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Capacities and Responses to Disaster Governance in Bangladesh: A Reflection from the SDGs

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Abstract

Bangladesh is one of the most natural disaster-prone countries of the world. The major disasters include flood, cyclone and storm surge, flash flood, drought, tornado, riverbank erosion, and landslide etc. These extreme natural events are termed as disasters when they adversely affect the environment, including human beings, their shelters, or the resources essential for their livelihoods. Disaster management is a true litmus test of effective governance. Many attributes of governance interplay in disasters, before, during and after a situation. The Government of Bangladesh has taken a number of significant measures in recent years for developing institutional arrangements from national to the local level levels for effective and systematic disaster management facilitating mitigation to the sufferings of disaster victims. With the government many Non Government Organizations (NGOs) are also playing important role in disaster management. Institutions are significantly important to disaster reduction. Governance is ensured through institutions. Disaster risk governance strongly calls for consideration of balancing both formal institutions and informal institutions and the inclusion of agencies and actors as well as different perceptions and types of knowledge of disaster risk reduction. The paper identifies some challenges that exist in disaster management and addressing of those are supposed to accelerate the process of achieving the SDGs.

Keywords: Disaster, Disaster Governance, SDGs

1. Introduction

1.1. Background

Disasters and how they are managed, have become the subject of increasing research and debate in recent years. Bangladesh is one of the most natural disaster-prone countries of the world. The major disasters include flood, cyclone and storm surge, flash flood, drought, tornado, riverbank erosion, and landslide etc. These extreme natural events are termed as disasters when they adversely affect the environment, including human beings, their shelters, or the resources essential for their livelihoods. Disaster management is a true litmus test of effective governance. Many attributes of governance interplay in disasters, before, during and after a situation. In the last decade the term 'governance' has gained tremendous prominence in the literature on international relations, comparative political science, policy studies, sociology of environment and technology as well as risk management. According to Rhodes (1996), there are six separate uses of the term governance: as minimal state, as corporate governance, as new public management, as good governance, as social-cybernetic systems and as self-organized networks. On a national scale, governance describes structures and processes for collective decision making involving governmental and non-governmental actors (Nye and Donahue, 2000). Governing choices in modern societies is seen as interplay between governmental institutions, economic forces and civil society actors (such as NGOs). At the global level, governance embodies a horizontally organized structure of functional self-regulation encompassing state and non-state actors bringing about collectively binding decisions

without superior authority (Rosenau, 1992). In this perspective non-state actors play an increasingly relevant role and become more important, since they have decisive advantages of information and resources compared to single states. It is useful to differentiate between horizontal and vertical governance (Benz and Eberlein, 1999; Lyall and Tait, 2004). The horizontal level includes the relevant actors in decision making processes within a defined geographical or functional segment (such as all relevant actors within a community, region, nation or continent); the vertical level describes the links between these segments (such as the institutional relationships between the local, regional and state levels). Interestingly, Disasters undermine development and jeopardize the achievement of the Sustainable Development Goals (SDGs).

1.2. Objectives

The broad objective of the paper is to understand governance and the role of institutions in disaster risk reduction at all levels. Specifically, the paper looked into how disasters can derail progress made towards the development, why disaster governance is so important to achieve Sustainable Development Goals (SDGs), how effective governance helps in reducing vulnerability to natural hazards and disaster risks, and what are the measures undertaken by formal and informal institutions and their interplay in reducing risks.

1.3. Method

Answers to these above mentioned questions are based on data and information collected from both primary and secondary sources. Primary data are first-hand information collected through various methods such as, interviewing, mailing etc. The secondary sources consist of books, journals, reports and other relevant publications. Two complementary theories namely the 'Institutional Theory' and the 'Disaster Risk Governance' were reviewed to provide a theoretical framework. Institutional theory emphasizes analysis of the formal-legal and administrative arrangements of government and the public sector.

2. Theoretical consideration

This paper tries to portray the disaster governance in Bangladesh in the light of two complementary theories namely, *institutional theory* and the *disaster risk governance*.

2.1. Institutional theory

Institutional theory attends to the deeper and more resilient aspects of social structure. It considers the processes by which structures, including schemes, rules, norms, and routines, become established as authoritative guidelines for social behavior. It inquires into how these elements are created, diffused, accepted, and adapted over space and time; and how they fall into decline and disuse (Scott, 2004). The roots of institutional theory run richly through the formative years of the social sciences, enlisting and incorporating the creative insights of scholars ranging from Marx and Weber, Cooley and Mead, to Veblen and Commons. In recent times Hoffman and Oliver-Smith (2001) are probably the key sources on the notions of institutional change, culture, and disaster risk.

Scholars distinguish two types of institutions-formal and informal. Formal institutions such as constitutions tend to persist for decades, and the architecture of sectoral governance tends to change within years. Informal institutions such as customs, traditions, norms, and religion tend to endure and seldom vanish in less than

hundreds of years and even a thousand years.

Institutions emerge as "the prescriptions that humans use to organize all forms of repetitive and structured interactions including those within families, neighborhoods, markets, firms, sports leagues, churches, private associations, and governments at all scales"; simply illustrated, "opportunities and constraints individuals face in any particular situation, the information they obtain, the benefits they obtain or are excluded from, and how they reason about the situation are all affected by the rules or absence of rules that structure the situation" (Ostrom, 2005). Such a situation includes disaster risk.

2.2. Disaster Risk Governance

It is obvious that there is no risk-free society. Disaster risks are actually driven by a number of unresolved, underlying causes such as vulnerable rural livelihoods, poverty, poor urban governance, lack of good governance, declining ecosystem services, and power inequality. Proponents of risk governance frameworks, Rayner (2007:165) suggests that "risk plays a central role in the displacement of governmental responsibility to private sector and NGO actors at the same time as facilitating government control over citizens." The first advanced effort is probably from the UNDP Global Report in 2004 entitled "Reducing Disaster Risk: A Challenge for Development", divided disaster risk governance into three categories: Firstly, economic governance, which means decision-making processes that affect a country's economic activities and their implications for equity, poverty, and quality of life. Secondly, political governance, which is the process of decision making to set legislative processes, formulates laws, regulation, and policies. Lastly is administrative governance, which is defined as the system of policy implementation that requires the existence of well-functioning government organizations at the national and local levels, and which play roles as enforcers of regulations related to disaster mitigation, building code enforcement, land use planning, environmental risk, and human vulnerability monitoring and safety standards (UNDP, 2004).

Basically 'disaster risk governance' as a complement to disaster risk management (DRM). DRG is about being mindful of a multifaceted, multi-level, multi-stakeholder approach and cross-scale dynamics. It strongly calls for consideration of balancing both contextual formal institutions (laws, regulations, policy) and informal institutions (norms, culture, customs) and the inclusion of agencies and actors (local-national-global with consideration of gender, age, and class), as well as different perceptions and types of knowledge of disaster risk reduction.

DRM is not dismissed, but in fact is embedded in the disaster governance concept. In comparison to DRM, what is actually new in DRG is greater emphasis on the decision-making process regarding disaster reduction policy and regulations with greater acknowledgement of the complexity, conflicts, and interests of actors, multidimensionality and interplay of various institutions and actors at multiple levels. DRG in other words provides the framework within which DRM is to be implemented.

3. Disasters in Bangladesh

Bangladesh is a victim to a variety of natural disasters. The major disasters concerned in the country are floods, cyclones, droughts, tidal surges, tornadoes, earthquakes, river erosion, fire, infrastructure collapse, high arsenic contents of ground water, water logging, water and soil salinity, epidemic, and various forms of pollution etc. (GOB, 2014). At different points of time, Bangladesh has witnessed the devastation of some of the worst natural

disasters of the world. Cyclones cause great havoc to human lives and resources. The severe cyclone of 12 November 1970 took a toll of 0.3 million human lives and damaged property amounting to billions of US dollars. The cyclone of 29 April 1991 killed 0.14 million people and damaged property of more than two billion US dollars. The recent cyclone SIDR was also severe in nature and took away lives of 3,406. Flooding is another common natural disaster. The flood of 1988 inundated 89,000 sq. Km. areas of 52 districts of the country and caused loss of 1517 human lives. The 1998 flood in Bangladesh with unprecedented duration of 65 days inundated 53 districts covering about 100,000 sq. km. areas and it killed 918 people (Khan, 2011). The 2004 flood inundated 40 districts and it took away lives of 747 people. Drought at some intervals also visits Bangladesh and causes disastrous crop failures. In 1979 the country was hit by a severe drought, which was termed by many as the worst in the recent past (MoFDM and CDMP, 2005). Here it may be mentioned that earthquake of severe nature also occurred in regions that are now parts of Bangladesh in the last century. Bangladesh is situated in the regions of high seismic risks.

The two transitional periods between southwest and northeast monsoons over the Indian sub-continent are characterized by local severe storms. These local seasonal storms popularly known as northwesters. These storms take heavy toll on lives and property of the people (Karmakar, 1989). The river bank erosion is an ongoing disaster. It is no less dangerous than other sudden and devastating calamities. Losses due to river erosion occur slowly and gradually. The effects of river erosion are long-term.

Arsenic contamination is considered to be a dangerous environmental threat and a serious health risk. It is identified as a public health emergency in Bangladesh. Saline water intrusion occurs in coastal districts such as Satkhira, Khulna, Bagerhat, Barguna, Pataskala, and Barisal. Agricultural production, fisheries, livestock, and mangrove forests are affected by higher salinity in the dry season.

4. Good Disaster Governance: A Cross-cutting Necessity in the SDGs

Disaster governance is an emerging concept in the disaster research literature that is closely related to risk governance and environmental governance (Tierney, 2012). Disaster governance is the way society as a whole manages its full array of disaster risks, which may be triggered by geological hazards (such as earthquakes); climate change and hydro-meteorological hazards (such as floods and cyclones); and conflict and war, in order to sustain development, human welfare, and dignity. It promotes the notion that there are many overlapping arenas (or centers) of authority for decision making and responsibility for disaster risk reduction (Lassa, 2010). Disaster governance consists of the interrelated sets of norms, organisational and institutional actors, and practices (spanning pre-disaster, trans-disaster, and post-disaster periods) that are designed to reduce the impacts and losses associated with disasters arising from natural and technological agents and from intentional acts of terrorism (Tierney, 2012).

Disaster governance often is characterised as a risk management system, which is collaborative, multi-party, and multi- level. There are many characteristics described in the literature that influence governance, but the most recognised are: *stakeholder involvement*, *cooperation and collaboration*, and *flexibility* (Gall, M., 2014).

- The importance of stakeholder involvement is widely recognised and considered essential to disaster governance.
- A second characteristic is cooperation and collaboration at a variety of scales. For example, the

distribution of government functions (e.g., administrative, managerial, regulatory) across a variety of state and non-state actors facilitates vertical as well as horizontal disaster risk management and creates local capacities, establishes trust, and enhances cooperation (Boyer-Villemaire et al. 2014; Djalante et al. 2011; Tompkins et al. 2008).

- Flexibility is the third major characteristic. The creation of ad-hoc groups and networks, community self-organisation, or the adjustment of policies, regulations, etc. are widely perceived as essential and important components of disaster governance (Cosens, 2013; Hilde, 2012; Van Koppen et al. 2010).

Benson (2016) highlighted that disasters undermine sustainable development. They result in loss of life and cause injury, sometimes with life-changing consequences. Furthermore, they destroy homes, schools, health clinics, hospitals, utilities, roads, markets and other social and economic infrastructure as well as damaging the natural environment. These direct, physical losses have further indirect consequences, disrupting livelihoods, education, access to health care and so forth, together leading to adverse secondary impacts on social and economic aggregates such as GDP, the balance of payments and budget deficits. Most fundamentally, disasters challenge efforts to reduce poverty. There may be long-term consequences for gender inequality too.

These synergies are explicitly recognized in the new post-2015 agenda for sustainable development. The Sendai Framework for Disaster Risk Reduction 2015–2030, as adopted by 187 United Nations (UN) member states at the Third World Conference on Disaster Risk Reduction in March 2015, states that while disasters significantly impede progress towards sustainable development, conversely effective disaster risk management contributes to sustainable development (UN 2015). The outcome document adopted at the Third International Conference on Financing for Development in July 2015 in Addis Ababa recognizes that development finance can contribute to a reduction in vulnerability and encourages consideration of climate and disaster resilience in development financing to ensure the sustainability of development results (UN 2015a). Finally—and most critically—the Sustainable Development Goals (SDGs) adopted by 193 countries at the UN Sustainable Development Summit in September 2015 explicitly targets risk reduction under 4 of its 17 goals.

The Sustainable Development Goals (SDGs), otherwise known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. In September 2015, the General Assembly adopted the 2030 Agenda for Sustainable Development that includes 17 Sustainable Development Goals (SDGs). Building on the principle of 'leaving no one behind', the new Agenda emphasizes a holistic approach to achieving sustainable development for all (FAO, 2016).

Box 1: Sustainable Development Goals (SDGs) at a Glance

Background	**Goals/Targets**
• Millennium Development Goals (2000- 2015) • Post 2015 Agenda • UN Sustainable Development Summit 2015	• 17 Goals • 126 Targets • 43 Means of Actions • 230 Global Indicators

The relevant goals focus on ending poverty (Goal 1); ending hunger, achieving food security and improved nutrition and promoting sustainable agriculture (Goal 2); making cities and human settlements inclusive, safe, resilient and sustainable (Goal 11); and taking urgent action to combat climate change and its impacts (Goal 13) (UN 2015b).

These 17 Goals build on the successes of the Millennium Development Goals (MDGs), while including new areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, among other priorities.

Box 2: 17 Sustainable Development Goals

- End poverty in all its forms everywhere
- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
- Ensure healthy lives and promote wellbeing for all at all ages
- Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Achieve gender equality and empower all women and girls
- Ensure availability and sustainable management of water and sanitation for all
- Ensure access to affordable, reliable, sustainable and modern energy for all
- Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all
- Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation
- Reduce inequality within and among countries
- Make cities and human settlements inclusive, safe, resilient and sustainable
- Ensure sustainable consumption and production patterns
- Take urgent action to combat climate change and its impacts
- Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation, and halt biodiversity loss
- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Strengthen the means of implementation and revitalise the global partnership for sustainable development

The goals are interconnected – often the key to success on one will involve tackling issues more commonly associated with another. The SDGs work in the spirit of partnership and pragmatism to make the right choices now to improve life, in a sustainable way, for future generations. They provide clear guidelines and targets for all countries to adopt in accordance with their own priorities and the environmental challenges of the world at large. The SDGs are an inclusive agenda. They tackle the root causes of poverty and unite us together to make a positive change for both people and planet.

Studies suggest that Bangladesh made significant progress in achieving some of the MDGs. It has already been mentioned that Bangladesh is prone to various types of natural disasters. Among other reasons, the prominent being its unique geographical location geological characteristics. Cyclones and tornados are quite common in Bangladesh cause great damage to human lives, their resources and also destroy institutions and infrastructures. As such, if these are subjected to frequent damages and dislocations then it become difficult for them especially the poor and the marginalized to come out of the poverty trap and hope for better standard of living. Because of its unique geographical location serving as drainage outlet for the great Himalayan melting

glaciers and monsoon rain that occurs in the Indo-Gangetic plains, Bangladesh is often subjected to large scale flooding inundating almost everything including homesteads, infrastructures and agricultural crops. Such phenomenon has extreme adverse affect on the lives and livelihoods of the people at large. This frequent loss of property and resources retard the process of development and make adverse impact on the achievements of different sustainable development goals and objectives. Drought causes crop failures which endanger food security. Such situation slows the process poverty eradication and impacts adversely on the health status of the common people especially those live below the poverty line. As a result, the achievement of various SDGs with the specified time frame becomes difficult especially for countries like Bangladesh. Saline water intrusion in coastal districts such as Satkhira, Khulna, Bagerhat, Barguna, Pataskala, Barisal are causing havoc especially in agriculture and availability of safe drinking water. Besides, fisheries, livestock, and mangrove forests are also affected by this new menace and becoming lives difficult for the people living in those areas and also adversely impacting the SDG achievements in various areas.

5. Governance of Disaster Management in Bangladesh

In recent years, Bangladesh has shifted its disaster management emphasis from a response and relief focus to a broader and more encompassing risk management framework. In the light of the above, now Bangladesh Government plays a comprehensive role in disaster management through an elaborate regulatory, policy and institutional framework. These are discussed below.

5.1. Regulative Framework of Disaster Management

Bangladesh's regulative framework for disaster management provides for the relevant legislative, policy and best practice framework under which the activity of Disaster Risk Reduction and Emergency Management in Bangladesh is managed and implemented. The framework includes:

5.1.1. Disaster Management Act

The Disaster Management Act creates the legislative framework under which disaster risk reduction and emergency response management is undertaken in Bangladesh, and the legal basis in which activities and actions are managed. It also creates mandatory obligations and responsibilities on Ministries, committees and appointments.

5.1.2. National Disaster Management Policy

The National Disaster Management Policy defines the national policy on disaster risk reduction and emergency response management, and describes the strategic policy framework, and national principles of disaster management in Bangladesh. It is strategic in nature and describes the broad national objectives, and strategies in disaster management.

5.1.3. Disaster Management Plans

The National Plan for Disaster Management defines in broad outline the systemic and institutional mechanisms under which disaster risk reduction and emergency response management is undertaken in Bangladesh. It outlines disaster management vision, strategic goals and conceptual framework. It establishes disaster management regulative and planning frameworks, and identifies priority areas for disaster risk reduction and emergency response management.

5.1.4. Standing Orders on Disaster

The Standing Orders on Disaster outlines the disaster management arrangements in Bangladesh and describes the detailed roles and responsibilities of committees, Ministries, Departments and other organizations involved in disaster risk reduction and emergency response management, and establishes the necessary actions required in implementing Bangladesh's Disaster Management Model, e.g., defining the risk environment, managing the risk environment, and responding to the threat environment.

5.1.5. Guidelines for Government at all Levels (Best Practice Models)

Guidelines for Government at all levels are developed as best practice models, and are used to assist Ministries, NGOs, disaster management committees and civil society in implementing disaster risk management.

5.2. Institutional Arrangement for Disaster Management

The Ministry of Disaster Management and Relief (MoDMR) of the Government of Bangladesh has the responsibility for coordinating national disaster management efforts across all agencies. In January 1997 the Ministry issued the Standing Orders on Disaster (SOD) to guide and monitor disaster management activities in Bangladesh.

The SOD has been prepared with the avowed objective of making the concerned persons understand their duties and responsibilities regarding disaster management at all levels, and accomplishing them. All Ministries, Divisions/Departments and Agencies shall prepare their own Action Plans in respect of their responsibilities under the Standing Orders for efficient implementation.

5.2.1. National Level

The National Disaster Management Council (NDMC) and Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) ensure coordination of disaster related activities at the National level. Coordination at District, Thana and Union levels is done by the respective District, Thana and Union Disaster Management Committees. The Disaster Management Bureau renders all assistance to them by facilitating the process. A series of inter-related institutions, at both national and sub-national levels have been created to ensure effective planning and coordination of disaster risk reduction and emergency response management.

The National Disaster Management Council (NDMC) headed by the Prime Minister formulates and reviews the disaster management policies and issue directives to all concerns. Inter-Ministerial Disaster Management Co-ordination Committee (IMDMCC) headed by the Minister in charge of the Disaster Management and Relief Division (DM&RD) implements disaster management policies and decisions of NDMC /Government. There is also a National Disaster Management Advisory Committee (NDMAC) headed by an experienced person nominated by the Prime Minister. There is also a National Platform for Disaster Risk Reduction (NPDRR) headed by Secretary, DM&RD and DG, DMB functions as the member secretary. This platform coordinates and provides necessary facilitation to the relevant stakeholders.

To deal with earthquake there is an Earthquake Preparedness and Awareness Committee (EPAC) headed by Honourable minister for MoFDM and DG, DMB acts as member secretary. For cyclone, there is Cyclone Preparedness Program Implementation Board (CPPIB) headed by the Secretary, Disaster Management and Relief Division to review the preparedness activities in the face of initial stage of an impending cyclone. In addition, there is Cyclone Preparedness Programme (CPP) Policy Committee headed by Minister, MoFDM and Secretary, DM&RD acts as member secretary. Disaster Management Training and Public Awareness Building Task Force

(DMTATF) headed by the Director General of Disaster Management Bureau (DMB) coordinate the disaster related training and public awareness activities of the Government, NGOs and other organizations.

At the national level, there is Focal Point Operation Coordination Group of Disaster Management (FPOCG) headed by the Director General of DMB to review and coordinate the activities of various departments/agencies related to disaster management and also to review the Contingency Plan prepared by concerned departments. In addition, there is NGO Coordination Committee on Disaster Management (NGOCC) headed by the Director General of DMB to review and coordinate the activities of concerned NGOs in the country.

There is also a specialized body for dissemination of disaster related information called the Committee for Speedy Dissemination of Disaster Related Warning/ Signals (CSDDWS) headed by the Director General of DMB to examine, ensure and find out the ways and means for the speedy dissemination of warning/ signals among the people.

5.2.2. Sub-national levels

At the district level, there is a District Disaster Management Committee (DDMC). DDMC is headed by the Deputy Commissioner (DC) coordinates and reviews the disaster management activities at the District level. The DDMC consists of the Deputy Commissioner of the District as the chairperson and members comprising all District level department heads, NGO leaders and civil society members. District Relief and Rehabilitation Officer (DRRO) acts as member secretary of the committee. Members of Parliament act as advisors of the committees. The committee is required to meet bi-monthly during normal period and as and when necessary during emergency situation.

Upazila (sub-district) is an important and vital administrative unit of Bangladesh. There is an Upazila Disaster Management Committee (UZDMC) at the Upazila level. The UzDMC consists of the Upazila Nirbahi Officer as the chairperson and members comprising all Upazila level department heads, NGO leaders and civil society members. The PIO acts as the member secretary of the committee. Members of Parliament act as advisors of the committees. The committee is required to meet bimonthly during normal period and as and when necessary during emergency situation.

Union Parishad is the lowest administrative unit in Bangladesh. There is a Disaster Management Committee at the Union level. The UDMC is chaired by the elected Chairman of the respective Union Parishad. The Union Disaster Management Committee consists of the Union Parishad Chairman as the Chairperson and members comprising all the Government department head at Union level, members of Union Parishad, NGO leaders working in respective union and civil society members. Secretary of the respective Union Parishad acts as the member secretary of the committee. The committee is required to meet bimonthly during normal period and as and when necessary during emergency situation.

Pourashava (municipality) is at the bottom of the urban administrative tier of Bangladesh. There is a Disaster Management Committee at the City Corporation/Pourashava level. The Pourashava Mayor is the head of the committee. The members of the Committee are all Pourashava commissioners, representatives from all the Government departments, NGOs and CBOs. Chief Executive Officer of the Pourashava is the member secretary of the committee. The committee is required to meet monthly during normal period and as and when necessary during emergency situation.

City Corporation Disaster Management Committee (CCDMC) is headed by the Mayor of City Corporations to coordinate, review and implement the disaster management activities within its area of jurisdiction.

5.3. NGOs' Role in Disaster Management

National and international NGOs and other civil society organizations – have important roles in disaster management. Bangladesh has one of the largest NGO communities in the world. Under the umbrella of their integrated development projects many of them are active in post-disaster response and rehabilitation operation as supplementary to the efforts of the government (Zimmermann et al., 2010). They are also playing role in advocating for improvements, encouraging and supporting positive initiatives and holding the government to account. The roles of some of them are mentioned below.

5.3.1. Bangladesh Red Crescent Society

Bangladesh Red Crescent Society's 'Cyclone Preparedness Program (CPP)' operates an extensive telecommunication network with 130 radio station that directly links Headquarter of CPP with coastal areas of Bangladesh. To receive the meteorological storm warning signals, each Unit Team Leader is provided with a transistor radio, to disseminate warning signals among the community Megaphone, Hand Siren, Signal Flag, Signal Light are provided to each team of volunteers. Volunteer team leaders are provided with bi-cycles, Motor-bikes to receive and disseminate storm warning signals.

The Building Community Disaster Preparedness Capacity Project (BCDPC) was implemented from April 1, 2006 to March 31, 2010 in 20 Upazilas under nine coastal Districts of Bangladesh with technical support from the European Commission and by a Consortium of the British, Swedish and German Red Crosses for reducing the cyclone disaster related vulnerabilities and improving life and livelihood in the targeted areas. The 2nd phase of the project continued up to June, 2011 with the support of the British, Swedish and German Red Cross in the same areas.

5.3.2. BRAC

In order to respond proactively to the increasing frequency and severity of natural disasters as well as other manifestations of climate change, BRAC's Disaster, Environment and Climate Change program is moving beyond relief and rehabilitation into institutionalized preparedness, risk reduction and management interventions as well as long term adaptation strategies. Cyclone Aila hit Bangladesh's low-lying coastal belt on May 25, 2009 affecting more than 3 million people in 63 sub-districts, with tidal surges inundating a large part of the region. BRAC's initial response was to provide emergency food and shelter, and then move quickly to assist Aila victims with sustained water and sanitation facilities as well as livelihood opportunities. Unprepared embankments and the lack of drinking water and dry land for planting crops emerged as major problems. In the wake of Cyclone Aila, BRAC ensured that communities were visited by health workers to disseminate information on health, nutrition and water borne diseases like diarrhea, typhoid and skin rashes. BRAC provided urgently needed drinking water by digging ponds, sinking deep tube wells and setting up desalination plants.

BRAC still is working with the Aila-affected communities to rebuild livelihoods through adoption of new technologies. It introduced salt-tolerant rice crops, fish cultivation and crab fattening in saltwater inundated areas. Grants were made to farmers to cultivate Genetically Modified Farm Tilapia (GIFT) and culture crabs in pens in submerged farmlands. Those without land were given work to make the pens for fish/crab culture.

5.3.3. CARITAS

CARITAS through tries to improve understanding and awareness of the selected community and stakeholders about the present and future drought impacts on their lives and livelihoods, associated risk and vulnerability and to improve coping mechanism and enhance adaptive capacity of the vulnerable community, particularly of the

poor, marginal group and women to address drought impacts, related risks and vulnerability. It also assist the disaster-affected communities with immediate food and non-food items, crop recovery supports, reconstruction works as well as creation of employment opportunities through cash for works like cleaning homesteads and ponds; reconstruction of village roads; canal re-excavation; embankment repairing; installation of water and sanitation facilities; low cost houses construction; professional support (e.g., distribution of boat and fishing nets, rickshaws, vans, cows, sewing machines), repairing of existing cyclone shelters and construction of flood/cyclone shelters.

CARITAS also tries to strengthen the capacity of the disaster vulnerable community through building disaster management structure and linking the structure with local government as well as facilitating the community for the preparation and implementation of community based disaster risk management plans through networking and local resource mobilization.

5.3.4. Young Power in Social Action (YPSA)

Young Power in Social Action (YPSA) is implementing a project "Make community-based disaster risk management inclusive in South Asia". The principal objective of this project is to "contribute to reducing the vulnerability of South Asian populations living in areas most affected by natural disasters, by increasing the awareness and the response capacities of local communities to potential and frequent natural disasters and to reduce the effects on the most vulnerable". This is a regional project and is being implemented in 5 countries of South Asia, namely Afghanistan, Bangladesh, India, Nepal and Sri Lanka. The Handicap International Bangladesh is responsible to implement the component in Bangladesh. As a part of implementation strategy, Handicap International Bangladesh has entered into partnership with Young Power in Social Action (YPSA) for quality implementation, sustainability and joint advocacy.

5.3.5. Concern Universal Bangladesh

Concern Universal works together with the communities most vulnerable for natural disasters, local institutions, NGOs, National and International actors for mainstreaming disaster risk reduction initiatives. As part of the national and local network, it facilitates practical actions for development and strengthening of institutions, mechanisms and capacities at all levels, that can contribute to building resilience to hazards. Disaster Risk Reduction is one of the key programming priority sectors of Concern Universal to development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level that can systematically contribute to building resilience to hazards.

5.3.6. Oxfam

Oxfam's is working on the River Basin Program. The River Basin Program (RBP) intends to demonstrate a robust intervention model that reduces the vulnerability of people, particularly women, living in *char* and *haor* areas. The focus areas include minimizing the effects of flooding by constructing flood shelters, cluster villages and raised homesteads and increasing awareness to public health; strengthening livelihoods by providing trainings for developing skills, financial support, and linkages with markets; and helping people being prepared by training them to cope and live with floods, providing emergency stock pilling and coordination, and undertaking advocacy for disaster preparedness with governments and other actors.

6. Challenges to Disaster Management and Achievement of SDGs

In recent years, in Bangladesh, there has been a policy shift with respect to disaster management. Now, it has

moved from a response and relief focus to a broader and more encompassing risk management framework. In line with the above, the Government in recent years has undertaken a large number of policy initiatives as well as interventional activities. It still has a long way to go in achieving various SGDs for that there are also many challenges that need to be addressed in the area of disaster management. As we all know that effective disaster management will accelerate the process of SDGs achievement and failure to do the same will thwart the process. The challenges that required to be addressed are:

6.1.1. Increasing Professionalism in the Disaster Management System

The disaster management system has not yet been professionalized in the true sense of term. For this purpose, more focused initiatives are to be taken to further develop the capacity of the concerned Ministry and its relevant attached offices in developing and updating policies and legislations on disaster management. Education and training programs especially for officials working in agencies related with disaster management should be continued. This will help in creating a resource pool within these organizations and thereby help the process of professionalizing the disaster management system in the country.

6.1.2. Forging Partnership and Capacity Building

There is a new challenge in the wake of the climate change. Coping with this change needs new knowledge and skills. Bangladesh has resource constraints both human and material. To fill in this gap more partnership especially international should be forged with institutions and organizations around the world to share and disseminate emerging knowledge and information on different dimensions of disaster and their management. To generate knowledge, multi disciplinary research initiatives should be promoted.

6.1.3. Extensive Use of Media

Media has an important role to play in disaster management. But media is not being used intensively especially for disseminating information and building awareness on disaster management at the mass level. Both print and electronic media should also be used for the purpose through a well developed action plan developed on the basis of experience and lessons learned in disaster management over the years.

6.1.4. Acquiring Advanced Technologies and Allocation of More Resources

New technologies are emerging to combat disaster situation and minimize its negative impacts on lives, assets and properties and above all livelihood of the disaster affected people. Acquiring these, need increased financial allocation especially from the government. But as a developing country Bangladesh has resource constraints. This constraint poses a challenge to efficient effective disaster management.

6.1.5. Increased Community Empowerment and Participation

Here empowerment means sensitization of the masses especially towards disaster risk reduction. Concerted effort for the above purposes needs effective coordination of the efforts of the concerned stakeholders. The achievement of the desired level of coordination for the said purpose is also a challenging task.

7. Conclusions

Disasters especially natural ones are very common in Bangladesh. The major disasters that the country frequently encounters are flood, cyclone and storm surge, flash flood, drought, tornado, riverbank erosion, and landslide etc. These disasters adversely affect the environment, lives and livelihoods, assets and resources. Bangladesh is a signatory country striving to achieve the SDG. But as disasters cause great loss to lives, properties and resources, it decelerates the process of SDG achievement. Thus effective disaster management is

essential for effective governance leading to the achievement of the SDGs within the stipulated time period. Many attributes of governance interplay in disasters, before, during and after a situation. The Government of Bangladesh has taken a number of significant measures in recent years for developing institutional arrangements from national to the local level levels for effective and systematic disaster management facilitating mitigation to the sufferings of disaster victims. With the government many Non Government Organizations (NGOs) are also playing important role in disaster management. The current paper looked into how disasters can derail the progress made towards the development, why disaster governance is so important to achieve Sustainable Development Goals (SDGs), how effective governance helps in reducing vulnerability to natural hazards and disaster risks, and what are the measures undertaken by formal and informal institutions and their interplay in reducing risks. At the end, the paper identifies some important challenges that need to be addressed for efficient and effective disaster management with a view to accelerate the process of SDG achievements in Bangladesh.

References

Benson, C. (2016), "Promoting sustainable development through disaster risk management", ADB Sustainable Development Working Paper Series No 41, Asian Development Bank.

Benz, A. and B. Eberlein (1999), "The Europeanization of Regional Policies: Patterns of Multi-Level Governance" in *Journal of European Public Policy,* 6:329-348.

Bhuyan, A.R. (2006), "Millennium Development Goals (MDGs): A Review of Bangladesh's Achievements, in *J Islamic Econ Bank Fin,* 1:51-66.

Boyer-Villemaire, U., J. Benavente, J. A. G. Cooper, and P. Bernatchez, (2014), "Analysis of power distribution and participation in sustainable natural hazard risk governance: A call for active participation." Environmental Hazards-Human and Policy Dimensions 13 (1): 38-57.

Cosens, Barbara A. (2013), Legitimacy, Adaptation, and Resilience in Ecosystem Management, Ecology and Society 18 (1): 1-9.

Djalante, Riyanti, Cameron Holley, and Frank Thomalla, (2011), 'Adaptive governance and managing resilience to natural hazards'. International Journal of Disaster Risk Science 2 (4): 1-14.

Food and Agriculture Organization of the United Nations (FAO) (2016), Food and Agriculture: Key to achieving the 2030 Agenda for Sustainable Development, Rome, Italy.

Gall, M., S. L. Cutter, and K. Nguyen (2014). Governance in Disaster Risk Management (IRDR AIRDR Publication No. 3). Beijing: Integrated Research on Disaster Risk.

Government of Bangladesh (GOB), (2014), Disaster Report 2013, Department of Disaster Management, Ministry of Disaster Management and Relief

Hilde, T. C., (2012), Uncertainty and the epistemic dimension of democratic deliberation in climate change adaptation, Democratization, 19 (5)

Hoffmann, Susanna and Oliver-Smith, Anthony (2001), *Catastrophe and Culture: The Anthropology and Disasters*, School of American Research Press: Santa Fe.

Lassa, J., (2010), "Disaster governance" in Penuel, K. Bradley; Statler, Matthew and Golson, J. Geoffrey, Thousand Oaks CA: SAGE Publications, *Encyclopedia of Disaster Relief*, pp. 113-114.

Kabeer, Naila, (2003), *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A handbook for policy-makers and other stakeholders*, International Development Research Centre,

Commonwealth Secretariat

Karmakar, S. (1989), "Natural Disasters in Bangladesh: A Statistical Review", *Paper presented at the Seminar on Impact of Information towards Mitigation of Natural Disasters* held on January 7-8, 1989 at BANSDOC. Dhaka, Bangladesh.

Khan, M A (2011), "Final Report for the Visiting Researcher Program in 2010(B)", Kobe, Japan

Lyall, C., and J. Tait. (2004), "Shifting Policy Debates and the Implications for Governance", in C. Lyall and J. Tait, (eds) *New Modes of Governance: Developing an Integrated Policy Approach to Science, Technology, Risk and the Environment*. Ashgate: Aldershot, pp 3-17.

MoF and ESCAP (2010), "Draft Country Review Paper", High-level Asia-Pacific Policy Dialogue on the Brussels Programme of Action for the Least Developed Countries, Dhaka,

Nye, J.S. and Donahue, J. (eds.) (2000), *Governance in a Globalising World*, Brookings Institution: Washington.

Ostrom, Elinor (2005), *Understanding Institutional Diversity*, Princeton University Press. pp. 165-172.

Rayner, Steve (2007), "The Rise of Risk and the Decline of Politics." Environmental Hazards 7,

Rhodes, R.A.W. (1996): "The New Governance: Governing Without Government," *Political Studies*, 44 (4): 652-667.

Rosenau, J. N. (1992), "Governance, Order, and Change in World Politics," in *J.N. Rosenau and E.O. Czempiel (eds.): Governance without Government. Order and Change in World Politics,* Cambridge University Press: Cambridge, pp 1-29.

Scott, W. Richard (2004), "Institutional theory", in *Encyclopedia of Social Theory, George Ritzer, (ed) Thousand Oaks,* CA: Sage: pp. 408-14.

Tierney, K., (2012), Disaster Governance: Social, Political, and Economic Dimensions Annual Review of Environment and Resources Vol. 37, No., 1, pp. 341-363

Tompkins, E. L., M. C. Lemos, and E. Boyd. (2008), A less disastrous disaster: Managing response to climate-driven hazards in the Cayman Islands and NE Brazil." Global Environmental Change, Human and Policy Dimensions 18 (4): 736-745.

United Nations (UN), (2015), Sendai Framework for Disaster Risk Reduction 2015–2030. New York: United Nations.

United Nations (UN), (2015a), Addis Ababa Action Agenda of the Third International Conference on Financing for Development. New York: United Nations.

United Nations (UN), (2015b), Transforming Our World: The 2030 Agenda for Sustainable Development. New York: United Nations.

UNDP (2004), "Reducing Disaster Risk: A Challenge for Development A Global Report", Bureau for Crisis Prevention and Recovery, United Nations Development Program, New York.

Van Koppen, C. S. A., A. P. J. Mol, and J. P. M. van Tatenhove, (2010), Coping with extreme climate events: Institutional flocking, Futures 42 (7): 749-758.

Zimmermann, M., Glombitza, Karl-Friedrich and Rothenberger, B., (2010), Disaster Risk Reduction Programme for Bangladesh 2010-2012, Swiss Agency for Development and Cooperation SDC, Directorate of Humanitarian Aid and SHA, CH-3003 Bern