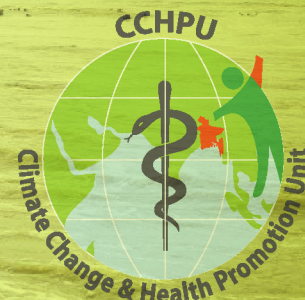




# Policy Brief

Climate Change and Health Promotion Unit



February 2022

**Policy brief 2: Institutionalize Climate Change and Health Promotion Unit as a regular entity of MOHFW.**

## Climate Resilient Health System for Vulnerable Women and Children of Bangladesh

### Key Message:

- Climate Change and Health Promotion Unit (CCHPU) of HSD, MoH&FW needed to be institutionalized for mainstreaming policy of the Government of Bangladesh (GoB) with priorities to address emerging issues caused by climate change.
- Linking climate adaptation and health policies is in high demand for Bangladesh but effective action is lagging.

### Introduction:

The impacts of climate change on human health is one of the major increasing global concern now a days. Climate change not only has direct impacts on human health (e.g. through injuries and illness from extreme weather events), but also threatens the capacity of health systems to manage and protect population health (e.g. through the vulnerability and reliability of infrastructure or critical services). Health systems should therefore be increasingly strengthened so that they continue to be efficient and responsive to improve population health in an unstable and changing climate.

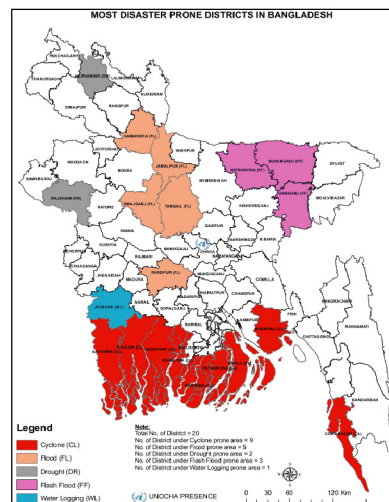
Climate change related hazards, such as drought, flooding, waterlogging, tidal inundation, cyclones, storm surges, erratic rainfall and rising temperatures, are common events in Bangladesh. They have direct and indirect adverse impacts on water resources, agriculture, livelihoods and ecosystems all of which ultimately affects human health.

Bangladesh is considered the most vulnerable to tropical cyclones, the third most vulnerable to sea level rise in terms of the number of people affected, and the sixth most vulnerable to floods in the world (Francis and Maguire 2016). Scientists have proved that the erratic nature of rainfall and temperature is gradually

increasing in Bangladesh. Precipitation is becoming less predictable and the monsoon is now characterized by higher amounts of rainfall within shorter periods of time (Islam et al. 2014).

Temperatures are becoming more extreme, with regional variations and an overall annual rise. Tropical cyclones are also expected to increase in intensity. As a low-lying country, Bangladesh is highly vulnerable to these climatic changes and increased extreme weather events.

Climatic variability and changed weather patterns play a significant role in freshwater availability, accessibility, agriculture, economic growth and performance, and livelihoods of people (NAP Process 2009/2021).



Natural hazards that come from increased rainfall, rising sea levels, and tropical cyclones are expected to increase as the climate changes, each seriously affecting agriculture, water and food security and shelter resulting adverse effect on human health and animal health as well. Sea levels in Bangladesh are predicted to rise by up to 0.30 metres by 2050, resulting in the displacement of 0.9 million people, and by up to 0.74 metres by 2100, resulting in the displacement of 2.1 million people.

Bangladesh has experienced an average rise in temperature of 0.5°C between 1976 and 2019. The increase in maximum temperatures during this period has been shown to be consistent on a month-to-month basis, with the months from February to November getting warmer. The rise in maximum temperature across the country has not been uniform. For instance, between 1976 and 2019, compared to a 0.5°C rise in central parts covering Dhaka and neighboring districts, maximum temperatures rose by 0.9°C in the eastern parts (Chattogram and Sylhet divisions). In general, summers are becoming longer, and winters are getting warmer and monsoon becoming unpredictable beyond the norm.



*Divisional Level Consultation on Climate Resilient Health Adaptation Plan*

Being situated on the edge of the tropical region, Bangladesh experiences some of the wettest monsoons in the world. During peak monsoon, from June to August, the average monthly mean rainfall has declined by 60 millimeters. On the other hand, mean monthly rainfall for September and October has increased by 43 millimeters, which indicates that the monsoon period is gradually becoming longer, extending now from March to October. Rising temperature during the winter months coupled with erratic rainfall patterns have eroded the distinct seasonality in Bangladesh.

To address the changing parameters of climate in Bangladesh, the Bangladesh Delta Plan 2100 was launched in 2018. The government of Bangladesh is working on a range of specific climate change adaptation strategies. Climate Change adaptation plays a crucial role in fostering the country's development.

## Climate Change and Health

Being a low-lying river delta with a long coastline and floodplains that occupy 80 percent of the country, climate change in Bangladesh is not just about cyclones and floods. Changing and erratic weather pattern have already affected our physical and mental health. The climate change in Bangladesh have started to impact health with an increase in respiratory diseases, vector-borne diseases, along with psychosocial stress deteriorating mental health conditions.

### Adverse Effect on Health

According to the baseline survey of CCHPU and a recent World Bank survey climatic variability has adverse effect on physical and mental health.

- Respiratory illnesses are likely to increase with rising temperature and humidity. A 1°C increase in temperature rises the likelihood of contracting a respiratory infection by 5.7 percentage points, whereas a 1 percent increase in humidity rises the chances of catching a respiratory infection by 1.5 percentage points.
- Waterborne diseases like cholera are likely to decrease with rising humidity and temperature. A 1 percent increase in relative humidity reduces the probability on contracting waterborne illnesses by 1.6 percentage points, whereas a 1°C increase in mean temperature reduces the likelihood of respiratory infections by 4.2 percentage points.
- Dengue is likely to increase for Dhaka as the climatic conditions become more suitable. Humidity in the range of 60 to 80 percent, maximum temperature between 25°C and 35°C, and rainfall between 200-800 mm create ideal conditions for mosquitoes. Weather data between 1976 and 2019 indicate Dhaka is experiencing falling humidity levels, rising temperatures, and heavier summer rainfall. These together with factors like urbanization are increasing the risk of the spread of vector-borne diseases such as dengue/ chikungunia in Dhaka city.

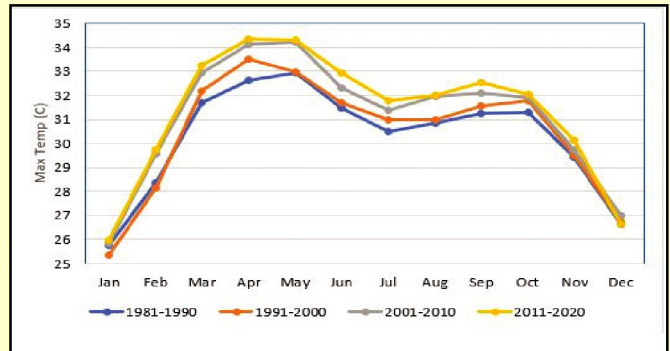
### Mental Health

- Changes in weather can cause mood swings. But, seasonality have a slightly different impact on anxiety than depression.
- The level of anxiety disorders increases with temperature and humidity. Increase in mean humidity and mean temperature increases the probability of having anxiety by 0.3 percent and 0.8 percent, respectively.
- More people suffer from depression during winter. Increase in temperature lowers the probability of depression by 1.6 percent.
- Further, women are at higher risk than men for depression, while men are more susceptible to anxiety.

## Projected Burden of Climate Change and Health in Bangladesh:

According to WHO, Climate change affects the social and environmental determinants of health-clean air, safe drinking water, sufficient food and secure shelter. Between 2030 and 2050, climate change is expected to cause approximately 250 000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress. The direct damage costs to health (i.e. excluding costs in health-determining sectors such as agriculture and water and sanitation), is estimated to be between USD 2-4 billion/year by 2030. Areas with weak health infrastructure – mostly in developing countries – will be the least able to cope without assistance to prepare and respond. Reducing emissions of greenhouse gases through better transport, food and energy-use choices can result in improved health, particularly through reduced air pollution.

The threats of climate change in Bangladesh have already extended to health in the form of higher incidences of respiratory diseases, vector borne diseases like dengue, along with deteriorating mental health conditions. By 2050, Bangladesh is expected to experience an increase in temperature of about 1.5°C. And between 2040 and 2059, annual rainfall is also expected to increase by 74 millimeters. These projected changes will escalate spread of infectious diseases and mental health issues. By taking urgent actions, Bangladesh can remain better prepared to mitigate the impacts of climate change on health.

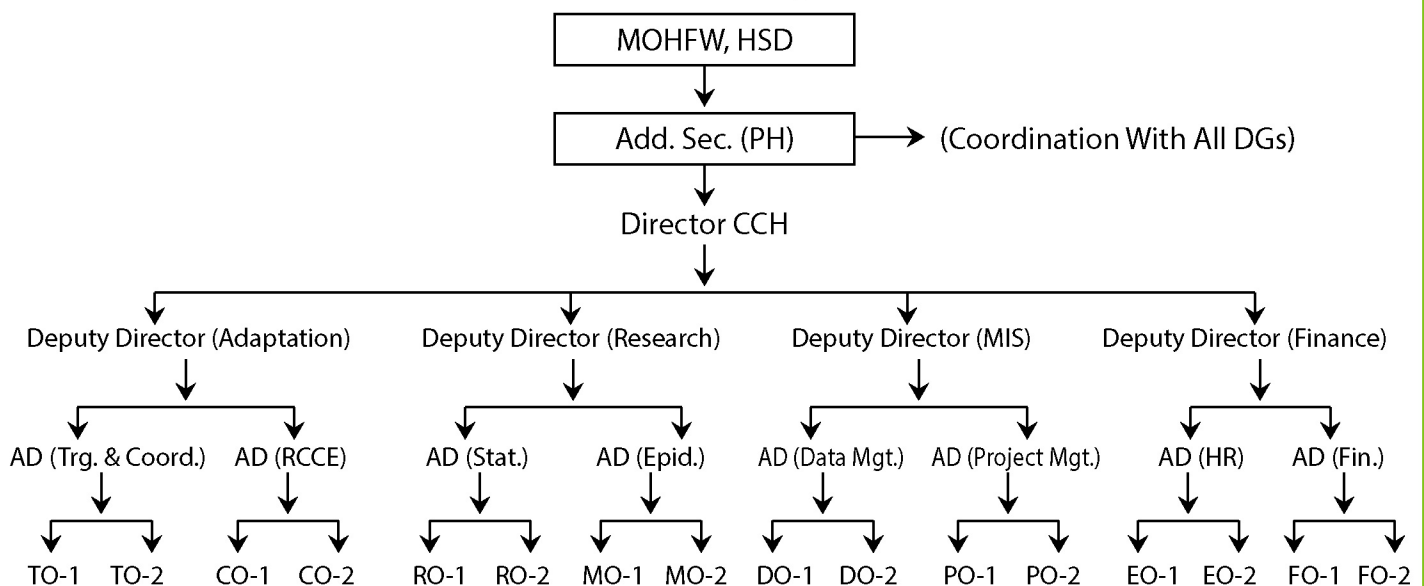


Decadal Variations of Temperature in the entire year with seasonality from 1981-2022 in Patuakhali

- Bangladesh is one of the countries expected to be worst affected by climate change. Human health in tropical developing countries will be affected by climate change. Drainage congestion and standing water will increase the potential for outbreaks of cholera and other waterborne and diarrheal diseases.
- Bangladesh is experiencing erratic weather patterns along with a sustained rise in temperature and precipitation. Evolving climatic conditions have had detrimental effects on physical and mental health, leading to an increase in prevalence and variation of infectious diseases and mental health issues such as depression and anxiety disorders. Strengthening healthcare and response systems is essential in mitigating the impacts of climate change on physical and mental health.
- Although it is unequivocal that climate change affects human health, it remains challenging to accurately estimate the scale and impact of many climate-sensitive health risks. However, scientific advances progressively allow us to attribute an increase in morbidity and mortality to human-induced warming, and more accurately determine the risks and scale of these health threats.

## Proposed Organogram of CCHPU

(Directorate of Climate Change and Health)



AD = Assistant Director, TO = Training Officer, RO = Research Officer, MO = Medical Officer, CO = Communication Officer, DO = Data Officer, PO = Project Officer, EO = Executive Officer, FO = Finance Officer

## **Institutionalize Climate Change and Health Promotion Unit as a regular entity of MOHFW:**

Ministry of Health and Family Welfare has become an example in South-East Asia in addressing CCH since the establishment of CCHPU in 2010. CCHPU was established with a view to build capacity and strengthen health systems to combat the health impact of climate change and to protect human health from current and projected risks due to climate change.

Climate Change and Health Promotion Unit (CCHPU) of HSD, MoH&FW needs to be institutionalized for mainstreaming policy of the Government of Bangladesh's (GoB) with priorities to address emerging issues caused by climate change. The 4th Health Population Nutrition Sector Plan (HPNSP 2017-2022) has included a climate change and health component with a sector-wide management, coordination and collaboration operational plan.

Despite this prioritization by the GoB, efforts and engagement of the MoH&FW on climate change and health adaptation issues are limited. This can be done by strengthening the administrative and technical capacity of the Climate Change and Health Promotion Unit (CCHPU) of MoH&FW and by mainstreaming climate-sensitive activities and monitoring indicators on Operational Plans (OPs) of the Directorate General of Health Services and the Directorate General of Family Planning. At the sub-national level, health services (human resources, logistics, and warning systems) and health facility infrastructure need to be strengthened in order to be able to efficiently manage the negative consequences of climate change.

The MoH&FW should prioritize for effective implementation of the recently developed Health National Adaptation Plan in collaboration with other line ministries, academia, industry, NGOs, communities, development partners and other relevant stakeholders.

### **Way Forward:**

The COVID-19 pandemic is shining a spotlight on the importance of robust and resilient health care systems that serve the needs of both the wealthy and people living in poverty. Strengthening the overall capacities and resources of health systems will increase adaptive capacity to deal with climate impacts while providing many other benefits. Increasing human capacity and financial resources is paramount to ensuring that effective measures are taken to better manage rapidly mounting climate-related risks to health.

## **Policy Recommendations:**

By 2050, Bangladesh is expected to experience an increase in temperature of about 1.5°C. And between 2040 and 2059, annual rainfall is also expected to increase by 74 millimeters. These projected changes will escalate spread of infectious diseases and mental health issues. By taking urgent actions, Bangladesh can remain better prepared to adapt and/or mitigate the impacts of climate change on health.

### **This policy brief suggests some ways for better adaptation:**

#### **Institutional Framework**

Institutional framework for CCHPU with revenue budget under the MOHFW to mainstream CCH across the Directorates (DGHS, DGFP, DGNM, DGDA, DGHEU, HED) and coordination with other relevant Ministries, Development Partners and academia.

#### **Improved Data Management**

Improved data collection systems will help the country better track the evolution of climate-sensitive diseases and predict potential disease outbreaks.

#### **Strengthening Research**

Strengthening research and analytical capacity to mainstreaming climate adaptation into health sector policy and planning



*District Level Health Adaptation Plan, Additional Secretary (PH) addressing*

### **Published by:**

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