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Unpacking Climate Change and Health Nexus in Bangladesh:

10 Points on How the Country Can Prepare to Implement and Support the WHO's Global Action Plan on Climate Change and Health (2025)

Wafi Ara Faruqui, Nidhi Nagabhatla, and Geert Haghebaert

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About the author

Wafi Ara Faruqui is an MSc student from University of Bonn and a Research Intern of the Nature, Climate and Health research cluster at UNU-CRIS.
Nidhi Nagabhatla is Senior Fellow and cluster coordinator of the Nature, Climate and Health UNU-CRIS.
Geert Haghebaert is an Associate Research Fellow of the Nature, Climate and Health research cluster at UNU-CRIS.

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Executive Summary

This working paper offers a timely and in-depth exploration of the climate-health nexus, specifically focusing on the context of Bangladesh as this country faces some of the world's highest global climate risks. At its core, the paper engages with the WHO's Global Action Plan on Climate Change and Health (2025), positioning it as both a technical framework and a guiding reference point for shaping coherent, cross-scale health-climate policy responses.

A significant strength of the WHO plan lies in its systems-thinking approach. It extends beyond conventional public health challenges to include critical yet often overlooked dimensions such as mental health, gender equity, displacement, and the need for sustainable health financing. These thematic pillars are particularly relevant for low- and middle-income countries like Bangladesh, where climate change intersects with existing socioeconomic vulnerabilities and places additional strain on already stretched health systems.

This paper emphasizes the importance of multi-level governance in translating global commitments into effective local action. International frameworks such as the WHO's Action Plan serve as strategic compasses for national governments and catalyze alignment and accountability across multiple tiers of governance—from ministries and local authorities to frontline service providers, and civil society actors.

Bangladesh, for instance, has demonstrated commendable policy intent through the development of the National Adaptation Plan (NAP), the Health National Adaptation Plan (HNAP), and the Mujib Climate Prosperity Plan (MCPP). However, these efforts remain fragmented without the systemic coordination mechanisms needed to operationalize them at scale. Strengthening vertical and horizontal governance integration can significantly enhance the impact and coherence of adaptation responses. Despite this policy momentum, the paper identifies persistent implementation challenges, including limited inter-ministerial coordination, weak research-to-policy translation, and the lack of real-time data systems to inform evidence-based action. By contextualizing the WHO framework within the national landscape of Bangladesh, this paper provides practical entry points for integrating climate resilience into health systems, providing lessons that are also applicable to similar vulnerable countries.

Keywords

Climate-health nexus, Global Action Plan on Climate Change and Health (GAPCC), Bangladesh, Climate vulnerability, Health system

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Introduction

Overview of the WHO global action plan

In the 21st century, climate change has emerged as one of the greatest yet often under-recognized threats in global public health, the impact of which ranges from extreme heat to flash flood, water insecurity to waterborne disease, food insecurity to malnutrition, air pollution to vector-borne diseases, etc. Unfortunately, the effect of climate change is not felt equally; low-income countries face a disproportionate burden, heightening their vulnerability and straining the fragile health system. In response to these challenges, the World Health Organization (WHO) adopted on May 27, 2025, ***the Global Action Plan on Climate Change and Health*** (WHO GAPCC, 2025) and recognizes the climate crisis as a global health crisis. The action plan proposes a globally adaptable, unified framework to integrate health into climate action. The action plan urges governments, partners, implementers, and stakeholders to adopt integrated, evidence-based, context-specific, and equity-centered policies and strategies rather than relying on isolated policies to address climate change and health.

This global action plan has been structured around ***three action areas***, as shown in Figure 1

Figure 1: Action areas from Global Action Plan
Source: WHO

Each of these three action areas prioritize focusing on the marginalized and climate-vulnerable population, especially in developing countries to bridge the gaps between climate-related policies and public health planning. If we consider the key points from all these action areas, then they mostly revolve around:

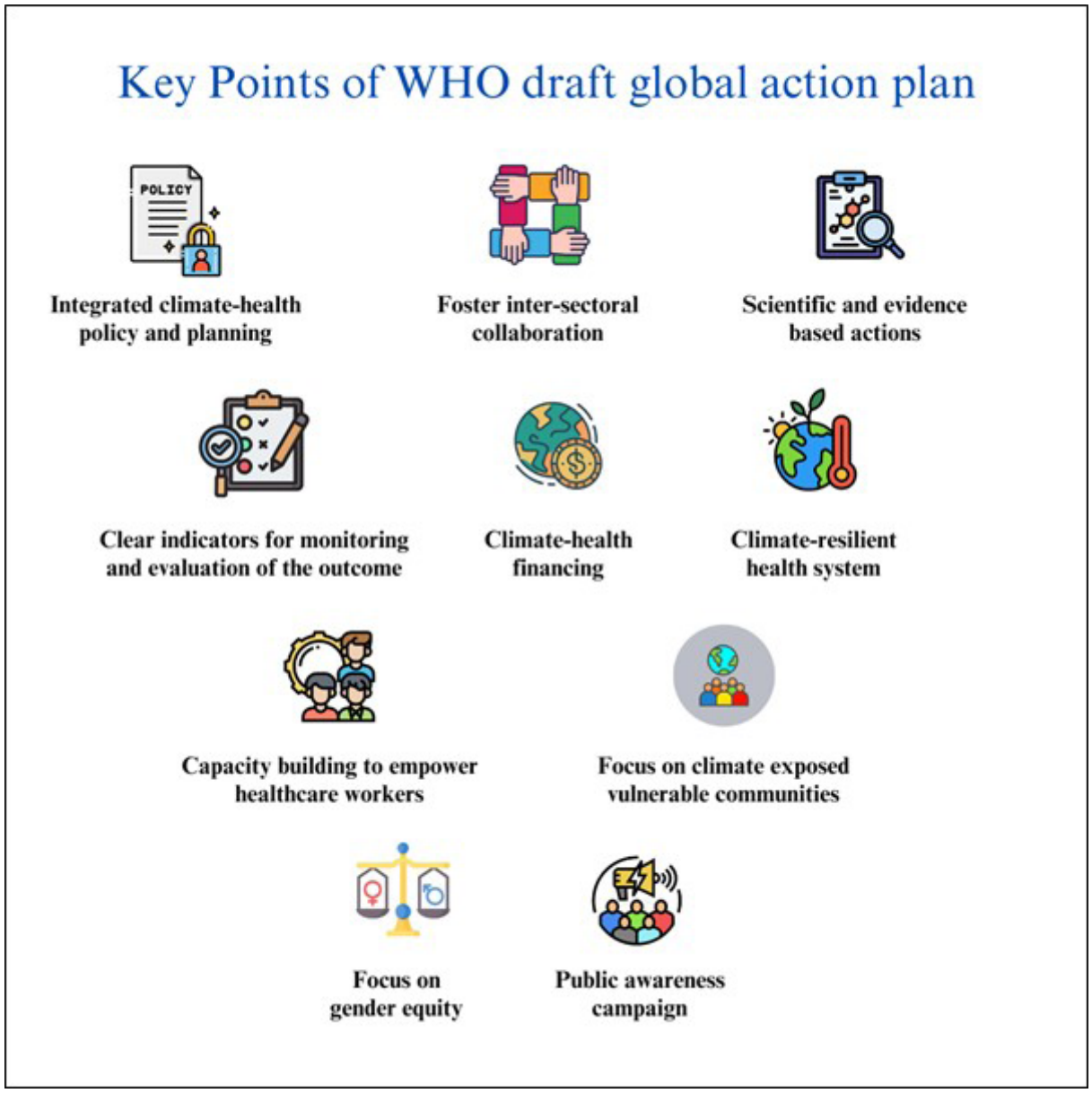

Figure 2: Ten key points identified from WHO's global action plan

As a globally recognized unified framework, the success of the WHO's Global Action Plan depends on how low-resource settings and climate-vulnerable countries are adapting and translating the framework's principles into their governance system. The following section will explore how a climate-vulnerable country like Bangladesh can prepare to implement and support WHO's Global Action Plan on Climate change and Health through its national policy and planning, institutional coordination, and context-specific measures.

Background and Context

Health and Climate Change in Bangladesh

Bangladesh is a critical hotspot for understanding how climate change is responsible for shaping health determinants and outcomes. The country consistently ranks among the world's most climate-vulnerable nations due to its unique geographical location and socio-demographic condition (United Nations Development Programme, 2023). A wide range of climate-induced hazards occurs annually across different regions, for instance, recurring heatwaves in the northwest and urban heat island effects in major cities; water salinity intrusion and tropical cyclones along the southern coastal belt; flood and riverbank erosion in the northeast and southeast parts of the country.

These extreme climate events may lead to diverse and compounding health risks. For example, heatwaves increase heat stress, dehydration, and aggravation of underlying diseases (Shahrujjaman et al., 2025); while flooding, cyclones, and salinity intrusion disrupt access to safe food and water, exacerbate malnutrition (M. Rahman et al., 2024) and increase infectious diseases (Alam et al., 2025; Rupa & Hossian, 2024), adversely affect reproductive health (Khan et al., 2011), and even pose a significant threat to mental health and psychosocial well-being (Mostafizur Rahman et al., 2023). The Lancet Countdown on Health and Climate Change (Romanello et al., 2024) follows a whole set of indicators linking health and climate change since 2016. In Bangladesh, respectively, the total number of heatwave days experienced annually by children under the age of one was 2.3 times greater than in 1986-2005 (Lancet Countdown, 2024).

Many activities that contribute to climate change have also resulted in significant negative health impacts. These include, for example, air pollution, which exacerbates respiratory and cardiovascular diseases, leading to a high burden of illness and mortality worldwide. The Lancet Countdown (2024) highlights how the interconnectedness of environmental degradation and human health demands urgent attention, as the consequences of these climate-driven factors profoundly affect public health outcomes. Addressing the root causes of climate change is therefore essential not only for environmental sustainability but also for improving global health and reducing disease burdens. For example, the indoor air pollution (small particulate matter-$PM_{2.5}$) from biomass burning, such as wood and dung, caused 74 deaths per 100,000 in 2020, while overall 212,000 deaths were attributable to air pollution in 2021.

Regarding vulnerability to infectious diseases, i.e., the average annual population vulnerable to Vibrio transmission in coastal areas in the period 2014 – 2023, reached 44.5 million, a 32% increase in conditions suitable for Vibrio transmission compared to 1990-1999. Vector-borne diseases, such as Dengue and chikungunya, have declined by about 15% since the 1950s, thanks to improved healthcare access; however, transmission remains high, indicating ongoing risk in a changing environment (Jibon et al., 2024; Lancet Countdown, 2024). Also, riverbank erosion often results in forced internal displacement, which, combined with other climate shocks, poses significant risks to both physical health (Kaiser, 2023) and mental well-being (Hossain, Alam, & Haque, 2021). This type of displacement can also undermine human security and contribute to social instability, thereby creating a complex health-climate-security challenge (Karim, 2024).

Together, these challenges underscore Bangladesh' urgent need for integrated climate-health strategies and resilient health systems. The country has recently made tremendous progress in integrating the climate-health nexus into its action plans and ongoing projects, but some gaps persist.

Ten points on how Bangladesh stands in the context of alignment with the WHO's 2025 global action plan

We have outlined an overview of the current status, existing gaps, and potential for Bangladesh's climate change and health-related responses through the lens of ten key areas that form the core of the 'WHO Global Action Plan on Climate Change and Health'.

1. Need for Better Integrated Climate-Health Policy and Planning

Bangladesh is among the few countries that have developed integrated climate-health policies shaped by a cascade of interconnected plans. The *National Adaptation Plan (2023-2050)* (Department of Environment, 2024) sets broad adaptation

priorities. Building on this, a dedicated ***Health National Adaptation Plan*** (HNAP) (Directorate General of Health Services, 2018) was updated with support from the WHO and the Institute of Epidemiology, Disease Control & Research (IEDCR), which translates the health-specific priorities.

HNAP outlines five thematic areas: climate-resilient health systems, water and sanitation, vector-borne disease control, and health emergency preparedness. In parallel, the ***Mujib Climate Prosperity Plan*** (MCPP) (Ministry of Environment, Forest and Climate Change, 2022) and the ***Bangladesh Delta Plan*** (General Economics Division, 2018) reflect on elevating the role of health within a large vision of climate-resilient economic development in Bangladesh.

It is noted that critical ***gaps persist*** despite these robust policy efforts, notably in operational integration. For example, the lack of a transparent implementation tracking system, ministerial coordination, and grassroots-level action significantly limits the effectiveness of its Health-NAP and related integrated climate-health plans. Addressing these systemic gaps, particularly in monitoring, budgeting, and inter-ministerial coordination, is critical to ensuring that adaptation plans translate into improved health outcomes.

2. Need to Foster Intersectoral Collaboration

While Bangladesh has developed a strong foundation through its national adaptation policies and sector-specific plans, the operational success of these strategies depends heavily on cross-sector collaboration that remains underdeveloped (Department of Environment, 2024; Directorate General of Health Services [DGHS], 2018). Several technical working groups and joint committees facilitate policy planning and development. However, most coordination remains limited to short-term projects or consultations, rather than being embedded in formal governance systems.

There is a need to strengthen the existing governance; a permanent National Climate-Health Coordination Taskforce with legal mandates should be established that will be co-led by the Ministry of Health and Family Welfare (MoHFW) and the Ministry of Environment, Forest, and Climate Change (MoEFCC), with support from cross-ministries, local health authorities, and community representatives to ensure coordination and inclusiveness.

3. Strengthen Scientific Assessment and Evidence-Based Action Planning and Policy Process

Scientific assessment, evidence-based action, and policies are critical pillars of effective climate-health planning. Yet, in Bangladesh, the integration of research into national policy and local implementation remains limited. While institutions such as the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), IEDCR, and BRAC University have produced valuable studies linking climate change with adverse health outcomes (Noor, 2023; M. M. Rahman et al., 2019), these findings are rarely embedded in public health policy or service design. A scoping review conducted by Nahian (2023) found that only 25% of health sector operational plans in Bangladesh incorporated climate-related evidence, highlighting an existing critical gap between research generation and its translation into health system planning.

A ***key challenge is the absence of a centralized, district-based, interactive climate-health observatory*** that can link meteorological, environmental, and health surveillance data for predictive modelling or early response through regional data collection and analysis, knowledge synthesis, information dissemination, and support for adaptation strategies (CSTEP, 2022). This gap restricts the development of region-specific early warning systems, adaptive protocols, and evidence-based decision-making. Establishing such a platform might significantly improve policy responsiveness and resilience-building.

4. Need for Clear and Smart Indicators for Monitoring and Evaluation of Outcomes

The lack of evidence-based integration is closely tied to another critical shortcoming: the absence of clear indicators for monitoring and evaluating the climate-health outcome. While Bangladesh tracks some of the health and climate-related indicators through the SDG tracker and Early Warning, Alert and Response System (EWARS) dashboards (only for authorized users), no real-time open-access dashboards are showing heat-related morbidity, vector-borne outbreaks with trends, or other climate-related health hazards.

Without a clearly defined set of ***climate-health outcome indicators***, measuring progress, identifying gaps, or prioritizing investments becomes difficult. Bangladesh should align its monitoring and evaluation framework with the established global standards, such as 47 indicators from the ***Lancet Countdown 2024 report***, which spans climate change impacts, exposures, and vulnerability; adaptation, planning, and resilience for health; mitigation actions and health co-benefits; economics and finance; and public and political engagement (Romanello et al., 2024). Adopting even a subset of these indicators might be a practical starting point for Bangladesh to develop a nationally relevant, robust climate-health monitoring and evaluation system.

5. Need to Boost Climate-Health Financing

In parallel with improving the monitoring and evaluation system, strategic and adequate financing is also crucial to operationalize the climate-health commitments and policy coherence. The recent climate budget for FY-2025 allocates about 10.09% of the total national budget (BDT 422.07 billion approximately) to climate-relevant activities (Ministry of Finance, 2024).

Despite this notable step towards climate consideration in the budget, the Climate-health financing remains limited and fragmented, with no dedicated budget lines for ***Research and Knowledge management*** and quite underfunded budgets for investments in ***infrastructure resilience, disease surveillance***, and ***health workforce training*** (Khatun, Saadat, & Huq, 2024; Ministry of Finance, 2024). A significant gap also persists between the current spending (USD 1.2 billion per year) and estimated adaptation needs (USD 8.5 billion annually) (Department of Environment, 2024). Regarding clean energy commitments, only 4.26% of the overall budget was allocated for renewable energy, while the remaining 96% still support fossil-fuel-based power generation (Khatun, Saadat, & Huq, 2024). Continuous fossil-fuel subsidies and limited investment in clean energy slow the transition towards health-promoting, low-emission infrastructure and achieving the net-zero goal for Bangladesh, as emphasized in the Lancet Countdown (Romanello et al., 2024).

6. Designing and Deploying Climate-Friendly and Climate-Resilient Health Support Systems

To design a ***climate-friendly health system***, tackling carbon emissions from the health sector is crucial. Bangladesh contributes significantly to emissions from this sector due to reliance on fossil fuels, high energy consumption, poor waste management, and a poor transportation system (Raihan et al., 2022). Prioritizing the reduction of carbon footprint through the transition to clean and renewable energy is urgent (Ahmad, 2024). To build a ***climate-resilient health system***, Bangladesh has adopted a health facility building standard integrating Disaster Risk Reduction (DRR) measures, utilizing tools such as Hospital Disaster Safety Assessment (HDSA) and Hospital Emergency Response Planning (HERP) to strengthen the preparedness. However, the implementation remains in its infancy, with only a few districts piloting the approach (Asian Disaster Preparedness Center, 2022).

A recent assessment by Pathfinder International (2024) revealed that a large portion of health facilities (52%) from flood-prone districts became non-functional during the peak of flooding. The study also revealed that a staggering 98% of facilities lacked operational capacity during monsoon floods or cyclones, 97% did not have alternative electricity sources, and 96% experienced floodwater intrusion inside their premises during the 2022 monsoon season. Similarly, WHO (2018) report findings show great vulnerability in WASH infrastructure across climate-impacted areas. Underscoring the urgent need for the wider application of this standard.

Recently, the World Bank (2024) has committed to funding ***$1.16 billion*** for climate-resilient health, water, and sanitation projects, which include infrastructure strengthening, service continuity planning, and climate-adaptive facility design. Bangladesh must embed climate-resilient standards in facility upgrades to maximize this opportunity, prioritize health system preparedness, and ensure that investments reach high-risk areas.

7. Need to Enhance Capacity Building Efforts to Empower Healthcare Workers

Strengthening climate-health resilience is impossible without investing in health workers' capacity. In Bangladesh, most health personnel lack formal training in climate-related action and monitoring, including doctors, nurses, and community health workers. Existing training program reports (Bangladesh Center for Communication Programs, 2024) largely overlook the factors related to social determinants of health which was prioritized by COP 29 special report on climate change and health (WHO, 2024). This report emphasized ***social determinants of health factors*** (such as housing, WASH access, nutrition security, and

livelihood) in health-related training curriculum, as these factors are being undermined by climate change and accelerating health impacts.

While short-term training has been conducted under pilot programs by WHO and UNDP, these remain isolated and are not yet institutionalized within the MoHFW's workforce development frameworks. To ensure sustainability, Bangladesh should integrate climate-health modules at all health education and professional development levels, with regular refresher training and practical tools for community-level health personnel to identify and manage climate-sensitive health conditions among the vulnerable populations. Parallelly, specific training for researchers and fostering engagement of academic institutions, such as medical or public health schools, is also essential to generate local evidence and support in curriculum development.

8. Need for Dedicated Focus on Climate-Exposed, Vulnerable Communities

Approximately 44.8 million people live in coastal areas (Ahsan et al., 2024), 10 million people from riverine char lands (Concern Worldwide, 2018), 1.8 million people residing in informal urban settlements or slums (Bangladesh Bureau of Statistics, 2023), and more than one million people from refugee camps (Bayani, 2024) are among the most climate-vulnerable populations in Bangladesh and are at increased risk of displacement. Such sudden displacement can strain the host communities and, in extreme cases, might contribute to internal disturbances hampering ***public safety or national security concerns*** (Jolly, Ahmad, & Scott, 2024).

Within these vulnerable communities, children, pregnant women, and older adults face the greatest burden of climate-sensitive health risks. For instance, children under five mostly suffer from malnutrition (Manzoor et al., 2022) and water-borne diseases (Moon, 2024). While pregnant women are at increased risk of preterm births, low birth weight babies, and climate-induced mental health issues (Amin et al., 2025). Additionally, elderly people are extremely vulnerable to flood and heat-related extremes due to their pre-existing comorbidities (DGHS & UNICEF, 2024). Even unplanned urbanization has compounded health effects due to poor air quality, poor waste management, and limited access to water and sanitation during climate extremes (Rahman et al., 2023).

Despite some innovative interventions, such as establishing mobile health units, early warning systems, and floating hospital services in remote climate-vulnerable populations, ***the challenge remains*** in reaching most of the population due to weak integration of the interventions into the national health system (Shakti Foundation, 2024; Sajib et al., 2025). To address these gaps, Bangladesh should focus more on institutionalizing and upscaling successful outreach models within the existing public health system and tailor the services to be more accessible, inclusive, and equitable for the marginalized and underserved population.

9. Need to Ensure the Actions and Plans are Sensitive to Gender Equity Guidelines

Out of all these vulnerable groups, ***women and girls often carry a disproportionate share of the health burden***, yet their specific risks remain poorly reflected in climate-health strategies. In salinity-affected coastal areas, women face increased risks of hypertension and pregnancy complications due to contaminated water (Amin et al., 2025). Climate-induced displacement and caregiving roles increase their exposure to mental health stress, nutritional insecurity, and gender-based violence (Goudet et al., 2024).

Despite the recent development of an action plan (UN Women, 2024) that provides a national framework to integrate gender equity into climate and health adaptation; ***significant gaps remain in collecting and utilizing sex, age, and disability disaggregated data*** (The Daily Star, 2024). Disaggregated data on intimate partner violence, child marriage, sexual harassment, accessibility to shelter homes, unintended pregnancy, abortions, miscarriage, damage to reproductive organs, and many other gender-specific indicators are chronically under-reported (Ipas, 2022). The integration of ***the third gender or transgender community*** (Locally known as "Hijra") is frequently excluded and undocumented from needs assessment, data collection, or emergency response systems (Zami, 2022). The ***absence of gender-responsive climate-health indicators*** not only weakens the planning and implementation of policies and programs but also undermines the prioritization of equity and inclusiveness in climate-health financing (UN Women, 2022). Therefore, equity must not be seen as an add-on, but as a prerequisite for sustainable climate adaptation.

10. Need to Amplify Outreach and Awareness-Building Campaigns at all Levels of Stakeholders

There is a pressing need to amplify outreach and awareness-building campaigns across all levels of stakeholders, not just among those who are directly affected by climate change-related health issues. Resilience is dependent not only on the affected communities' ability to cope but also on the actions of the people who govern, legislate, design infrastructures, deliver healthcare, and manage the industrial and transport sectors of the country.

Bangladesh's public awareness efforts on climate-related health risks remain ***reactive, urban-focused, and poorly institutionalized*** (M. K. Hossain et al., 2025). Mass awareness campaigns during floods or heatwaves are typically limited to short-term announcements and often fail to reach rural, low-literacy, or marginalized groups. Most importantly, they also ***fail to engage stakeholders*** in positions of power or influence, whose decisions and practices exacerbate climate-health related vulnerabilities.

To close this gap, Bangladesh should adopt a ***national climate-health communication strategy*** and action plan that will be more proactive, risk-informed, inclusive, and continuous. This strategy should mobilize diverse communication channels, including schools, religious leaders, media, healthcare providers, factory owners, transport unions, and local governments, for targeted awareness and effective community engagement. This approach will ensure that targeted messaging not only empowers communities but also informs the stakeholders to minimize the risk factors before the next disaster strikes.

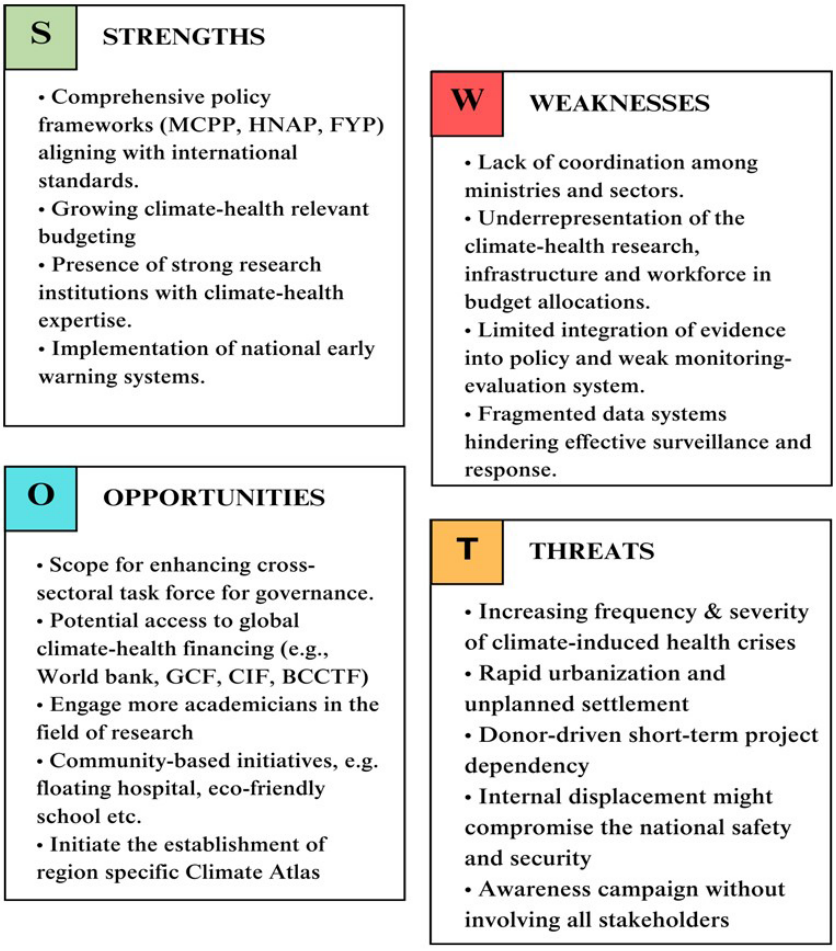

Figure 3: Overview of SWOT analysis with respect to climate change-related health response in Bangladesh. The analysis is based on the 10 points outlined above

Figure 3 represents a concise SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis that synthesizes the core findings of the working paper, structured around Bangladesh's readiness to align with the WHO's Global Action Plan on Climate Change and Health. Drawing on the ten thematic areas outlined in the report, the figure offers a high-level visual summary of the systemic capabilities and challenges Bangladesh faces in addressing climate-sensitive health risks. Key ***Strengths*** include a multi-tiered national policy architecture—such as the NAP, HNAP, and MCPP—demonstrating the country's proactive commitment to integrated climate-health planning. However, ***Weaknesses*** persist, such as poor inter-ministerial coordination, limited real-time data systems, and fragmented financing mechanisms. The figure also highlights promising ***Opportunities***, such as the recent commitment of international funding (e.g., World Bank, Loss and Damage, Adaptation Fund), emerging health infrastructure investments, and engaging more academicians in research. Yet, these are counterbalanced by enduring ***Threats***, including recurring extreme weather events, safety and security concerns, and limited integration of stakeholders in awareness campaigns.

Overall, Figure 3 is a strategic tool to guide decision-makers. It provides a snapshot of where Bangladesh stands in its pathway toward operationalizing climate-resilient health systems under the WHO's global framework.

Looking Ahead

This working paper underscores the urgent need to accelerate the integration of climate resilience into national health systems, particularly in vulnerable regions such as Bangladesh. Anchored in the WHO Global Plan of Action on Climate Change and Health's thematic structure, the assessment identifies promising entry points and critical implementation gaps. Bangladesh demonstrates strong policy intent through national frameworks like the National Adaptation Plan (NAP), the Health National Adaptation Plan (HNAP), and the Mujib Climate Prosperity Plan (MCPP). These plans offer a robust foundation to align with global health-climate ambitions and integration.

To effectively align with the WHO Global Action Plan on Climate Change and Health, Bangladesh must transition from policy development to system-wide, cross-sectoral implementation. A critical area for advancement lies in embedding climate resilience within the national health infrastructure agenda. While some pilot initiatives have been introduced to promote climate-resilient building standards for healthcare facilities, the efforts remain limited and fragmented. Hospitals and health centers, as frontline institutions in climate-related emergencies, require targeted infrastructure standards to withstand extreme weather events and ensure uninterrupted care. Addressing this gap offers Bangladesh a strategic opportunity to lead by example—operationalizing the WHO vision in a high-risk, resource-constrained setting through practical, scalable interventions that safeguard health systems and vulnerable populations.

However, the paper also highlights that preparedness alone is insufficient without systemic improvements—enhanced inter-ministerial coordination, real-time data systems, improved financing, and stronger research-policy integration. Mental health, gender equity, and health infrastructure strengthening are priority areas needing targeted investment and innovation. We reckon that by adopting a nexus approach and placing equity at the center, Bangladesh and similar countries can move toward operationalizing resilient health systems that are adaptive, inclusive, and fit for a climate-challenged future and aligned with human security agendas at national, sub-national, and regional levels. The findings inform decision-makers and practitioners seeking to translate global commitments into scalable, locally grounded solutions with lasting impact.

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