

# Reducing disaster risk: Bottom-up approach

*The comparative analysis of community benefits suggest that centralised approach need to be replaced by bottom up approach and initiatives so that local stakeholders can take part in the development process meaningfully towards a resilient community.*

MOHAMMAD ABDUL QAYYUM

BAKING is recognised as a country at high risk of recurring natural and human induced hazards with an average 10 million people affected every year. Frequent floods, cyclones, river bank erosion, water-logging, drought and tornadoes significantly disrupt Bangladesh's economy and lives and livelihoods of its people. Climate change has added a new dimension to the risk environment with global predictions suggesting that the country could expect more intense cyclones, storm surge and flooding and that a rise in sea level could have a significant impact on the lives and livelihoods of up to 15 million people.

Experience shows that sustaining recurrent disaster impacts and capacities of the mass people as well as local community are by far the most concrete strength of disaster management in the context of Bangladesh. During its 20 years' experience of Community Based Disaster Risk Reduction (CBDRR), the Community Risk Assessment (CRA) and Risk Reduction Action Planning (RRAP) guidelines have been a highly significant output which is up-scaled by the leadership of the Comprehensive Disaster Management Programme (CDMP) of the Ministry of Disaster Management and Relief.

**Community risk assessment : Key instrument**

The Ministry of Disaster Management and Relief under the auspices of the CDMP initiative along with the inputs from various stakeholders developed and introduced a uniform CRA methodology with the objectives of understanding and assessing local risk envi-

ronment by the vulnerable community itself in a simplified manner. CRA is a participatory process to assess hazards, risks and vulnerabilities in order to prepare a risk reduction action plan for implementation by the local authority and other actors. The CRA process combines scientific data and forecasts (including climate change impacts) with a participatory discourse using local knowledge to identify, analyse and evaluate the risk environment of a particular community.

This approach considers an all hazards, all risks and all sectors perspective within a given community. A consensus is then reached amongst the community, other stakeholders and government agencies on actions that are needed to manage the specific risk environment. The end product is a consensual document detailing community risk profile and a set of risk reduction actions to mitigate these vulnerabilities. CRA follows a six-step process (identification of hazards, vulnerable sectors, elements & locations, risk analysis and evaluation, specific risk reduction options and action planning, consensus on options) and uses a number of PRA tools as follows: Transect Walk, Social Mapping, Hazard Mapping, Hazard Seasonal Calendar, Livelihood Seasonal Calendar, Venn Diagram, Key Informant Interview, Focus Group Discussion.

The Union is the general unit of assessment although the methodology can be followed for any geographic, socio-cultural and environmental context. CRA used relevant union specific socio-economic, demographic, environmental data including the scientific prediction information are collected from available secondary sources and compiled as part of the community scoping exercise. On average 200



Occurrence of disaster intensified under climate change impact

people from each union usually are consulted during the process of a union risk reduction action plan preparation and its validation.

**The distinctiveness**

**The uniqueness of CRA is that**

Use of scientific information by putting equal emphasis on people's perception, experiences and learning. The CRA process allows all stakeholders, particularly the local authorities and marginalised groups, to be involved in the planning and decision making process. The CRA process results in the development of a Risk Reduction Action Plan owned by the local authorities, including a list of prioritised disaster risk reduction (DRR) interventions. CRA can be applied to all sorts of risk environments and is able to deliver consistent outcomes. This enables separate CRAs to be readily compared or consolidated, which eventually can facilitate its replication.

CRA can also be treated as an effective tool for community awareness on their risks and vulnerabilities. Through active involvement in

CRA process the community people, especially the underprivileged and the at-risk communities are aware about their rights.

CDMP has provided strong leadership and technical guidance in the development of nationally accepted uniform CRA approaches which are now aligned to be used by all international and national NGOs, and other stakeholders. These approaches have included a wide range of groups within the community particularly women, people with disabilities and the landless. The resulting action plans have provided a template for intervention. They have successfully created links to programme funding mechanisms (e.g. Local Disaster Risk Reduction Fund) as well as other government funding mechanisms. The challenge now is to seek ways of scaling-up this bottom-up approach, so that it will reach far larger numbers of vulnerable people.

**Key areas**

Although Bangladesh has a well-established

disaster management institutional framework that extends from the highest level of government through to Union and Local Government levels. While these systems mobilise quite quickly immediately before and after a crisis event, they are not so well energised to undertake a proactive leadership role in driving risk reduction initiatives from local to national level. However, in general far more support is needed to increase scale and effectiveness of local actions, and build learning networks. The synthesis and lessons from grassroots level of Bangladesh has identified three key areas in relation to CRA and a proactive approach to integrating local risk reduction initiatives into the broader development planning at national level:

- Participatory methodologies to enable effective links between CRA/RRAP and local knowledge and practices;

- Action learning approaches and the use of comprehensive risk reduction approaches aligned with sustainable livelihoods framework to promote learning-by-doing from a holistic base; and

- Participatory monitoring and evaluation involving local users, stakeholders which feed back into an action learning process at different levels, for rapid scaling-up and linking with decision making process at policy level.

This gives particular emphasis to enhancing local disaster management capability to be integrated at national development planning to meanfully towards a resilient community, wards a prepared and resilient community. With the effort of the local level planning aligned with national level disaster management and government initiative it eventually can lead to an effective disaster management system put in place. The comparative analysis of community benefits suggest that centralised approach need to be replaced by bottom up approach and initiatives so that local stakeholders can take part in the development process.

The writer is National Project Director, Comprehensive Disaster Management Programme (CDMP II).

# Disaster Management in changing climate

*The latest approach is to increase the resilience of the community so that they can face and cope with the natural hazards themselves as much as possible. Local knowledge and indigenous resources are considered very important for building community resilience.*

MAHFUJUR RAHMAN

IT is estimated that 135 million people in Bangladesh have been affected by natural disasters, and while many have lost their lives or been injured, many millions have also lost their homes, land and livelihoods in the past 20 years. Bangladesh also has proven capacity of handling disasters like cyclone, flood and river erosion. But changing climate is also changing the disaster pattern of the country. International Climate Change Risk Assessments, published in 2010 identified Bangladesh as the world's most vulnerable country to negative impact of climate change and high intensity of natural disasters.

Climate, geographic location and hydrogeological features of Bangladesh made it a highly vulnerable country. Coping with disaster is part of people's life. Every region of the country faces one or other type of hazards. Being a high density and low per capita resource country, Bangladesh is too vulnerable to climate change impacts. According to recent research outcomes, it is in second position with respect to climate change vulnerability after Haiti.

Flood, cyclone, drought, extreme weather and salinity are predominant natural hazards which are augmented due to increased temperature, changing pattern of rainfall and variance of water flow in major rivers throughout the year. The changes in climatic factors are affecting life and livelihood of millions of people.

Due to seasonal distribution of rainfall early and late floods are commencing in the haor areas that destroyed major crops of the area in 2009 and 2010. Scarcity of potable water and reduced agricultural production are major threats in coastal districts due to rising sea level. People in many areas of Chittagong and Khulna are compelled to store rain water in rainy season for drinking purpose all the year round. Drought in Rajshahi district tremendously affected mango production in 2011. Rising flood water in the flood plain of Jamuna, Padma and Meghna rivers and salinity in coastal district such as Patuakhali and Jhalkathi are major threats to rice cultivation. Not only are these, a huge number of people remain yet homeless due to cyclone Sidr and Aila that hit the region years back.

According to the Global Climate Risk Index 2010, an

average of 8,241 people died each year in 244 cases of extreme weather conditions in Bangladesh, with the damage amounting to over \$2 billion a year and a GDP loss of 1.81%, during 1990-2008.

When a cyclone commences, it floods paddy fields with sea water, damages home, standing crop and irrigation systems and destroys seed supplies. Death from cold shock and heat stroke also increased in Bangladesh. Death toll due to landslides in hilly districts of south-eastern Bangladesh owing to heavy rainfall also increased in recent years.

**Shifting paradigm in disaster management**

The backdated outlook emphasizes on rescue, relief and rehabilitation where external assistance comes after a disaster already commenced. Rescue team operates to find out injured people and recover dead bodies. Relief (food, cloth, drinking water and medicine) are distributed to affected community.

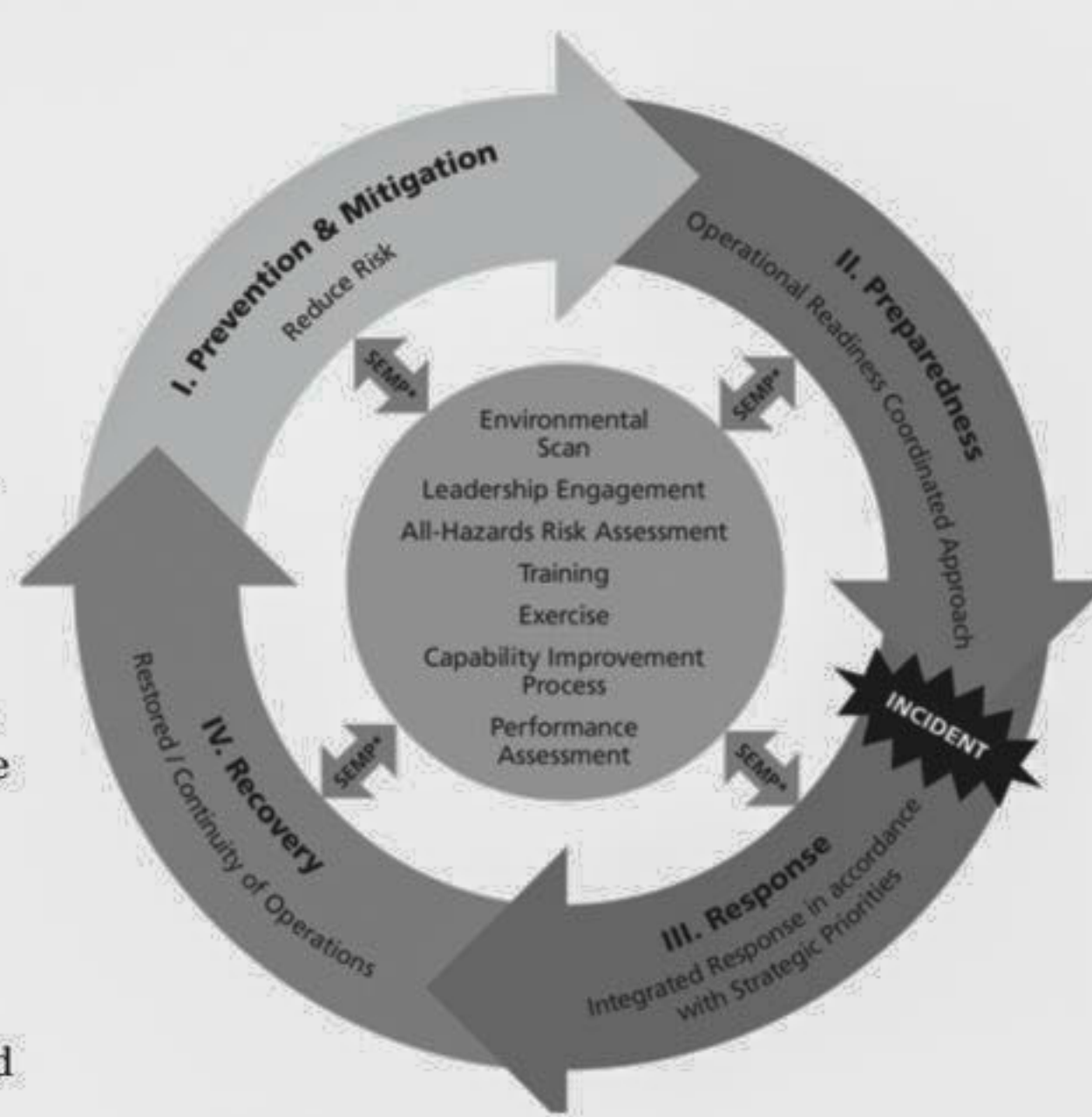
Later, an approach came forward with a view to working towards disaster preparedness and community risk reduction. However, conventional disaster management cycle starts with prevention and ends with recovery without focusing on community empowerment.

The latest approach is to increase the resilience of the community so that they can face and cope with the natural hazards themselves as much as possible. In this respect local knowledge and indigenous resources are considered very important and utilized for building community resilience.

**Ways forward:**

- Reducing Disaster Risk (DRR) of augmenting hazards
- Resilience building activities within vulnerable communities
- Emergency preparedness and managing emergency situation
- Capacity building of grassroots and community based institutions (who are the first to respond to any disasters) through training and awareness
- Research on future change in hazard occurrence pattern
- Utilizing regional perspective on disaster management

**Comprehensive approach:** Bangladesh is vulnerable to many hazards including flood, drought, cyclone, salinity intrusion etc. we need to consider multi-hazards approach



Conventional Disaster management cycle

to disaster management. Disaster preparedness program from national to local levels should be multi-hazards approach.

**Reducing disaster risk :** Recent research findings and field level observations show that recurrence and intensity of flood, drought, river erosion and cyclone are increasing in Bangladesh. Disaster risk reduction would be vis-a-vis multi-hazard and all the major hazards should be addressed in the risk reduction action plan.

**Resilience building activities within vulnerable communities:** If the adaptive capacity of vulnerable community could be heightened to a resilient level against common hazards, disaster management becomes the duty of the community. Competent community, itself capable to tackle disaster, well prepared for a coming disaster, would be able to significantly reduce casualty and property loss during a disaster. They have their local resources and their indigenous knowledge can be used to face the disaster.

**Strengthening early warning system (EWS):** Early warning is very important for emergency preparedness. As early and as detail and accurate the forecasting system is, more the possibility of taking right type of preparedness for the upcoming hazards. An efficient and well functioning EWS can save lives and prevent loss of property significantly during flood and cyclone.

**Emergency preparedness:** Role of grassroots and community based organisations is very important in emergency preparedness and tackling emergency situation. In fact, preparedness for emergency situation of community involves community people, grassroots organisation and local administration with appropriate roles.

**Capacity building at grassroots:** Volunteer organisations like scout, girls guide, members of community based organisations and members of government bodies like Ansar and Fire Service and Civil Defence are the real actors in disseminating warning message and emergency management that include search and rescue, distributing reliefs such as food, drinking water and medicine. Through training and awareness raising workshop their capacity should be enhanced for efficient emergency management.

**Research on hazard occurrence:** As the changing climate is pushing a pattern of change in the disaster occurrence, we need to know well the changing trend of hazards for better management of natural disasters. Academic and research institutions need to carry comprehensive studies to find out climate change impacts on extreme weather, land slide, flood, drought, salinity intrusion and cyclone as well as identifying remedies.

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# Reaping benefits from cleaner industrial practices

*Nowadays many developing countries like the developed ones are reaping environmental and financial benefits from cleaner industrial production practices*



Industrial waste polluting surroundings

MD ATIKUR RAHMAN

INDUSTRY continues to pose a potential threat to environment, both globally and locally. It accounts for approximately one-third of the world's greenhouse gas emissions and a large percentage of generated hazardous waste.

Day by day in our country increased industrial activity has been polluting the environment. Smoke emitted from factories, cotton waste, inorganic synthetic chemical, industrial waste dumped in the vicinity of factories or thrown into rivers and streams pollute the environment. Developed countries were alert to the menace and took timely remedial steps. But in developing countries, ecological balance is not being maintained and the danger of this imbalance is really very serious.

For the past two decades, industry in most developed countries have relied on end-of-pipe pollution abatement as the main pollution control technique. Although end-of-pipe treatment is effective, it has proved to be expensive. Nowadays more progressive countries are calling for cleaner industrial production, a preventive approach that attempts to minimize waste. This holistic approach demands that the industrial pollutants be treated not at the end-of-pipe stage, rather they are prevented altogether, throughout the production process. Cleaner production techniques range from inside-the-factory changes in management, to shop-floor operations and processes, equipment and sometimes alterations in the products themselves. Cleaner production means adapting industrial processes to use raw materials and energy more efficiently, to eliminate toxic raw materials and to generally reduce emissions and waste. Enterprises everywhere are reaping environmental and financial benefits from cleaner industrial production. Many developing countries and economies in transition are unaware of the benefits of preventive measures which not only reduce waste and the consumption of energy and water but also offer the prospect of utilizing or recycling by products. In some cases these countries do not have information about cleaner production and in other cases, they fail to appreciate the environmental and financial benefits of the cleaner production activities. One hopes, our factory managements realize their scope of benefits.

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Sidr/Aila displaced people yet to be rehabilitated