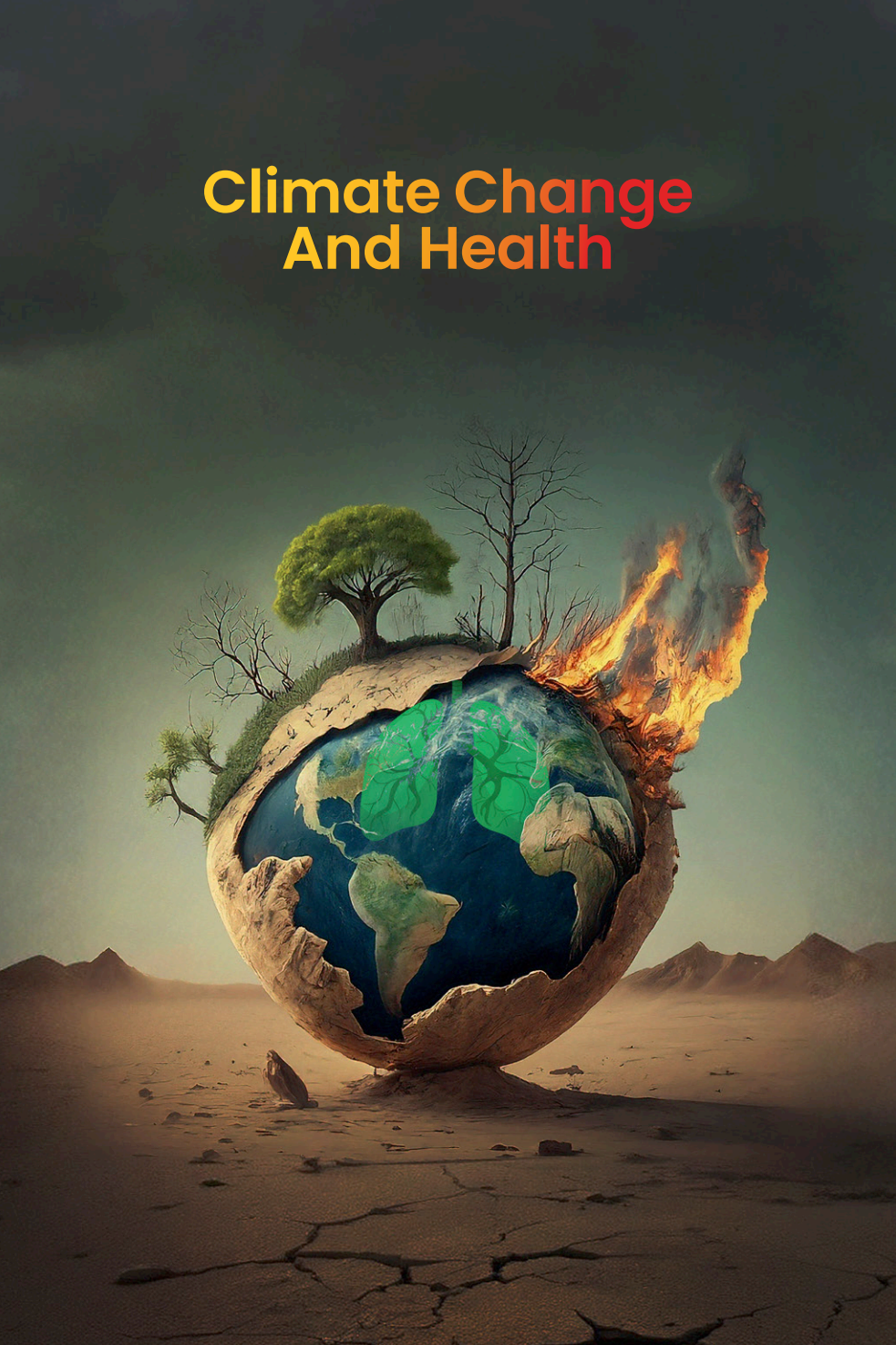
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