**Challenge of Mainstreaming Disaster Risk Reduction in Development Initiatives with Special Reference to Bangladesh**

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**Abstract**

The effects of climate change-induced disasters vary significantly in developed and developing countries and the struggle for adaptation is going on under the changing situations. Studies point to the challenges facing the least developed countries (LDCs) due to climate change effects and these societies have very limited capability to invest in disaster risk reduction (DRR). Among the LDCs, Bangladesh has made notable progress in disaster management and to use climate change related resources for developing capacity for DRR. A significant awareness has been built up in vulnerable zones of Bangladesh where human death has been reduced significantly; however, the threat to properties, livelihood and environment remains unabated. The underlying phenomenon for the limited success of Bangladesh in disaster management is the synergy developed through cooperative and harmonious efforts of different organizations and bodies in the society. Besides, voluntary movements as well as investments have been made in building coping capacity at the local level for disasters but the development planning at the national level is yet to encompass the paradigm of development is disaster reduction.

The next level of challenge for LDCs like Bangladesh is to mainstream disaster risk reduction in the policy making, development planning and management of development process involving national policy makers, administrative ministries and implementing bodies, regional and local elected forums, public and private organizations, education institutions, non-government organizations (NGOs), businesses, civil society organizations (CSOs) and the communities. This paper reflects the initiatives taken by Bangladesh in this respect and analyzes the policy related issues ahead to achieve an effective streamlining for building capacity through adoption of appropriate disaster risk reduction strategy. The experiences and challenges facing Bangladesh in mainstreaming disaster risk reduction strategies relevance to other LDCs and some generalization attempted on this aspect.

**Key Words:** Disaster management, Disaster risk reduction (DRR), Policy makers, LDCs, Comprehensive Disaster Management Programme (CDMP)

**Introduction**

Current global climate change is the result of human activities since the industrial revolution – such as the burning of fossil fuels and land-use change *viz.* deforestation – resulting in a significant increase in greenhouse gases e.g. carbon dioxide and methane etc. which leads to rising of temperatures; sea level rise, melting of glaciers and ices and changing and irregular rainfall patterns, increased frequency and intensity of extreme events with varied nature, extent and duration in region to region (Turnbull *et.al.* 2013).

Since the late 1990s, there has been increasing recognition by both governments and donors of the need to ‘mainstream’ disaster risk reduction into development i.e., to consider and address risks emanating from natural hazards in medium-term strategic development frameworks, in legislation and institutional structures, in sectoral strategies and policies, in budgetary processes, in the design and implementation of individual projects and in monitoring and evaluating all of the above (Benson and Twigg, 2007). Awareness-raising is required in many hazard-prone countries to secure a solid appreciation and understanding of the relevance of disaster risk reduction to sustainable development and poverty reduction. Awareness-raising should be tackled, first and foremost, via the development of a solid, rigorous body of evidence on hazard mapping and physical exposure, on disaster losses, on the socio-economic impact of disasters at national and community levels, and on the scope for enhanced resilience. This body of evidence is required to establish the case for proactive disaster risk management and to develop appropriately risk-sensitive development policies and initiatives. Efforts to define and acknowledge accountability for disaster-related human, physical and economic losses and related areas of responsibility are also required. The pace and success of awareness-raising initiatives can be greatly aided by the emergence of strong political advocates for risk reduction.

The 2009 Global Assessment Report on Disaster Risk Reduction states that: “Efforts to reduce disaster risk, reduce poverty and adapt to climate change are poorly coordinated” (UNISDR, 2009a). However, UNISDR, designed mechanism to develop a system of partnerships to support nations and communities to reduce disaster risk through an International Coordination in Linking Disaster Risk Management and Climate Change Adaptation (IPCC, 2012). IPCC also reported that National Adaptation Programme of Actions (NAPA) under the United Nations Framework Convention on Climate Change (UNFCCC) have helped least developed countries (LDCs) assess the climate sensitive sectors and prioritize projects to address the most urgent adaptation issues of the most vulnerable regions, communities and populations, and the NAPA process has proven instrumental in increasing awareness of climate change and its potential impacts in the poorest countries.

Bangladesh is exposed to natural hazards, such as, floods, river erosion, cyclones, droughts, tornadoes, cold waves, earthquakes, drainage congestion, water logging, arsenic contamination, salinity intrusion etc. But it has made a significant achievement on disaster management and human death has been reduced significantly, however, the threat to properties, livelihood and environment remains unabated but efforts are being continued. The present disaster management vision of the Government of Bangladesh is to reduce the risk of people, especially the poor and the disadvantaged, from the effects of natural, environmental and human induced hazards, to a manageable and acceptable humanitarian level, and to have in place an efficient emergency response system capable of handling large scale disasters. The Standing Orders on Disaster (SOD) developed in 1997 and modified in 2010; outlines disaster management arrangements in Bangladesh, defines detailed roles and responsibilities of committees, Ministries, Departments and other organizations involved in disaster risk reduction and emergency response management; defines necessary actions required in implementing Disaster Management (SOD, 2010).

According to SOD-2010 following Institutional Arrangement: Important Committees at the National Level are in action

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name of committee | Main objective | Headed by | Member secretary | Members |
| City Corporation Disaster Management Committee (CCDMC) | To coordinate, review and implement the disaster management activities within its area of jurisdiction | Mayor of City  Corporations | Chief Executive  Officer of City  Corporation | All city level department heads,  NGO leaders and civil society  members and MP act as advisor |
| District Disaster Management  Committee (DDMC) | To coordinate and review the  disaster management  activities at the District level | Deputy  Commissioner  (DC) | District Relief and  Rehabilitation  Officer (DRRO) | All District level department heads,  NGO leaders and civil society members and MP act as advisor |
| Upzilla Disaster Management  Committee (UZDMC) | To coordinate and review the sdisaster management  activities at the Upzilla level | Upzilla Nirbahi  Officer (UNO) | Project  Implementation  Officer (PIO) | All Upzilla level department heads,  NGO leaders and civil society members and MP act as advisor |
| Pourashava Disaster  Management  Committee (PDMC) | To coordinate, review and  implement the disaster  management activities within its area of jurisdiction | Chairman of  Pourashava  (municipality) | Chief Executive  Officer or  Secretary of the  Pourashava | All Pourashava commissioners,  representatives from all the Government departments, NGOs and CBOs |
| Union Disaster Management  Committee (UDMC) | To coordinate, review and  implement the disaster  management activities of the  concerned Union | Chairman of  the Union  Parishad | Secretary of  Union Parishad | All the Government department head at  Union level, members of Union Parishad, NGO leaders working in respect |

Bangladesh has also prepared NAPA in 2005 and updated in 2009 under the framework of UNFCCC and also prepared and adopted Bangladesh Climate Change Strategy Action Plan (BCCSAP) in 2008, revised in 2009 prioritizing Adaptation and DRR Mainstreaming Climate Change in Local and National Development (Arif, 2013).

There are still many gaps in coordination and synchronization of the activities of different sections and levels to manage the disasters and to reduce the overall impacts on social and economic losses. Poor planning, implementation and monitoring due to lack of institutional capacity are important factors hindering overall disaster management programs (Arif, 2013).

This study reflects on the gap in understanding the relationship between adaptation, mitigation and disaster risk reduction particularly at the level of the policy makers and practitioners. Streamlining DRR in development initiatives at the national level, particularly in LDCs could bring out the inter-relationships and contribute to better preparedness to cope with climate change induced disasters.

**Materials and Method**

This study is the review of secondary material at a global, LDC and Bangladesh level to derive evidence on streamlining and point to the difficulties in achieving such goal in a developing country context. It also includes the information from different scientific research and grey literature published in different forms either in peer reviewed journals or periodicals, news media, and local records. Information is also gathered from the proceedings of the workshops, seminars and conferences. Some empirical work has been done in Bangladesh at the level of organizations involved in disaster management, environment and climate change related activities to solicit information as well as expert opinions on the issue. Bangladesh has good data sources for this work and the three decades of involvement in disaster management, environment, development and climate change enable the researcher to have reflection through experience, study and exposure. The paper has focused on LDCs with Bangladesh as an illustrative case on the theme of integration of DRR in all development initiatives concerning public sector, non-government and private sector, civil society organizations at national, regional and local levels.

**Disaster Management and Disaster Risk Reduction**

Disasters are the natural or anthropogenic hazards and vulnerabilities like earthquakes, tsunami, landslides, and volcanoes; meteorological events such as windstorms, tornadoes, flood, and drought; anthropogenic hazards such as water crisis and contamination, pandemics, terrorism, cyber-crime, crowding, health; extra terrestrial hazards viz. extra-terrestrial impactors and solar flares, geophysical hazards etc. According to United Nations Plan of Actions on Disaster Risk Reduction for Resilience, the losses from disasters are a threat to people’s lives and development; disaster risk is accumulating in most regions. The scale of vulnerability and exposures to hazards, and the resulting demand for assistance and protection are projected to substantially over the next decades (PreventionWeb 2013).

# According to IPCC 2012 disaster risk management is defined as the processes for designing, implementing, and evaluating strategies, policies and measures to improve the understanding of disaster risk, foster disaster risk reduction and transfer, and promote continuous improvement in disaster preparedness, response, and recovery practices, with the explicit purpose of increasing human security, well-being, quality of life, and sustainable development. Disaster risk management is concerned with both disaster and disaster risk of differing levels and intensities. Disaster risk reduction denotes both a policy or objective, and the strategic and instrumental measures employed for anticipating future disaster risk, reducing existing exposure, hazards or vulnerability, and improving resilience. This includes lessening the vulnerability of people, livelihoods, and assets and ensuring the appropriate sustainable management of land, water, and other components of environment. A strong relationship between disaster risk and DRR, and development and development planning has been established and validated, but not in developing countries.

# Indeed, mainstreaming of DRR and CC issues in an integrated way into the development planning and processes refers: to engage in a systematic, comprehensive effort to reduce the risks of prospective damages due to natural (including climatic) and other factors through incorporating risk reduction measures into the overall development planning process.

# The Disaster Risk Reduction Mainstreaming Program provides ex-ante assistance to developing countries to mainstream and expand DRR and climate change adaptation (CCA) activities (GFDRR 2014).

To achieve the reduction disaster loss per se the post-2015 framework for DRR needs to fulfill the targets: 1) risk prevention and the pursuit of development pathways that minimize disaster risk generation; 2) risk reduction i.e. actions to address existing accumulations of disaster risks; and 3) strengthened resilience i.e. actions that enable the nations and communities to absorb loss and damage, minimize impacts and bounce forward. Accordingly, the priority for DRR should be public policies that address disaster risk publically owned, managed or regulated services and infrastructures and the environment, but also that regulates or provides incentives for actions by the house holds, communities, businesses and individuals and the public policies on risk management need to be underpinned by appropriate governance frameworks incorporating national and local governments civil society, private sector, the science and academic sectors and thus similarly the mechanisms for information and knowledge generation on risk and on risk management alternatives which is available to policy and policy makers at different levels, from individuals and households to international organizations UNISDR 2013.

Bangladesh is recognized worldwide as one of the countries most vulnerable to natural disasters due to its unique geographic location, dominance of flood plains, and low elevation from the sea, high population density, high levels of poverty and overwhelming dependence on nature. Recurring and intensified floods, severe cyclones, storm surges and other disasters, which are thought to be more intensified and frequent due to climate change (CC), adversely affect the country’s economy by damaging infrastructure, reducing growth and upsetting the macroeconomic balances.

Disaster risk reduction (DRR) and climate change adaptation (CCA) share a common space of concern: reducing the vulnerability of communities and achieving sustainable development. While CCA is an adjustment in natural and human systems, DRR is the development and application of policies and practices that minimize risks to vulnerabilities and disasters. Thus DRR is an essential part of adaptation – the first line of defense against CC impacts.

The overlapping nature of CCA and DRR is increasingly recognized in recent times UN/ISDR and UNFCCC are now working closely in this respect. The Hyogo Framework for Action (HFA) also establishes the concern for disaster management in a changing climate. Governments worldwide have also recognized the importance of considering CCA with relevant natural disaster risk reduction measures, and the need for integrating them in a comprehensive manner into the overall development plans and strategies.

For Bangladesh, integrating climate change concerns into all disaster risk reduction interventions along with national development programmes, should be therefore a long-term priority towards achieving Millennium Development Goals (MDGs). The government has already initiated addressing disaster risk reduction and adaptation to climate change through a number of major/important initiatives including the Comprehensive Disaster Management Programme (CDMP). The challenge is to manage natural disasters in a way to shift the paradigm from traditional ‘relief and rehabilitation culture’ of facing extreme natural events towards a culture of ‘risk reduction’.

**Mainstreaming DRR in Bangladesh**

However, in Bangladesh, mainstreaming DRR integrating climate risks and followed by community level adaptation has evolved, like many other developing countries, in a limited scale until now. In fact, integration should be a process which refers to engage in a systematic, comprehensive effort to reduce the risks of prospective damages due to natural and human induced hazards by incorporating risk reduction and mitigation measures into the development planning processes.

In Bangladesh, mainstreaming disaster risks reduction integrating climate risks and followed by community level adaptation have evolved in a limited scale until now. Recently, all the stakeholders: the government, development partners and other non-government actors are beginning to realize that risk identification and management measures should constitute an integral part of their development planning, especially in changing climate scenarios.

**Challenges of Mainstreaming in DRR in Development Initiatives**

# In Bangladesh, mainstreaming disaster risks reduction integrating climate risks and followed by community level adaptation have evolved in a limited scale until now. Recently, all the stakeholders (including the government, development partners and other non-government actors) are beginning to realize that risk identification and management measures (including responses) should constitute an integral part of their development planning, especially in changing climate scenarios.

In terms of progress till date in mainstreaming DRR and CCA in developing countries, there are very few to refer to. However, the developing countries are increasingly recognizing the need for mainstreaming these concerns into their regular activities and processes, and taking necessary actions towards that end (CDMP 2009).

Poorly planned and managed urban development, environmental degradation, poverty and inequality and weak governance mechanisms continue to drive rapidly-increasing loss and damage associated with extensive risk. This has devastating impact on exposed and vulnerable low-income households, on the small and informal enterprises that provide the vast majority of employment in many countries, and on the public infrastructure and services on which these households and enterprises depend. Extensive risk is increasing even in countries and areas that are not exposed to major hazards, which highlights how both development and disaster risk reduction have not been sustainable and effective; this is particularly detrimental tow-income communities (UNISDR 2013).

# Studies on the costs of local disaster risk management are scarce, fragmented and conducted mainly in rural areas; there is a clear lack of research on disaster estimates in developing countries and there is a big gap between the costs of rural and urban areas and thus the estimation is very problematic. There is some ambiguity on impact and adaptation cost and the affect local level economic analyses, which creates some uncertainty about local impact and adaptation costs (IPCC, 2012). Lack of capacities and skills, particularly for women has been identified as a limiting factor for effective local adaptation actions (Osman-Elesha et.al. 2006)

Among the most significant individual characteristics are age, gender, wealth, livelihoods, health and settlements are important. Age acts as an important factor in coping with disaster risk. Older people are more vulnerable to disasters. The extreme impacts of climate change directly or indirectly affect the health of many at the local level. Increased population and related land use changes also increase disease rates.

Influx of population in the megacities causes transportation problem, crowded housing or slums, lack of sanitation and clean water, and health impairments from pollution and lack of adequate medical care. Rural urban migration also causes heavy track traffic occasionally.

Yet there are some drawbacks in the policies and in the implementation level. Lack of coordination among the agencies is one of the failures. Lack of coordination among the government departments hampers quick response in times of emergency. In all situations, the role of each agency should be clearly defined. Confusion about jurisdiction of work destroys the congenial atmosphere. There is a huge lacking in grant monitoring system. The foreign grants are not monitored to ensure proper allocation of fund. Bangladesh Government should improve its present warning, forecasting and dissemination system. The Government’s environmental policies should more focus on conserving the natural sites especially the floodplain, wetland, forestland and hill (Rahman and Rahman 2013).

Incorporation and integration of traditional knowledge in long term sustainability has very poorly emphasized but this traditional knowledge can provide a significant solution of many disasters.

Moreover, cross-boarder influential factors like river water sharing; common wildlife, forests and epidemic have little scope to mainstreaming but needed to be highlighted in the regional level among the beneficiaries.

Science bodies have a great role to take major technical decisions by the policy makers but in most cased the poly makers influence the science bodies for short-term benefits. This creates obstacles in long-term and sustainable DRR policy.

**Conclusion**

Mainstreaming DRR in development initiative is an integral part of the national policy. Many issues are needed to be handled respecting the need of the sustainable DRR policy. Science and policy makers should have dialogues to formulate a technical decision. There are many short comings in mainstreaming DRR as the whole policy is not clear and complete. Among the important issues, coastal zone management, afforestation, urbanization, wet-body restoration, cautiousness about highways and infrastructure development keeping long term sustainability and managing the floodplains. Traditional/local knowledge must be integrated in DRR policy.

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