Chapter 1
Introduction

Although Bangladesh has made significant progress in human development[1] in recent years, the majority of its population still live in poverty (Box 1). Frequency and impact of natural hazards are among the key factors accountable for wide disparities in the incidence of poverty at household and geographical level. Poverty makes many people vulnerable to disasters, while many remain in poverty because of the adverse impacts of disasters.

Box 1: Key facts about Bangladesh

- **Population** – 143.8 million in 2002 (Source: United Nations Development Programme [UNDP] Human Development Report 2004a)
- **Poverty** – 49.6% of the population living on less than $1 per day. (Source: Government of Bangladesh/UNDP 2005)
- **Gross domestic product (GDP)** – U.S.$351 per capita in 2002 (Source: UNDP Human Development Report 2004a)
- **Life expectancy** – 62 years (Source: World Bank Report 2005)
- **Disaster related events from 1970-98** – Total events - 171, which killed a total of 516,239 people and affected 428m (UNDP – Disaster in Least Developed Countries – data sheet)
- Annual frequency of disaster: 6.11 since 1970; 8.07 since 1985 (UNDP)

Bangladesh faces many types of disaster – from geophysical and hydrometeorological to industrial to food-related crises. The Comprehensive Disaster Management Programme (CDMP) lists floods, cyclones, earthquakes, tornadoes, river bank erosion, water logging, drought, salinity, storms, landslides, and tsunami as major hazards to which the people and their livelihoods are vulnerable in Bangladesh. The list also includes other hazard trends such as industrial pollution, fire, epidemics, and food-related disasters as well as political violence. These disasters hit the country's agro-ecological areas: flood plains, small hilly regions, and urban centres.

The World Bank's Global Risk Analysis (World Bank 2005) placed Bangladesh in a list of 60 countries which face two or more hazards per year. It states that 32.9% of the total population are exposed to four types of hazard. The UNDP disaster vulnerability

[1] Bangladesh's HDI rank was 137 in 2006, from 145 in 2002 (UNDP 2006 and 2002).

index, published in 2004, places Bangladesh among the most vulnerable to disasters. Weather-related data from NatCat*SERVICE* of Munich Re was used by Germanwatch to place Bangladesh between two and three in their Climate Risk Index[2] (CRI) in 2006.

With the highest disaster mortality rate in the world (UNDP 2004), Bangladesh lost 516,239 men, women, and children in 171 disastrous events from 1970-2005. The economic costs to the country associated with such disasters continue to grow, while the impacts on livelihoods at household level are not accounted for during loss estimations of disasters. The traceable economic costs of the 1991 cyclone, which killed 150,000 people, were $2 billion. Bangladesh faces at least one major disaster a year and more than one in some years. Twenty-one per cent of the country's land surface is flooded every year, and 16 major floods occurred from 1954-2007. As many as 251,384 deaths have occurred because of tropical cyclones worldwide from 1980-2000. Bangladesh accounts for more than 60% of the deaths registered in this period, while the Philippines has the greatest frequency of tropical cyclones in terms of deaths reported (UNDP 2004). A very large proportion of the population of Bangladesh – particularly the heavily populated rural communities along the fertile delta at the confined head of the Bay of Bengal – is exposed to tropical cyclones. The large number of recorded deaths shows that, in this case, high vulnerability accompanies high physical exposure.

Developing a comprehensive (national) vulnerability analysis is a complex issue, since many generalisations that can be made on a national basis have differential relevance to local contexts even though the country is not very diverse ethnically or agro-ecologically. Whatever geophysical and climatic conditions exist, the density of population, poverty, and limited disaster support systems are among the reasons for Bangladesh's vulnerability. The four following key factors are reasons for the national vulnerability to natural hazards.

- **Location** – Bangladesh is located in the Ganges-Brahmaputra-Meghna system, the second largest river system in the world. All three rivers flow through Bangladesh, carrying 1,250 billion cubic metres of water. The terrain is comprised of flood plains, terraces, and hills. This region, known as the Himalayan region, is an active tectonic zone.
- **Climate change** – The nation continues to be at risk from all types of disaster; and the impact of climate change might increase these risks.
- **Governance** – Protection of vulnerable people is yet to become the legal responsibility of the government. Limited resources, poor capacity, limited capability, and lack of regional cooperation are other factors limiting government performance in disaster reduction.

[2] The Climate Risk Index (CRI) analyses how countries are affected by weather-related losses. In the face of climate change and its expected impacts they have to be seen as indicators of climate risks. Also see the Climate Change Performance Index (CCPI) developed by Germanwatch which includes an index-based analysis of the emission levels, the emission trends, and the climate protection policy. http://www.germanwatch.org/ccpi.htm

- **People's vulnerability** – As in many developing countries, rural housing in Bangladesh is more vulnerable to high winds, flooding, and landslides than urban housing and is associated with higher mortality generally.

Vulnerable communities collectively, and their members individually, develop their own ways of dealing with exceptional circumstances (coping mechanisms) caused by disasters (Alam 2006). This is also the case with people in Bangladesh. Thus traditionally, in the absence of government support, farming communities have drawn up and implemented their own preparedness plans according to their abilities and resources.

The Ministry of Food and Disaster Management of the Government of Bangladesh (MoFDM) is the main body responsible for national disaster preparedness as per the Hyogo Declaration adopted at the World Conference on Disaster Reduction (2005) held in Kobe, Japan. Normally, government practice was to carry out relief and rehabilitation activities after a disaster. Disaster preparedness was limited to broadcasting river water levels at critical stations, indicating prospects of flooding, and announcing the formation of depressions over the Bay of Bengal which might turn into cyclonic storms.

However, the perspective on disasters is changing in the following ways.

a) National and international policies and processes have more influence than before over the vulnerability context.
b) Dependency on formal institutions rather than traditional social networks and support systems has increased.
c) The nature and magnitude of disasters are changing because of climate change and growing urbanisation.

Therefore, analysis of national disaster preparedness is important not only for the nation concerned but also for global reduction of disasters. This report discusses key issues related to disasters in Bangladesh, their evolution, current status of disaster preparedness plans, gaps in the plans, and shortcomings in their implementation. (It is not meant to be a comprehensive analysis, as this can be found by consulting the literature.) It also takes into account disaster management instruments, institutional arrangements, and policies at national and local level. Finally, the author offers his own analysis of the key performance issues arising from the implementation of various plans.

The analytical framework used in the report has three core components.

a) Natural hazards are analysed within the context of Bangladesh's location within the Himalayan or Ganges-Brahmaputra-Meghna (GBM) geophysical region.
b) Disaster preparedness (DP) plans are presented as they were until February 2007.
c) Various national and international commitments, such as the Hyogo Framework for

Action (HFA) and the author's own extensive research on people's vulnerability to natural disasters were the basis of the commentaries on gaps in the plans and their implementation. In preparing the report, key people in Bangladesh were interviewed.