



**VULNERABILITIES AND RESILIENCY OF THE  
COASTAL PEOPLE IN BANGLADESH: A  
SOCIOLOGICAL STUDY OF SATKHIRA COASTAL  
AREAS**

**BY**

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## **ABSTRACT**

This study aims at investigating the household experiences of the people in southwestern coastal areas of Bangladesh, mainly in a village called Napitkhali. Based on empirical data collected at the village level, the research analyzes their vulnerabilities and resilient capacities against several natural disasters. By employing Risk Society Theory (RST) of Ulrich Beck (1992), the analysis developed mostly three main thematic experiences. These are vulnerability, resiliency, and finally focusing on the difference in the level of vulnerability and resiliency. From the methodological point of view, the study relied heavily on qualitative methods for collecting data. In addition, a small survey was conducted to provide the demographic information, making the study holistic in nature. The findings focused on different major sub-themes related to vulnerabilities due to natural disasters by revealing that these vulnerabilities are manifested centrally under livelihood options and other social necessities of everyday life. In the later section, it shows that despite facing continuous vulnerabilities, the villagers have the capacities to get rid of them through finding proper alternatives. The last part of the research findings exposes that both vulnerability and resilient strategies are embedded by the socio-demographic factors which are significant in creating differences in the level of vulnerability and resiliency of the villagers. The discussion part of the thesis primarily reveals that the RST of Ulrich Beck is mostly true for these villagers of Napitkhali. However, the theory is modified slightly as the discussion establishes that both the vulnerabilities and the alternative mechanisms are dynamic processes for these villagers based on their socio-demographic characteristics.

## خلاصة البحث

تهدف هذه الدراسة إلى التحقق من خبرات وتجارب العائلات في المناطق الساحلية الجنوبية الغربية من بنغلاديش، وخصوصاً في هذه القرية التي تدعى نابي تخالي (Napitkhali). وبناءً على البيانات التجريبية التي جُمعت على مستوى القرية. حيث يقوم هذا البحث بتحليل نقاط الضعف وقدرات التحمل ضد الكوارث الطبيعية، مع توظيف نظرية مخاطر المجتمع (RST) للأولريش بيك عام (1992م)، وقام التحليل بتطوير كبير في ثلاثة تجارب موضوعية رئيسة، وهي نقاط الضعف، والقدرات التحمل، وأخيراً. الفروق التي ركزت على مستوى الضعف والقدرات. ومن وجهة النظر في المنهجية، حيث إن الدراسة تعتمد بشكل كبير على منهج النوعية في جمع البيانات. بالإضافة إلى ذلك تم إجراء مسح بسيط لتوفير المعلومات الديموغرافية، مما يجعل هذه الدراسة شاملة عن الطبيعة، والنتائج تسلط الضوء على مختلف المواضيع الرئيسية الفرعية التي ترتبط بالضعف بسبب الكوارث الطبيعية من خلال الكشف عن الضعف التي تظهر في وسط إطار خيارات طرق العيش والضروريات الاجتماعية، الأخرى من الحياة اليومية. وأما القسم الأخير فإنه يظهر على الرغم من مواجهة نقاط الضعف المستمرة، إلا أن القرويون لديهم إمكانية التخلص من هذه المشكلة من خلال إيجاد البدائل المناسبة، والجزء الأخير من نتائج البحث، حيث يعرض استراتيجية كلا من الضعف والتحمل، والتي لا تفصل الأول عن الآخر من خلال العوامل الاجتماعية والديموغرافية ذات أهمية في خلق اختلافات في مستوى الضعف والتحمل لدى القرويين، والجزء الرئيس الذي يدور عليه هذه الدراسة هو الكشف عن RST للأولريش بيك والتي تعتبر نظرية دقيقة عند القرويين في نابي تخالي (Napitkhali). ومع ذلك فإنه يتم تعديل النظرية قليلاً كما جاء في المناقشة هذا البحث أن كلا من الضعف و الآليات البديلة هي العمليات الدينامية لهؤلاء القرويين على أساس الخصائص الاجتماعية الديموغرافية .

## **APPROVAL PAGE**

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## DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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SATKHIRA COASTAL AREAS**

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*This research is dedicated to my:*

*Family and the villagers of Napitkhali*

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## LIST OF ABBREVIATIONS

BBS	Bangladesh Bureau of Statistics
BDRC	Bangladesh Development Research Center
BDT	Bangladeshi Taka
CDMP	Comprehensive Disaster Management Programme
CGIAR	Consultative Group on International Agricultural Research
CNRS	Center for Natural Resource Studies
EGPP	Employment Generators Pilot Projects
EPA	Environmental Protection Agency
GoB	Government of Bangladesh
GDP	Gross Domestic Product
IDMVS	Institute of Disaster Management and Vulnerability Studies
IEDM	International Environment and Disaster Management
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IWFM	Institute of Water and Flood Management
MBBS	Bachelor of Medicine and Bachelor of Surgery
MOEF	the Ministry of Environment and Forest
NAPA	National Adaptation Programme of Action
NGO	Non-Government Organization
OECD	The Organization for Economic Co-operation and Development
PhD	Doctor of Philosophy
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children's Emergency Fund
UNISDR	The United Nations Office for Disaster Risk Reduction
UP	Union Porishod
US	United States
VGD	Vulnerable Group Development
VGF	Vulnerable Group Feeding

# CHAPTER ONE

## INTRODUCTION

### 1.1 BACKGROUND OF STUDY

Bangladesh is one of the most populous yet less developed nation of the world located in the South Asian region with a predominant dependence on agriculture. According to the Census of 1991, a total of 112 million people of Bangladesh live in an area of about 143,999 sq. km. which includes both its inland and estuarine water exteriors. The 1986 Agricultural Census of Bangladesh reported that more than 75% of its population are dependent on agriculture or agriculture-related activities. This over dependency obviously puts an excessive pressure on its farming land and the estuarine areas of the country (Gain, 2002). Furthermore, Bangladesh is a tropical country, mostly constituting the main land and a few districts located at the coastal areas directly facing the Bay of Bengal. The physio-geographical location of Bangladesh with its climatic features has been clearly documented as follows:

Bangladesh is located between 20° to 26° North and 88° to 92° East. It is bordered on the west, north and east by India, on the south-east by Myanmar, and on the south by the Bay of Bengal. Most of the country is low-lying land comprising mainly the delta of the Ganges and Brahmaputra rivers. Floodplains occupy 80% of the country (Agrawala, Ota, Ahmed, Smith, & van Aalst, 2003).

This particular geographical position along with the climatic unpredictability places the country as the most disaster-prone region in the world (Mirza, 2003). And for that geographical reason, low lying coastal settlements of this country are mostly affected by several disasters in the form of cyclones, floods, river-bank erosion and tidal surge (Islam, 1999; Paul & Rahman, 2006). The frequent occurrences of various disasters in Bangladesh demonstrate the fact that the lives and livelihoods of the

coastal people are very much threatened by many ecological catastrophes and socio-economic problems. This is why the coastal region of Bangladesh<sup>1</sup> is considered as one of the most vulnerable<sup>2</sup> regions in the world which eventually affect the socio-economic lives of the people living in these areas (Mestres, Sanchez-Arcilla, Sierra, Mösson, del Río & Rodilla, 2004).

The coastal belt of Bangladesh includes approximately 20% of the total land area of the country but the whole area is divided into three zones, namely eastern, central and western coastal zones. These zones altogether are scattered to include over 19 districts of the country<sup>3</sup> located in low-lying areas facing the sea directly (Islam & Ahmad, 2004; Sarwar, 2005; Haque, 2006). Sarwar (2005) estimates that there are around 35.1 million people in Bangladesh who live in these coastal zones who constitute 28% of the total population of the country (BBS, 2007).

Intensification of global environmental risks cause low lying coastal regions to be the worst affected areas than other plain land of any country (McGranahan, Balk & Anderson, 2007). This statement holds true for Bangladesh coastal areas as many research (e.g., Dasgupta, Huq, Khan, Ahmed, Mukherjee, Khan & Pandey, 2010) show that the devastating cyclone alone destroys Bangladesh coastal areas in almost every three years, making a sequential trend. This span of time, however, appears to be lessening gradually compared to the past.

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<sup>1</sup> Geographically, coastal areas are those places where land, water and wind/air mix in same place (Bird, 2000).

<sup>2</sup> Blaikie, Cannon, Davis and Wisner, (2004: p 11) define vulnerability as “*the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard (an extreme natural event or process)*”. A vulnerable situation includes a group of aspects that control the elements to which someone’s life, livelihood, property and other assets are set at risk (Blaikie et al., 2004). It is also well recognized that a situation can be regarded as vulnerable only when the natural disasters cause some negative impact on the helpless people. But if they have enough mitigation support to overcome all these miseries, the group may not be considered as vulnerable (Cannon, 2002; Islam & Ahmad, 2004).

<sup>3</sup> It has been found that out of a total of 64 districts, only 19 districts are located in this coastal belt (For more on this see Haque, 2006; Sarwar, 2005).

It was found that a devastating cyclone called Sidr had devastated the coastal region of Bangladesh in 2007. Cyclone Nargis hit the coast in the following year in 2008 and two years after Sidr, two more cyclones named *Bijli* and *Aila* wrecked the region in 2009 and Cyclone Mohasen hit in 2013 (Peterson & Baringer, 2009; Kniveton, Martin & Rowhani, 2013). The regular hits of these multiple natural disasters and tightening gaps of these incidences demonstrate the fact that the regular lives and livelihoods of the coastal people are threatened time after time (Benson & Clay, 2004; Mestres et al., 2004). This threat on the coastal people multiplies when other natural disasters (e.g., floods, river bank erosion and land erosion) coupled by density of population, burdensome of coastal eco-systems, struggle in utilizing natural resources and pressure on the economic opportunities of poor groups of people occur concurrently (Islam, 2004; McGranahan et al., 2007). This overall scenario of coastal sufferings where societal groups face complications due to various natural causes is considered as coastal vulnerability (Cutter, 1996). An example of coastal vulnerability is when Cyclone Sidr triggered the destruction on the coastal people through three natural disasters which were storm surge, flood and strong wind. In terms of monetary loss:

The total amount of damage and loss caused by Cyclone Sidr in Bangladesh has been estimated at BDT 115,600 million (US\$ 1,675 million). Damages, which are an expression of the destruction of physical assets, were estimated at BDT 79.9 billion (69 percent of total effects), while losses were estimated at BDT 35.7 billion (31 percent of the total) (GoB, 2008, p.38).

Of all the coastal areas, the southern part remains in continuous threat, creating enormous sufferings and sorrow for the people of this region. These sufferings are further argued by global climate change which is responsible for floods, land erosion, salinity intrusion and loss of bio diversity (Ahmad, 2003; Sarwar, 2005). It

has also been documented by many researchers that Bangladesh has bountiful fertile agricultural land. Yet, the inhabitants continuously suffer from food scarcity. The main reason for such food scarcity lies in the fact that the country has to face various natural disasters that cause serious ecological degradation. Consequently, this vulnerability heavily impacts some marginal groups of people which in turn gives birth to a malnourished future generation (Thulin & Allegrini, 2012).

Some researchers (e.g., Bohle, Downing & Watts, 1994) have expressed their views by stating that income is the prime variable to regulate vulnerabilities. But besides income, other social factors like aid, endowment, goods and services also often play important roles in determining the vulnerability of the society. In the case of poor and marginal people, it becomes more severe because environmental difficulties are heavy burden on them.

Like in many other developing countries, the livelihoods of Bangladesh coastal areas are very much tied up with natural resources like agriculture, forestry, fishery or other similar sources. Thus the offensive non-stop natural disasters on these livelihood strategies have a hostile influence on food, work and other social securities. Moreover, coastal areas of developing countries like Bangladesh have less financial and institutional capacities to overcome the effects of natural disasters. Low per capita GDP (Gross Domestic Product), excess deficiency and lack of precautions are some important causes for their high vulnerability. They specify that only the resilient capability of these people can reduce their vulnerability to some extent (Thomas & Twyman, 2005).

On the other hand, just like vulnerability, resiliency is a very regular experience for the coastal inhabitants. Insecurities and worries cause them to be competent in discovering innovative substitutes that can steadily improve their

livelihoods against those concerns. People of this area consider both short-term and long-term procedures to overcome these vulnerabilities but they can sometimes successfully overcome the problems or they can sometimes fail to do that. For resiliency to exist, people should be self-aggravated to bring stability to their livelihood and to get rid of all kinds of uncertainty from their lives (Marschke & Berkes, 2006).

Due to climate change, natural disaster has become a regular phenomenon for the coastal people in general all over the world; nevertheless, their capacity for resilience is often very dissimilar. This is because of their different levels of social and economic capacities (Blaikie, Cannon, Davis & Wisner, 2004). For obvious reasons, being economically poor and underdeveloped, Bangladesh faces greater vulnerabilities compared to other developed nations in the world. People's resiliency therefore, becomes a complex phenomenon, further aggravating the situation and making it more complicated for the coastal people (Salauddin & Ashikuzzaman, 2011; EPA, n.d).

As part of the mitigation, coastal villagers of Bangladesh undertake various indigenous and organizational mechanisms to cope with and bring resilience in their vulnerable situation. Rashid (2013) considers a few determinants which can help in developing the vulnerability. Among many other determinants, he mentions demographic characteristics, skills, resource backup (physical, technological, financial, social and human), construction, coping capacity, social network, information, exposure and experience to past hazards as important to determine vulnerability.

In their paper, Handmer, Dovers and Downing (1999) assert that vulnerability is a virtual paradigm which is not equal for all. According to them, some people or

individuals of a particular society are seen to be more vulnerable than others. To illustrate this, it is further added that food insecurity is an important example of vulnerability for developing nations, which is not however, the cause for vulnerability for developed nations. They conclude by saying that vulnerability is a dynamic phenomenon and this has been exemplified by differential levels of vulnerability in some regions of Africa, Eastern Europe and Soviet Union which are caused by climate change.

Finally, it may be stated that if a community or an individual has enough alternatives to cope with these natural disasters and the suffering disasters bring with them, they are not considered as vulnerable. Few (2003) states in his paper the coastal people carry on with their lives despite their small income, illness, having to take care of aged people, living without insurance or financial reserves, enduring poverty and environmental vulnerability in their everyday life.

## **1.2 STATEMENT OF THE PROBLEM**

This present research on vulnerabilities and resiliency seeks to investigate the sufferings faced by a group of people and the survival strategies taken by them to survive living in a coastal village. Specifically, this research generates data from the south-western coastal areas of Bangladesh, in Satkhira District. Contextually, the research explores the mechanisms that the inhabitants of this region adopt to survive despite the natural calamities.

Blaikie and his associates (2004) mention that of the many different types of natural disasters<sup>4</sup>, cyclones and storm surge are the most potent natural hazards in the coastal areas. These cyclones are dangerous, as they combine spreading of floods and

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<sup>4</sup> “The term “natural disaster” is often used to refer to natural events such as earthquakes, hurricanes or floods” (Rashid, 2013, p. 26).

blowing of severe winds. Similarly, the storm surge facilitates waves of water as the winds hit the coasts (Blaikie et al., 2004). These disasters create huge social and natural impacts on humans. Global climate change has been blamed as the root cause for these cyclones and storms. Previously these were considered as part of the cyclical process of the seasons in these coastal communities.

Vulnerability is a condition that arises due to an environmental break down. In the same way in this dissertation, resilience is considered as a concept linked to this vulnerability. Adger (2006) states that, resiliency is such a capacity that allows the system to absorb the vulnerabilities and which allows the system to be self-protective which can be in advance to overcome from the shocks. In coastal Bangladesh, both the indigenous and social and communal mechanisms are used to bring resilience into their everyday life.

Previous researchers (e.g., Kasper, 2008; McVicker, 2012; Ludwig, Mangel & Haddad, 2001) mentioned in their papers that traditionally, resilience was not well thought-out by sociologists but now they are interested in this concept especially in understand how a community (e.g., coastal community) depends on natural resources for their survival. That is why some authors (Adger, 2000; Cutter & Emrich, 2006; Cutter, Boruff & Shirley, 2003) mention some indicators of social resilience, for instance, economic factors and demographic change. In elaborating these indicators, they articulate that for resilience to be achieved, economic development, steadiness in their income and livelihood strategies are necessary. In support of this idea, Adger (2000) states that resource-based community can be resilient by increasing their income strategies through “green revolution” where agricultural productivity increases quite a lot. Moreover, according to his analysis, the steadiness in livelihood strategies can be achieved with the acceptance of new technology and innovation and

investment in human capital. However, migration is a good option for any society to turn individuals into becoming resilient according to researchers (Adger, 2000; Adger, Kelly, Winkels, Huy & Locke, 2002; Black, Adger, Arnell, Dercon, Geddes & Thomas, 2011).

Some researchers (e.g., Cutter, Barnes, Berry, Burton, Evans, Tate & Webb, 2008; Adger, 2000; Tompkins & Adger, 2004; Tobin, 1999; Holzmann & Jørgensen, 2001; Thieme, 2006) continue to mention that the resilience of a nature-based society can be materialised through demographic change and this can be achieved through migration. This migration makes significant impacts on resources and social infrastructure for both the transferred and the host countries. Temporary migration is considered by these researchers as an important tool of resiliency at the household level because it provides livelihood security and generous source of remittance. In other words, this remittance can be a basis for long term economic stability with investment in education and other basic necessities (De Haas, 2007).

It has already been indicated that the socio-economic activities in the coastal areas of Bangladesh are quite different from those of the mainland, which however, is not an exception from other regions of the world. A significant number of research (e.g., Davies, 1996; Messerli, Grosjean, Hofer, Nunez and Pfister, 2000; Mallick, Rahman and Vogt, 2011; Lehtonen, 2004; Roseland, 2000) mentions that coastal people in Bangladesh are fully dependent on its locally available natural resources and its surrounding environment. As natural disasters most often affect their way of life, they eventually change their traditional subsistence. It also happens because of the fluctuation of their agrarian production and population displacement (Bertocci, 1970; Ericksen, Ahmad and Chowdhury, 1993). In a report of the BDRC, Gunter, Rahman and Rahman (2008) mention that coastal disasters limit the availability of natural

resources. This is because natural disasters create obstacles in every sphere of coastal life (e.g. ecological degradation, livelihood strategies and social lives). Based on the above discussion, it is notably clear that in coastal Bangladesh, the vulnerabilities and the nature of difficulties faced by the inhabitants of this region differ sharply from other areas of the mainland, due to their different ecological locations and other socio-economic positions (Zou & Thomalla, 2008; Melton, 2008). To overcome these, policy makers need to enhance proper planning and preparation and to understand this situation this research has been designed on a specific coastal area located in Satkhira District of Bangladesh.

Nevertheless, Kartiki (2011) points out that, though the natural disasters may affect all people but their resilience capacity differs because of their having different access to resources. It is expected that the underprivileged people have less access to resources, and their resiliency obviously will also be much lower and weaker than those of the affluent people.

Based on this, it can be clearly said that although disasters are very common for coastal people all over the world, the level of vulnerability and the resilient capacity are not however equal for all countries because of their divergent complexities (Engle, 2011; Sherrieb, Norris & Galea, 2010; Barnett, Lambert & Fry, 2008. UNICEF, 1991). Thus, it is also true that the vulnerabilities of the Satkhira coastal people vary because of their differential ecological settings and their socio-economic factors (Zou & Thomalla, 2008; Melton, 2008; Marschke & Berkes, 2006).

### **1.3 RESEARCH OBJECTIVES AND QUESTIONS**

The main purpose of this study is to know the vulnerabilities and resiliency of a nature-based society of the south-western coastal areas of Bangladesh. The research