

Community-Based Disaster Risk Reduction and Management Framework: Lessons from Implementation

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This paper presents the community-based disaster risk reduction and management (CBDRRM) framework as it is being implemented by various stakeholders, such as non-government organizations, people's organizations, local government units, academic institutions and other civil society organizations. The engagements of the development workers in projects and activities under each major phase of the framework are discussed. For preparedness and mitigation, projects that build disaster resilient communities are highlighted, focusing on early warning systems, advocacy with local governments and building sustainable livelihoods. For disaster response, having a damage and needs assessment (DANA) and preparing a more gender-sensitive and older persons – sensitive relief kit are presented as experienced during relief operations after typhoon Ondoy. For rehabilitation and recovery, participatory processes engaged in re-building potable water supplies are discussed.

The Philippines is considered as one of the most disaster prone countries in the world. Filipinos experience volcanic eruptions, earthquakes, landslides, and typhoons (Heijmans, Annelies & Victoria, 2001). On the average, 20 typhoons hit the Philippines annually between the months of July to November (CDRC, 1992; UCCP, 1992).

Some typhoons result in massive flooding, landslides, loss of lives and property and damage to infrastructures such as roads and bridges. In November 2004, a series of typhoons hit the Philippines and caused massive landslides in the province of Quezon, specifically in the municipalities of Real, Infanta and Gen.

Nakar in Southern Luzon. These typhoons were as follows: Unding (Mufia-international name) on Nov. 14-21; Violeta (Merbok) on Nov. 22-23; and Yoyong (Nanmadol) on Nov. 30 – Dec. 4. Tropical depression Winnie hit the islands on Nov. 28-30. Not one of these was a super typhoon. But rains were persistent and since they came one after another, the slight damage brought by Unding was compounded by the succeeding typhoons.

In June 2008, Typhoon Frank (Fengshen – international name) lashed the province of Iloilo and caught residents by surprise with unprecedented high level of flooding in the city. In September 2009, the heavy rains brought about by Typhoon Ondoy (Ketsana - international name) wrought havoc in the metropolis as floodwaters quickly rose and reached more than five meters high. Homes in both urban poor communities and in posh subdivisions were inundated. Appliances, equipment, vehicles were washed away. Everyone was caught by surprise since the typhoon signal on that day was only Signal No. 2, something which does not worry most residents. Even the weather bureau was not able to forecast the unusually heavy volume of rain that poured in a matter of six hours.

Again in June 2011, Typhoon Falcon (Ma-on-international name) hit Southern Luzon, and once again brought heavy rains to Metro Manila. This time, most of the communities which were previously hit by Ondoy, heeded warnings given by the weather bureau and evacuated early. Only one died due to drowning (Lopez & De Leon, 2011), compared to thousands and hundreds who died from the typhoons of 2004 and 2009, respectively. In December 2011, Typhoon Sendong hit northern Mindanao causing flashfloods that led to the death of over a thousand people.

This paper aims to share the CBDRRM framework as it is being implemented by various stakeholders, such as non-government organizations, people's organizations, local government units, academic institutions and other civil society organizations. Examples of projects and activities under each major phase of the framework are discussed such as preparedness and mitigation, disaster response, recovery and rehabilitation.

The Community-Based Disaster Risk Reduction and Management Framework

In the past, various non-government organizations and people's organizations in the Philippines responded to disasters through disaster relief operations and disaster preparedness activities. Activities were mainly in the form of disaster relief to address emergency needs of the people such as food, clothing and shelter. They would usually solicit and stock up on these goods so that they will have materials to distribute once disaster strikes the communities.

However, NGOs realized that these activities were not enough. Communities and families need to be prepared for the onslaught of disasters. The Citizens Disaster Response Center (CDRC) spearheaded the promotion of citizenry-based development – oriented disaster response (Delica, 2001). In 1999, the Center for Disaster Preparedness (CDP) was organized as a resource center for community based disaster risk management, primarily for capability building for NGOs, people's organizations and the government sector. Other NGOs in various regions in the Philippines which always faced disasters were likewise organized to respond to disasters.

In 2002, the Philippine Disaster Management Forum (PDMF), a network of NGOs advocated the community based framework to government and other institutions, like the academe, people's organizations and international organizations. It spearheaded in the advocacy for the passage of a new law on disaster risk reduction (Luna, 2004). The massive disasters in 2004 - 2006 (2004 REINA flashflood, 2006 Guinsaugon landslide, 2006 Albay flashflood) diverted the focus of the PDMF NGO members from legislative advocacy to emergency response, recovery and rehabilitation. In 2009, the same group of NGOs, with new ones venturing in CBDRM, formed the Disaster Risk Reduction Network Philippines (DRRNetPhils).

They promoted community based disaster preparedness and risk reduction projects and activities, developing a more comprehensive CBDRRM

framework to guide their work. The framework has four main phases, as follows: prevention and mitigation; disaster preparedness; emergency response; and, recovery and rehabilitation. The main objective of the framework is to increase capacities and decrease vulnerabilities of communities to face hazards and disasters in their area.

The DRRNet Phils pursued advocacy towards the formulation of a national law which would recognize the importance of community-based disaster risk reduction framework. This is a response to the increasing occurrences of disasters in the Philippines, which has been heightened by global climate change (Agsaoay-Saño, 2010). Through the concerted efforts of various networks, including environmental NGOs, Republic Act 10121 “An Act Strengthening the Philippine Disaster Risk Reduction and Management system, Providing for the National Disaster Risk Reduction and Management Framework and Institutionalizing the National Disaster Risk Reduction and Management Plan”, was passed into law on May 27, 2010.

This Act addresses disasters responsively and proactively through a framework that recognizes important roles and participation of different sectors of local communities, focuses on the most vulnerable sectors such as children, elderly and people with disabilities; and, addresses root causes of disaster risks.

Moreover, this act defines community-based disaster risk reduction and management as a process in which *at-risk communities* are actively engaged in the identification, analysis, treatment, monitoring and evaluation of disaster risks in order to reduce their vulnerabilities and enhance their capacities, and where the people are at the heart of decision-making and implementation of disaster risk reduction and management activities.

RA 10121 adheres to international laws and protocols approved by most countries, some of which are:

Millennium Development Goals (MDGs)

In achieving the Millennium Development Goals (MDGs), the Philippines recognized disaster risk reduction (DRR) as an important component for sustainable development, hence DRR was mainstreamed into legislation and planning processes. MDG 7 ensures environmental sustainability and one of its targets is to integrate the principles of sustainable development to country policies and programmes and reverse the loss of environmental resources. This target is largely in line with disaster risk reduction measures which address climate change concerns, such as reforestation and decreasing emissions of greenhouse gas.

Hyogo Framework for Action (HFA)

HFA is a 10-year plan adopted by 168 members of the United Nations in 2005, shortly after the Indian Ocean tsunami. It describes the roles that various sectors, such as communities, donor agencies, government and the private sector, need to do to reduce disaster losses. When the Philippines expressed its commitment and signed the HFA, it also made a promise to promote and institutionalize risk reduction efforts within the context of sustainable development. The HFA identified five priority action areas for preparedness activities, together with guiding principles to achieve disaster resilience (UNISDR, 2007). The five priorities are: 1) Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation; 2) Identify, assess and monitor disaster risks and enhance early warning; 3) Use knowledge, innovation and education to build a culture of safety and resilience at all levels; 4) Reduce the underlying risk factors; and, 5) Strengthen disaster preparedness for effective response at all levels.

ASEAN Agreement on Disaster Management and Emergency Response (AADMER)

The ASEAN Agreement on Disaster Management and Emergency Response or AADMER was ratified by ten ASEAN Member States in July 2005

and entered into force on 24 December 2009. It is the first ever HFA – related binding instrument in the world. The vision of AADMER: *disaster resilient nations and safer communities in the ASEAN region by 2015 and its goal is to substantially reduce loss of life. It has three main objectives: improve the capacities of ASEAN for regional risk assessment, regional early warning activities and continued monitoring for well-targeted response and recovery activities; assist Member State in mainstreaming disaster risk reduction into national development policies, plans and sectoral programmes in formulating and implementing risk reduction measures that link climate change adaptation and key sectors to ensure sustainable development; and, enhance disaster preparedness of Member States and improve ASEAN's responsiveness to major disasters in a manner that is collective, fast, reliable and in line with humanitarian standards through common operational procedures and mechanisms and rapid mobilization of resources* (Reyes, 2010).

Building Disaster Resilient Communities (BDRC)

Disaster mitigation and preparedness activities start with risk and hazards assessment in at-risk communities. This assessment primarily aims to make the communities safer from hazards.

Christian Aid and its partners in the Philippines engaged in a project called “Building Disaster Resilient Communities” (BDRC), using the priority actions defined by HFA. Generally, the projects of the partners can be categorized as follows: *advocacy with national and local government for laws and local ordinances responsive to disaster risk reduction (Priority Action 1); enhancing early warning systems (Priority Action 2); and enhancing people's livelihoods to respond to disaster risks (Priority Action 4)* (Polotan Dela Cruz, Ferrer & Pagaduan, 2010).

Examples of the projects are:

1. Enhancing early warning systems

The Social Action Center in Infanta, Quezon (Garcia, 2010; Luna, 2010) and the “Reduction of Flood Risk in Bicol River Basin II” (Wamil, 2010) projects

highlighted the use of early warning systems at the community level. The communities where these projects were implemented experience flooding along the major rivers. According to the United Nations International Strategy for Disaster Reduction (UNISDR) (Luna, 2010), there are four elements of people-centered early warning system:

- Knowledge of disaster risks in the communities: there is a need to collect data for purposes of risk assessment (identifying hazards and vulnerabilities, patterns and trends, availability of hazard maps);
- Monitoring and warning service: (ensuring that the right parameters are monitored; having scientific basis for forecasting; ensuring that accurate and timely warning will be generated);
- Dissemination and communication: (ensuring that warnings reach those at risk, can be easily understood and are clear and useable);
- Response capability: (ensuring that response plans are up to date and tested, that local capacities and knowledge are used, and that people are prepared and ready to react to warnings).

By using these four elements, the two projects set out to establish their early warning systems which were envisioned to improve the monitoring and forecasting of information to guide communities in their preparation. In Quezon, they used radio communication technology which can reach the whole community. They trained community volunteers, most of whose mindsets have been changed by the tragic events of November 2004. They now realize the need for emergency responses and community preparedness. Moreover, they recognized that community involvement was essential in data gathering.

From a project that they themselves coordinated with an academic institution, the University of the Philippines-National Institute for Geological Sciences (UP-NIGS), they learned the basis for establishing water level stations. The UP-NIGS trained them in gathering the required data, specially in hydrological data gathering on precipitation, water level, river width and elevation. They were also provided with simple rain gauges. This system consisted of the following

elements: prediction and weather forecasting; detection – observation of rainfall and flood levels; communication – relay information to disaster agencies; decision-making; and, mobilization. These early warning systems help at-risk individuals and communities to act early to avoid injury, loss of life, damage to property and livelihood.

2. Advocacy among local governments for ordinances responsive to disaster risk reduction

The Mainstreaming Disaster Risk Reduction Pilot Project in Barangays Apas, Bulacao and Kalunasan in Cebu City was implemented by the Fellowship for Organizing Endeavors, Inc. (FORGE) with the support of Christian Aid from October 2008 to March 2009 (Balang, 2010; Bawagan, 2010). FORGE is a non-government organization based in Cebu City, mainly working among urban poor communities in the city.

The presence of large urban areas in Cebu City has transformed it as the urban core and center of commerce both in the province and in Central Visayas region. Among the most common consequences regularly confronting the populace in both its urban commercial and residential areas, are clogged drainage systems which heavily result to floods during heavy downpours. During dry months, fire disasters threaten the communities due to housing congestion and illegal tapping of electrical connections. There are also communities in the urban and rural barangays near the river banks and hills which are prone to landslides.

By virtue of a Resolution, a partnership between the three barangays and FORGE was crafted to develop the medium term Barangay Development Plan (BDP) incorporating disaster risk reduction strategies. The main activity was a Participatory Capacity and Vulnerability Assessment (PCVA) wherein barangay officials, members of people's organizations and other key informants met to surface community experiences and issues related to hazards and disasters. During the PCVA Workshop, participants identified the three major hazards that they faced in the past ten years. They also identified the most vulnerable among women,

men, children and elderly, and those who have the capacity to respond during disasters.

The final output of the barangay development planning workshops of three modules were the community vision, goals and five-year barangay development plan. Community leaders, sectoral representatives (youth, women, elderly), and barangay officials who were involved in the participatory planning process became the members of the Barangay Development Council responsible for the implementation, monitoring, and evaluation of the BDP.

The participants identified the most common community problems that contributed to the hazards. In Barangay Apas, one of the problems identified was improper garbage management which makes community members, specially children and elderly, prone to diseases. According to the participants, if every household takes responsibility for their own garbage, the problem of drainage clogging will be addressed and health risks will be minimized. On the other hand, participants in Barangay Kalunasan identified the lack of community awareness on the impact of small scale quarrying and charcoal making on landslide and flooding. In Barangay Bulacao, flooding affects the informal settlers living at the foot of the mountain and along the riverbanks. Moreover, the Barangay Local Government Unit (BLGU) also does not have enough funds for the construction of river bank stabilization measures which could decrease the adverse effects of landslides and flooding.

The project used the Thematic Area 4 of the HFA on risk reduction and social protection which includes the following:

- adoption of sustainable environmental management practices to reduce hazard risks;
- enhancing collective knowledge and experience in managing hazards and crises;
- putting in place structural mitigation measures to protect communities using local labor, skills, materials and appropriate technologies; and,

- developing local disaster plans to be incorporated into the local government development and land use planning.

Some of the activities currently implemented under this project are: riverbank stabilization in Barangay Kalunasan, using the gabion type riprap; tree planting activities along the riverbanks and other upland areas; and, solid waste management program. Community organizing and education were regular components of these activities.

3. Enhancing people's livelihoods to respond to disaster risks

Enhancing people's capacities to address disaster risks in farming communities is important to ensure food security and environmental sustainability. This was the objective of the BDRC project in Barangay Sianon, Badiangan, Iloilo implemented by the Panay Rural Development Center Inc. (PRDCI) together with the local government unit and the community organizations (PRDCI & Tionko, 2010). The villages experience typhoons, flooding, landslide and drought within the year, making their sources of livelihood very vulnerable.

The primary project was the introduction of sustainable agriculture practices to the communities, which for a long time have been practicing monocropping. Farmer cooperators were trained and demonstration farms were established to convince more farmers to adopt sustainable agriculture techniques, such as use of botanical pesticides and planting botanical plant protection agents. Bio-intensive backyard vegetable gardening was also introduced. The community also engaged in vermin-composting to provide affordable organic inputs for farmers. Rice straws and animal dung were also used for the compost.

To mitigate landslides and soil erosion, *madre de cacao* were planted to strengthen and stabilize the sloping areas. To address problems brought about by drought, the community implemented rainwater harvesting and construction of

rainwater ponds. Vegetables were planted in raised bamboo containers. Plastic sheets were also used to cover vegetable plots during the rainy season.

People's enthusiasm to participate in the project can be attributed to the awareness-building sessions conducted among the farmers where they discussed disaster risks and climate change and how sustainable agriculture techniques can help to strengthen their capacities and reduce vulnerabilities.

From this project, communities learned food security measures such as having home gardens, seed storage, production of root crops and legumes that have longer shelf life. They were able to identify the characteristics of a food self-sufficient community within the framework of building a disaster resilient community, as follows: capacity to produce and store food until the next harvest; presence of buffer stock for disaster emergency purposes; changed outlook about food; protection and conservation of community resources; engagement in rain water harvesting and storing (Tanchuling, 2010, p.185).

The case studies showed the importance of various elements in building disaster resilient communities, namely: community organizing; community participation; access and use of disaster information and knowledge, good governance, development of appropriate technology, disaster preparedness and management planning, and complementation of local and scientific knowledge. The cases also showed that it was important that communities learn from previous experiences of disasters for their future protection.

“Communities have inherent capacities that they can draw from to help each other, and eventually recover and rebuild their lives. The critical task of external service providers like NGOs and government is to support community so that they go beyond being ‘victim’ or ‘disaster survivor’ and move to asserting agency. Through participatory activities like capacities and vulnerabilities assessment and contingency planning, people are put back on the driver’s seat. Furthermore, community organizing and community building processes have engaged the people to build their capacities and confidence to face future disasters” (Polotan Dela Cruz, et al., 2010, p. 8).

Innovations in Disaster Response

In September 2009, the havoc brought about by Typhoon Ondoy (Ketsana - international name) in the metropolis, saw an outpouring of support from various groups and individuals from the Philippines, as well as from abroad. Various groups conducted disaster relief and rehabilitation work in various ways.

For its part, the College of Social Work and Community Development (CSWCD) conducted relief operations and rehabilitation work among its partner communities affected by the typhoon. CSWCD students, staff, faculty and volunteers participated in the various tasks involved in relief operations, such as resource generation, inventory, relief goods sorting, purchasing, packing and distribution, as well as coordination with appropriate local government units, non-government organizations and people's organizations in the communities in the conduct of such activities. Some classes also conducted damage and needs assessment in communities; prepared herbal medicationsto be used for the medical mission; and, conducted psycho-social interventions and stress debriefing with children in evacuation centers.

With its continuing effort to be more responsive to pressing needs, CSWCD's innovative efforts became apparent in its relief distribution activities. Provisions for the relief packs gave due consideration to gender, older persons and environment sensitivity, including the setting up of a system for a more humane and orderly relief goods distribution. Aside from the usual relief pack which consists of food good for three days, clothes for a family of four and hygiene kits, the relief kits distributed contained these items:

- *Female underwear and sanitary napkins* Women, despite disasters, still manage various activities in the evacuation centers or in their own homes. Most often, whatever money they have is used for food and other emergency needs of their families. Thus, there was due consideration for their distinct personal needs.

- *Extra food and clothes for the elderly in the community:* Filipino families usually have their grandparents as part of the family. Hence, additional clothes and food particularly for their needs was included in the packs.
- *Using t-shirts from the relief goods for packing.* This is to avoid adding to the plastic heaps accumulating in the communities. As pointed out during theam operations, the excessive amount of garbage blocking waterways is one of the major causes of flooding.
- The relief team closely coordinated with the partner people's organizations who had the basic information regarding the number of families who were affected by the flooding in the communities. Relief cards were given to the leaders of the organization, who in turn gave the affected families one card each. During the day of relief goods distribution, those who had relief cards were asked to queue for the goods. In this manner, people hurting others as they scamper for relief goods was avoided. Moreover, it ensured that families who were really in need of relief goods could receive one pack each. This follows closely the principle that the humanitarian imperative comes first (Sphere Project, 2004).

Participatory Processes in Disaster Recovery and Rehabilitation

In November 2004, four strong typhoons successively hit the Philippines which caused landslides and flooding in the major river of Gen. Nakar in Quezon province, South Luzon. Lives were lost. Some bodies were not recovered, others were buried deep in mud. Most of the town government officials were caught by surprise by the sudden rise of the riverwaters, with logs swept away from the mountains. Homes along the riverbanks were swept by the strong current. Villages were buried as high as ten feet (Bawagan, 2011).

This story shows how the community engaged in participatory processes in their recovery projects. Relief efforts poured into Gen. Nakar and other affected towns soon after the disaster. International NGOs came to provide support to the

communities. But more than relief work, there was a lot of rehabilitation work that had to be done. One particular experience showed the community efforts to address the needs of the villagers after the disastrous event, specifically in bringing back the potable water system in almost all the villages of Gen. Nakar. This experience highlighted the lessons learned from a stronger cooperation established among the community people, local officials, local non-government organizations as well as international organizations in addressing rehabilitation needs of communities after a disaster, which community development practitioners as well as officials will learn from.

Since almost all of the sources of potable water in Gen. Nakar were destroyed by the typhoons, the General Nakar Development Initiatives Inc. (GENADEV), a non-government organization working in the area, focused its efforts towards the rehabilitation of the water system to achieve the following: access to safe and potable drinking water; decrease in incidence of water borne diseases among children and adults; and, community participation and accountability for the usage and management of the potable water systems. They conducted the following major activities:

- Mobilization: *rapid area appraisal, data validation, community consultations, organizing local volunteer groups for water system installation;*
- Set-up implementation and management schemes: *formulation of the Memorandum of Agreement among the barangay officials, neighborhood associations, municipal officials and GENADEV regarding the project grant, drafting regulations in the operation and management of the community potable water system, formulation of barangay resolutions for guidelines on local water resource management;*
- Installation of water systems: *drafting of specific installation plans and designs, acquisition and delivery of materials, turn-over of materials to barangay officials and volunteer groups, actual installation and water testing;*

- Monitoring and evaluation: *monitoring and mapping the installation of the potable water system, turn-over of operational management of the potable water system to community leaders, evaluation with barangay officials and community organizations.*

GENADEV is a member of the Municipal Disaster Coordinating Council (now the Municipal Disaster Risk Reduction and Management Council) of Gen. Nakar composed of NGOs, POs and government agencies. For the potable water project, GENADEV coordinated with another donor agency in identifying appropriate sites for the installation of specific water systems. They also provided training and orientation to community people on effective management of the water system. The local government unit, on the other hand, provided technical assistance while the barangay units mobilized the community for its labor counterpart.

Participation of community and beneficiaries

Each barangay unit prepared a Memoranda of Agreement prior to the water facility installation to define the obligations of the following parties:

- GENADEV, neighbourhood associations, barangay officials and municipal officials in the construction, operation and maintenance of the potable water system. GENADEV, as the facilitator, must ensure the effective implementation and management of the project in coordination with the local government.
- The neighbourhood association will receive the construction materials, provide labor counterpart and draft the guidelines for the use and maintenance of the water system.
- The barangay officials will coordinate with the municipal social welfare office on the “food for work” packs and ensure the maintenance of the water system as a barangay facility.

- The municipal officials will provide the necessary technical support to the project and provide the necessary maintenance support to the water system as a public facility. Through participatory strategies, GENADEV ensured community ownership of the project.

Assessment

Through this project, GENADEV was able to mobilize the resources of the local government who provided for food packs, and neighbourhood associations who gave their labor counterpart. Such experience demonstrated the possibility and merits partnership between community organizations and local government units on community projects. Moreover, it was also able to show that infrastructure projects of this type can be done at a lower cost, as compared to those which are contracted out to other institutions by the local government.

Aside from costing, this also differed from a usual government project in that the people can claim ownership to the endeavor due to the sweat equity that they contributed. Furthermore, the people shared the responsibility with the local government to manage and maintain the project after its full construction and turn-over.

It was evident in this study that livelihood concerns of the victims took priority over other needs. Hence, the community members gave time to rehabilitation project activities wherein they could get some cash which they can use for their daily needs, specially since their main sources of livelihood have been adversely affected by the disaster. They participated in the water systems rehabilitation, road and bridge repairs. Hence, such factors should be taken into consideration in future planning of rehabilitation activities. The use of both 'cash-for-work' and 'food-for-work' for infrastructure repair done by community members proved to be good examples of helping the victims in the process of rebuilding the community.

Moreover, the above-mentioned scheme for infrastructure repair proved to be more cost-efficient than contracting out the services to other private companies. It ‘hits two birds in one stone’ – people get some form of employment and income while the local government saves on infrastructure expenses. In this case, the government organizations provided the necessary technical assistance. A significant lesson from this experience is the wisdom to tap and maximize the local expertise available right in the communities for regular infrastructure projects, not only during calamities but for other similar undertakings.

Conclusion

These experiences of implementing projects in various phases within the CBDRRM framework, all share the importance of community organizing and participatory processes in planning and program implementation. Social workers and community development workers play important roles in these activities, through their work with non-government organizations, government agencies, and international organizations. The government has to lay down the enabling mechanisms for DRR, specifically by putting in place responsive national laws and local ordinances; establishing offices and committees for disaster risk reduction and management from the national to the local levels; providing funds for program implementation; and, establishing partnerships with other countries in the region, specially for cross-country program implementation. Similarly, non-government organizations and people’s organizations play critical roles in community-based programs throughout the various phases of CBDRRM framework. Coordination with various actors and complementation of their roles are crucial to achieve the goals of increasing people’s capacities and reducing their vulnerabilities, reducing the loss of lives and damage to properties and eventually moving towards improvement of people’s lives.

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