

# Philippine Journal of Social Development

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# **Philippine Journal of Social Development**

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**Disaster Risk Reduction  
for Social Development**

**Volume 3**

**2011**

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## Foreword

The Philippines has not recovered from the devastation brought by Typhoon Sendong in northern Mindanao cities of Cagayan de Oro and Iligan where about 1,153 died and 105 missing<sup>1</sup>, when on January 5, 2012, another disaster happened in Compostela Valley, also in Mindanao. At least 25 people were killed and up to 150 people were missing after a landslide hit a community known for “small-scale miners who tunnel into the side of the mountains like rats”<sup>2</sup>. The place had been declared as a dangerous area and habitation was forbidden. However, the people continue to stay, hoping to find gold for a living.

Earning a living is a basic necessity for survival, to sustain life. Yet many times, the means to earn also become the path to disaster. Left with no option, people consciously face rare natural hazards in order to sustain their daily livelihoods. For instance, we hear about children diving into the bottom of the sea, disturbing the fish to help the commercial fishers get a voluminous catch. With the use of chemicals, soil quality turns acidic, affecting agricultural productivity and the health of the consumers.

Such concerns go beyond occupational hazards. In the risk-taking economic activities, the environment is regarded as a mere resource and input in the production processes. The immediate concern for productivity prevails over sustainability and safety. As such, the outcomes are flashfloods, landslides, subsidence, health epidemics and other hazards that destroy development nurtured for years. Human relations with nature have fallen to the extent that some natural phenomena and hazards have become anthropogenic, as in the case of climate change.

“Kapit sa patalim” (Hold on the knife) is an apt Filipino metaphor referring to people who endure dangerous situations, even if it is already hurting and causing them sufferings. It depicts the absence of one’s choice, although it can also be labeled as a manifestation of resilience, the power to withstand dangers. However, there could also be a miscalculation of one’s capacity and inability to control or foresee disastrous events. The sense of resilience can become a false hope of security when the people underestimate or ignore the risks.

Relying on experiences alone in ascertaining possible disasters is no longer tenable because disasters can occur beyond what the people have witnessed. For climate related hazards, for example, areas that used to be free from typhoon paths in the country are now experiencing heavy rains during storms. The magnitude of the flood worsened beyond imagination of people who never thought that they would experience flashfloods at a level they never had. Service providers are also caught flat-footed as they are overwhelmed by the magnitude of disaster impacts.

There are processes taking place where the ordinary people are affected. Despite the declaration that logging is illegal, logs were among those carried by the flood during the 2004 disaster in northern Quezon province and lately, in northern Mindanao. This is just an example of local governments not having the political will to enforce policies that could have prevented or mitigated disaster impacts.

This journal issue relates disaster risk reduction to social development. Disaster is a social phenomenon, more than natural or technological. This is a basic tenet for the paradigm shift in the way we respond to disaster, from emergency management to disaster risk reduction. Poverty, injustice, inequality, unjust relations, discrimination, seclusion, and powerlessness are social realities that increase people's vulnerability. In many situations, the desire to achieve social development is also associated with environmental violation and social risks as described earlier. Accomplishments in social and economic development nurtured for years can be easily destroyed in less than an hour.

The conditions of the poor and the most vulnerable under 'normal' situation is aggravated by disasters, exposing them to consequential risks and pushing people to social disasters. Thus, how we pursue social development without birthing environmental risks remains a challenge. How we reduce disaster risks to protect social development is a goal each individual, community and society must be conscious about. The recognition of the reality of dangers requires corresponding disaster risk reduction measures such as comprehensive risk assessment and rational decision making to reduce and manage these risks.

While this journal called for papers dealing with disaster risk reduction concerning all types of hazards (climatologic and meteorological, geologic, technological, biological, astronomical and human induced), all the papers submitted dealt with only one type, that is, climate related. Somehow, this shows the urgency to address the increasing pressures brought about by climate change and related hazards such as typhoons and floods, and rain-induced landslides. Commonality in the papers stressed the reality that climate-related hazards are the ones triggering more disasters and devastations in the country as experienced in different areas such as Metro Manila, the province of Albay, and the KAMANAVA (Kaloocan, Malabon, Navotas and Valenzuela). Jagoon, Kaneko and Komatsu's article provide a characterization of flooding in the northern part of Metro Manila and its socio-economic impact to property, health and livelihood.

The flooding in the province of Albay and KAMANAVA are perennial occurrences contrasting flooding in urban and rural settings. The 2009 flood that submerged low areas of Metro-Manila and suburbs was never experienced before. While those from the lowland areas are used to flooding, the flood due to Typhoon Ondoy gives us the worst scenario of flooding in the city.

The papers in this issue present frameworks and how these formulations are operationalized. The paper of Ofreneo is presented in its entirety to show the complex relationships of strategies, namely, climate change adaptation, disaster risk reduction and social protection. It provides an analytical perspective of the social implications of climate change and disasters.

Bawagan shares 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.

Adopting the humanitarian principles in emergency and disaster response, Firmase and the members of the team involved in relief operation, share their experiences during the relief operations as the affected families responded to the flood brought by Typhoon Ondoy in 2009. They looked into the processes, good practices as well as

challenges and issues faced during the provision of relief goods from needs assessment, pre-distribution preparations, actual distribution and post-distribution activities.

Using the community development framework, Luna's paper looks at the recovery and rebuilding processes of communities affected by the Ondoy flood in two communities: one where the families went back to where they used to live before the flood and one where the families were resettled. While the people affected by the flood had their own mechanisms for recovery, community development processes such as education, organizing, resources and disaster risk management contributed to the enhancement of the recovery of the families.

Considered as effective indigenous practices of the Filipinos, Barrameda and Barrameda affirm the role of *damayan* and *bayanihan* in disaster risk reduction. They are as social resources in the people's day-to-day survival; as coping mechanisms in times of typhoons and flooding; and as adaptive strategies in building their resiliency. These practices help in developing the people's sub-cultures of safety and promoting the emotional well-being of the people.

Focussing the PJSD issue on disaster risk reduction towards social development is not a mere academic exercise but an expression of concern and an advocacy to place DRR and climate change at the center of the agenda. The efforts and resources being invested have to effectively penetrate all sectors of society, across geographic space, at all levels particularly the local communities and the most vulnerable.

E. M. Luna and JC Gaillard

### Endnotes

<sup>1</sup> National Disaster Risk Reduction and Management Council. (2012, January 23). Cited by Panlilio, C. & Rosauro R. in Cagayan de Oro schools start slow recovery. *Philippine Daily Inquirer*.

<sup>2</sup> AFP 2012. [ph.news.yahoo.com/25-dead-100-missing-philippines-landslide-034419984.html](http://ph.news.yahoo.com/25-dead-100-missing-philippines-landslide-034419984.html) accessed Jan. 5, 2012



# ADDRESSING THE SOCIAL DIMENSIONS OF CLIMATE CHANGE THROUGH ADAPTIVE SOCIAL PROTECTION<sup>1</sup>

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**ROSALINDA PINEDA-OFRENEO**

*Considered a crucial development challenge of the present times, climate change increases the vulnerability of the poorest and most disadvantaged groups as in the experience of farmers, fisherfolk, indigenous peoples, women and children. With the risks associated with the phenomenon that the country is now facing, from flooding to geologic dangers, destruction of 'weather-dependent' livelihoods to health-related impacts, relevant policies and plans at the national and local governments were devised mainstreaming climate change and disaster risk reduction and management (DRRM).*

*The Philippines for instance has now advanced pieces of legislation to enhance, strengthen and rationalize social protection policies and programs, to further lead articulation and integration of climate change and DRRM concerns into current and future interventions. Aimed at contributing to the process, this 'think paper' addresses the social dimensions of climate change through espousing a rights-based, transformative, gender-responsive, participatory and sustainable approach to social protection.*

*This study likewise integrates the broad meanings of social protection to include economic justice, as in the rights to an adequate standard of living or in the redistributive aspect of using and owning land and water resources. It connects social protection to various conceptions of justice: gender justice, reproductive justice, environmental justice and climate justice.*

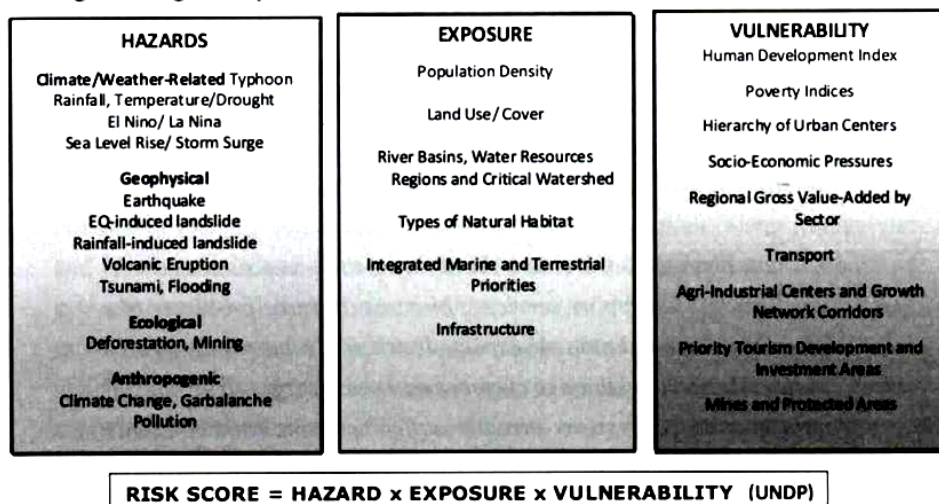
*Social protection to enhance adaptation and DRR benefits can be done through protective and preventive strategies of coping, as well as through promotive and transformative strategies for building adaptive capacities. The actual ability of a system to adjust (or adapt) to climate change can also be enhanced by building resilient communities through active participation of citizens, CSO and grassroots engagement, access and use of disaster information, disaster preparedness and management planning, and good governance.*

Climate change is considered to be the most crucial development challenge of our times. It is a challenge which requires a most urgent and concerted response, considering that the future of the next generations hangs in the balance. If the challenge is not adequately met, most of the efforts expended to meet the Millennium Development Goals (MDG) will come to naught. Poverty, inequality, and injustice will worsen immeasurably, and the human rights of the poorest and most vulnerable peoples in the world will be trampled upon as they struggle to survive and adapt in a “climate change apartheid”, where only rich countries generally have the wherewithal to defend themselves against the problems which are mostly their creation to the detriment of the less developed ones. (Human Development Report, 2007, p. 166).

The literature on the social dimensions of climate change invariably emphasizes the increasing vulnerability of the poorest and most disadvantaged groups to risks, defined as “chances of danger, damage, loss, injury, or other undesirable consequences from risky events” associated with such change (Heltberg, et al., 2008, p. 4). An individual or household is considered to be vulnerable to risks associated with climate change if these will result in a loss of well-being that pushes the individual or household below a benchmark or threshold level of well-being” (Heltberg, et al., 2008, p. 5). One way of estimating risk is through the HEV formula developed by the United Nations Development Program (UNDP) (La Vina, 2008, p. 104), where “Risk (R) is an approximation of the compounding effect of Hazard (H), Exposure (E) and Vulnerability (V)” (Villarin et al., 2008, p. 29).



Fig. 1. Diagram representation of the HEV formula



Source: United Nations Development Plan in La Vina, 2008

This formula could be enhanced further, according to the World Bank, by exploring Capacity (C) as denominator (Villarin, et al., 2008, p. 29).

The nexus between poverty and the environment cannot be over-emphasized in any discussion on vulnerability to climate change. Destruction of the natural resource base as a result of environmental degradation aggravates the poverty of coastal, upland and lowland communities who are consequently and increasingly deprived of their sources of livelihood. The desperate poor resort to slash and burn agriculture, dynamite fishing, and other destructive means of survival which in turn further harm the environment. Erosion of watersheds, coupled with torrential rains attributed to climate change, lead to flooding and landslides which again intensify the poverty and suffering of the affected vulnerable poor.

What are the risks associated with climate change that we now face?

*The country is ranked highest in the world in terms of vulnerability to tropical cyclone occurrence, and third in terms of people exposed*

*to such seasonal events. An average of 20 typhoons traverse the country yearly, causing physical and economic devastation. Climate variability increasingly induces drought during El Niño episodes and floods during La Niña. Consequently, the Philippines faces increasing disaster risks with geologic/seismic dangers closely interacting with such meteorological hazards.*

*Climate change also threatens the ability of the country's ecosystems to provide life-support services. In coastal areas, problems like flooding and inundation are expected to increase due to accelerated sea level rise, in addition to cyclones and storm surges. With coastal and marine ecosystems already suffering from anthropogenic problems like pollution, over-exploitation and uncontrolled development, the country can ill afford to cope with additional stresses (Climate Change Commission, 2010, pp. 5-6).*

The scale, impact, and implications of climate change-related phenomena in the Philippines were amply demonstrated by the devastation wreaked by Typhoons Ondoy and Pepeng in 2009, which left 961 dead, and two million families (or ten million people) affected by floods and landslides. The cost to the country was USD4.98 billion or almost three percent of the GDP (NDCC, 2009, quoted in Polotan dela Cruz, Ferrer & Pagaduan, 2010, p. 1).<sup>2</sup> This is just portentous of things to come as there are predictions based on Geographic Information System spatial analysis that approximately 67 percent (20 million hectares) of the country will be severely affected by flooding, drought, and/or landslides (Godilano, 2009, pp. 10-11). Furthermore, "climate migrants" within and across countries will multiply by the millions, resulting in humanitarian crises for which national and international mechanisms have not yet been put in place (Asian Development Bank, 2011).

Among the most affected by climate change is agriculture, and the outcome is greater food insecurity.<sup>3</sup> An important "underlying risk driver" is "ecosystems degradation" dramatized by the fact that "Of the 27.5 million hectares in the late 1500s, the country's forest lands currently stand at 7.2 million hectares or only

14.17% of the country's total land area" (Climate Change Commission, 2010, p. 11). Furthermore, "over 80 percent of original mangroves in the country have been cleared, increasing sediment outflow onto reefs" (Climate Change Commission, 2010, p. 11). Fishing communities are affected, resulting in the same outcome, with more frequent fish kills, red tide, coral bleaching, etc.<sup>4</sup> The destruction of "weather-dependent" livelihoods not only in agriculture and fishing but also in forestry has a disastrous effect on the rural poor. Their productivity and incomes consequently decline as food supplies likewise decrease and food prices increase.<sup>5</sup> The result is increasing poverty and hunger (a trend already well recorded by surveys done by the Social Weather Stations), which are exactly the main problems the MDG seek to minimize. Achieving these goals amidst climate change is now even more difficult to achieve.

The urban poor are also very much affected since they are usually located on river banks and other areas highly vulnerable to flooding and damage caused by typhoons. Because of their vulnerability, exposure, and incapacity to adapt, they bear the brunt of climate change impacts. Their ranks are likely to increase as "climate migrants" stream in from rural areas, compounding the risks they face.

Vector-borne and other infectious diseases such as dengue fever, malaria and cholera are also expected to increase, and will be added burdens to the health sector. Other health-related impacts mentioned by the Integrated Panel on Climate Change Fourth Assessment Report include "malnutrition and its consequences on child development, increased injuries, illness and deaths due to heat waves, floods, droughts, storms and fires," and "increased incidence of diarrhea and cardiovascular diseases" (Ebi, 2008, cited in Garcia Rincon & Virtucio, 2008, p. 21).<sup>6</sup> Groundwater sources may also be contaminated by sea water, thereby affecting supply of potable water<sup>7</sup> (Casis, 2008b, pp. 13-14). If sea water levels rise due to climate change, it is predicted that even well-maintained aquifers will turn salty and undrinkable (Villarin et al., 2008, p. 21).<sup>8</sup> Furthermore, "Any decline in groundwater yield will heighten water-related disputes and expose people to water-borne diseases such as cholera and typhoid fever" (Villarin, et al., 2008, p. 24).

As mentioned earlier, the adverse effects of climate change have a differential impact on people, and generally it is the poor who are most vulnerable. In the Philippines, the National Statistical Coordination Board (NSCB) estimated the number of poor families at 3.67 million and the number of poor people at 22.2 million in 2006 (NSCB, Feb. 8, 2011). Typhoons Ondoy and Pepeng in 2009 were expected to increase poverty by three percentage points in the most disaster-stricken areas in Luzon, and .5 percent nationwide, meaning an increase in the number of poor people by 480,000 (Special National Public Reconstruction Commission and the World Bank, 2009). The latest NSCB release on the highlights of the 2009 poverty statistics showed that the number of poor families increased to 3.86 million, and the number of poor people to 23.1 million (a difference of 970,000 Filipinos), with the disaster-stricken areas showing higher incidence. But the poor are not all the same because among them, there are also differentiating factors such as gender, age, ethnicity, geographic location, resource access, employment, health, and migrant status.

For example, women and girls whose social roles make them more in need and in charge of water procurement will be most affected if they have to walk further to reach water sources in rural areas or to queue longer in water lines in urban areas. When disasters strike and they are brought to evacuation centers, their special health, safety, and sanitation requirements are often not considered, and they suffer consequently. There have been reports of women and children being sexually harassed or even raped in evacuation centers. Women's multiple burdens multiply when disasters strike, because they are in charge of providing food and fuel, taking care of the young, the elderly, and the sick, while at the same time not having enough access to resources, to information, to time, and to decision-making bodies (Barrameda, 2010). This is particularly true of rural women as well as of women in fisheries.<sup>9</sup>

Indigenous peoples are also at enormous risk, because they live off the land and the resources found on their ancestral domain. As they themselves explain, "Our rights, cultures, livelihoods, traditional knowledge and identities are based on the profound and intricate relationships we forged with our lands, waters, and

resources over thousands of years. Thus, when our lands and resources disappear or are altered by climate change, we suffer the worst impacts” (Corpuz & de Chavez, 2009, p. vi). Expectedly, indigenous women are “more disproportionately affected,” as they suffer the following impacts: loss of life, livelihood and food security; high health risks; loss of traditional knowledge; water conflicts, violation of gender rights, migration and displacement, less mobility and further marginalization, and loss of identity. (Corpuz & de Chavez, 2009, pp. 109-112).

Older people are more affected by heat stress due to climate change, while children are more vulnerable to malnutrition, dengue and other vector-borne diseases aggravated by climate change. The number of children affected by disasters resulting from climate change is expected to increase to up to 175 million in the next ten years compared to 66.5 million in the 1990s (Tanner, 2010).

The social vulnerability of the groups mentioned earlier may already be addressed by existing resources and assistance, but their access and entitlements to these resources remain problematic. Thus their ability to deal with the impact of external stress on their livelihood, security, and well-being may still be impaired, necessitating the “mainstreaming climate change and disaster risk reduction in relevant plans at the national and local levels” (NEDA, 2011).

It is therefore important to note that the MDG-F 1656 on Strengthening the Philippines’ Institutional Capacity to Adapt to Climate Change is already in place “to pave the way to mainstream climate change adaptation in the country’s development planning process” (NEDA, 2011 p. 2). A joint program of the Government of the Philippines, UN agencies, and the Spanish Government, MDG-F 1656 “demonstrates adaptation strategies which involve the scientific assessment of current vulnerabilities of specific sectors of the country to climate change impacts, use of appropriate technologies, information on traditional coping practices, diversified livelihoods, improved capacities and current government and local interventions” (NEDA, 2011 p. 2)<sup>10</sup>



## **Policy and Program Context**

The Philippines now has very advanced legislation on climate change and disaster risk reduction and management (DRRM). It is also enhancing, strengthening, and rationalizing its social protection policies and programs, and this process can lead to further articulation and integration of climate change and DRRM concerns into current and future strategies and interventions. This “think paper” intends to contribute to the abovementioned process.

The **Climate Change Act of 2009** affirms the sustainable human development framework of Philippine Agenda 21, and “adopts the principle of protecting the climate system for the benefit of humankind on the basis of climate justice.” It also highlights the vulnerability particularly of the poor, women, and children to the dangers of climate change, mandates the integration of disaster risk reduction into climate change programs and initiatives, as well as the systematic integration of “the concept of climate change in various phases of policy formulation, development plans, poverty reduction strategies and other development tools and techniques by all agencies and instrumentalities of the government.” What is noteworthy is that aside from a national climate change action plan to be formulated in accordance with a national framework strategy, local government units (LGUs) are tasked to be “the frontline agencies in the formulation, planning and implementation of climate change action plans in their respective areas.” (Sections 13 and 14). The Climate Change Act is for the synergy of adaptation and mitigation.<sup>11</sup> Key result areas (KRAs) for adaptation are enhanced vulnerability and adaptation assessments, and an integrated eco-system-based management with emphasis on river basin management,<sup>12</sup> building the resilience of coastal and marine ecosystems and communities (including tourism industries), mainstreaming biodiversity adaptation strategies, participative water governance and resource management. They also include securing food and water resources as well as livelihood opportunities through climate-responsive agricultural and health sectors, climate-proofing infrastructure and disaster risk reduction. KRAs for mitigation include energy efficiency and conservation, building the country’s renewable energy capacity, developing environmentally sustainable transport

systems<sup>13</sup> and infrastructure, reducing emissions from deforestation and degradation (REDD) of our forests and enhancing their potential to serve as a “carbon sink,” and full implementation of the Ecological Solid Waste Management Act.

The Climate Change Act provided for the **National Framework Strategy on Climate Change 2010-12** which serves as the basis for “climate change planning, research and development, extension and monitoring of activities, programs, and projects to protect vulnerable communities” (NEDA, 2011p. 2). In its Preface, the Framework “aggressively highlights the critical aspect of adaptation meant to be translated to all levels of governance alongside coordinating national efforts towards integrated ecosystem-based management which shall ultimately render sectors climate-resilient” (p.1). In its Guiding Principles, the Framework reiterates its adoption of the Philippine Agenda 21 for Sustainable Development, “to fulfill human needs while maintaining the quality of the natural environment for current and future generations” (p.4). The National Climate Change Action Plan is also being developed through a consultative process to provide details to the strategies contained in the National Framework, and to guide local government units in the making of their respective plans (p.6).

The Philippine Disaster Risk Reduction and Management Act of 2010 reinforces the Climate Change Act in the following provisions of its Declaration of Policy:

*(d) Adopt a disaster risk reduction and management approach that is holistic, comprehensive, integrated, and proactive in lessening the socioeconomic and environmental impacts of disasters including climate change, and promote the involvement and participation of all sectors and all stakeholders concerned, at all levels, especially the local community;*

*(g) Mainstream disaster risk reduction and climate change in development processes such as policy formulation, socioeconomic development planning, budgeting, and governance, particularly in*

*the areas of environment, agriculture, water, energy, health, education, poverty reduction, land-use and urban planning, and public infrastructure and housing, among others;*

*(j) Ensure that disaster risk reduction and climate change measures are gender responsive, sensitive to indigenous knowledge systems, and respectful of human rights.*

The DRRM law signifies a shift from reactive emergency response to a proactive and integrated approach to address, reduce, and prepare for disasters. This shift is embodied in the law's definition of Disaster Risk Reduction as 'the concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposures to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.' In this context, DRRM is defined as "the systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies and policies" related to DRR.

Since the DRRM law itself is a product of concerted civil society organizations (CSOs) advocacy (Agsaoay-Sano, 2010), it places the burden not on government alone but seeks to "engage the participation of CSOs, the private sector and volunteers in the government's disaster risk reduction programs towards complementation of resources and effective delivery of services to the citizenry." The point is to build not only a disaster-resilient nation but also disaster-resilient communities through community based DRRM, which the DRRM law defined as "a process of disaster risk reduction and management 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."

In the Philippine context, **social protection** consists of "policies and programs that seek to reduce poverty and vulnerability to risks and enhance the

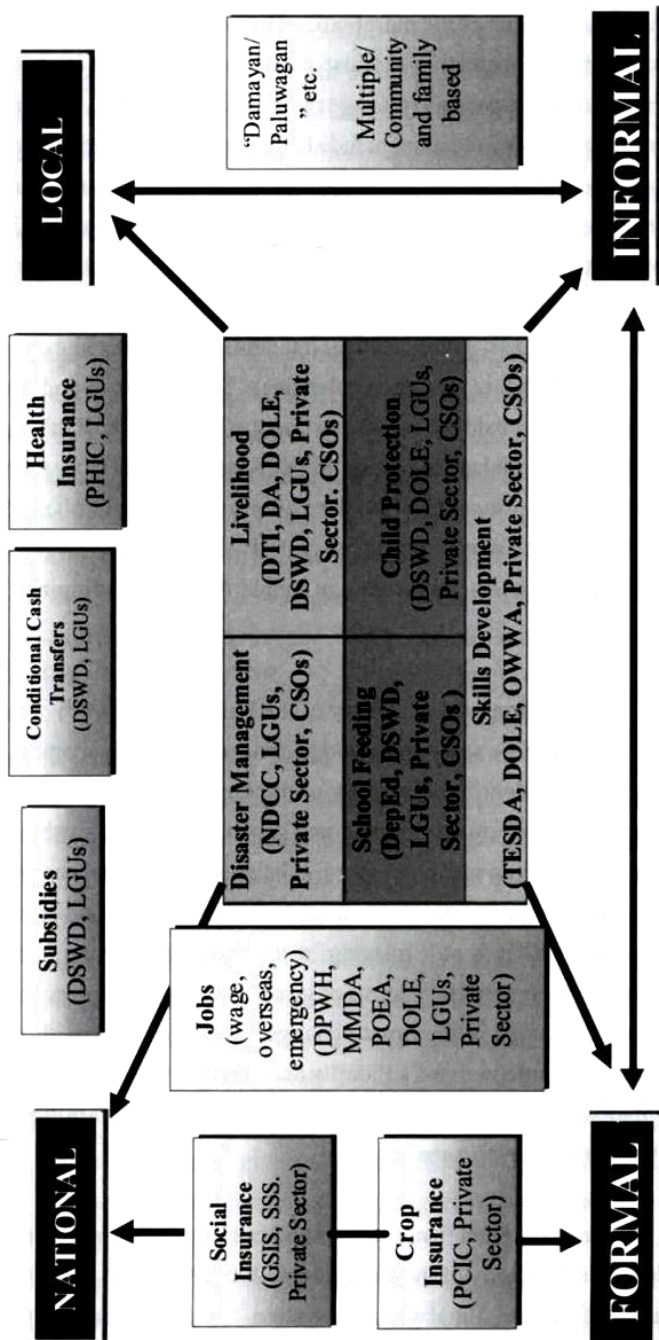


social status and rights of the marginalized by promoting and protecting livelihood and employment, protecting against hazards and sudden loss of income, and improving people's capacity to manage risks" (NEDA, 2007). Under this definition, components of social protection include labor market interventions, social insurance, social welfare, and safety nets. It is under the category of safety nets that the following disaster-related programs and projects of the Department of Social Welfare and Development (DSWD) are located: assistance to individuals in crisis situations, core and emergency shelter assistance to victims of disasters, disaster relief operations, food/cash for work assistance, critical incident stress debriefing assistance and the Tindahan Natin Project (food price subsidies). The National Food Authority (NFA) also provides food subsidies. The Department of Health (DOH) also has a program/project on disaster management and preparedness. In addition, the Metro Manila Development Authority (MMDA), the Philippine National Police (PNP), and the Department of Public Works and Highways (DPWH) provide emergency employment but on a peripheral basis (Development Academy of the Philippines, 2009, pp. 24-25).

The Development Academy of the Philippines (DAP) recommends the strengthening of these safety nets and proposes a program scoping diagram (see next page) which identifies the roles of national agencies and local government units, formal and informal schemes, and shows which bodies should take care of social, health and crop insurance, jobs, subsidies, conditional cash transfer (CCT), disaster management, school feeding, livelihood, child protection and skills development. What is still missing in the program scoping is climate change adaptation.<sup>14</sup> Also important in terms of visualization is the connection to the global, since risks associated with climate change cannot be dealt with by one country alone and require international solidarity and action. Even DRRM is now dependent on international cooperation for timely and accurate early warning systems related to weather and other disturbances.

There have been many studies and critiques of social protection programs (Development Academy of the Philippines, 2009; Manasan, 2009). Among these are the fact that "the social security system, the social health insurance scheme

Fig. 2. Proposed Program Scoping



and many of the non-contributory social protection programs provide poor coverage of the informal sector which includes the transient poor and the near poor,” and the fact that “although national government spending on social protection has increased in response to the global financial crisis, national government’s spending on social welfare programs, social safety nets and active labor market programs compares unfavorably with that of other countries” (Manasan, 2009, p. iii).<sup>15</sup> Furthermore, many of the emergency and subsidy schemes do not go beyond doleouts (Homenet SEA, Homenet Philippines and MAGCAISA, 2009).

Today, the critique centers on the relatively huge amount of resources being poured on the 4Ps or CCT Program, compared to other government programs that are just as important in the context of social protection.<sup>16</sup> The CCT now serves as the core of the convergence strategies linking employment generation, livelihood, microfinance, community-driven development, and asset reform. These could include environmental protection and conservation projects as was the case in Kalahi-CIDDS (Manasan, 2009, p. 56), as well as the integration of disaster management in the Family Development Sessions of the CCT.<sup>17</sup> Such convergence strategies are mentioned in the chapter on social development in the **Philippine Development Plan (PDP) 2011-2016**, together with other “cross-cutting social sector strategies” such as attaining the MDGs, closing the universal coverage gaps in health care, accelerating asset reform, mainstreaming climate change adaptation and disaster risk reduction in social development interventions, and strengthening civil society-basic sector participation and public-private partnership (PPP) in the social sector.

The PDP also contains a chapter on Conservation, Protection and Rehabilitation of Environment and Natural Resources towards Sustainable Development, which highlights efforts “to mainstream and integrate Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) in national, sectoral, regional and local development plans” (NEDA, 2011 p. 1).

## **Adaptive Social Protection Using a Social Justice and Human Rights Framework**

There is increasing recognition that “Social protection policy needs to learn from and incorporate DRR and adaptation approaches to ensure that programmes continue to effectively support livelihoods and protect the poor and excluded from shocks and risks in the face of climate change” (Davies, Oswald & Mitchell, 2009, p. 205). Put another way, “Social protection holds significant promise for protecting poor and excluded people against current (DRR) and future (adaptation) weather extremes and tackling increasing levels of risk and vulnerability” (Davies, et al., 2009, p. 212). The Philippine policy and program context discussed above shows that there is indeed a need for inclusion of climate change and DRRM concerns as mandated by existing legislation in the country’s social protection strategies.

The concept of “adaptive social protection”, which has the following features, could therefore be considered by policy-makers:

- *An emphasis on transforming productive livelihoods as well as protecting, and adapting to changing climate conditions rather than simply reinforcing coping mechanisms;*
- *Grounding in an understanding of the structural root causes of poverty for particular people, permitting more effective targeting of vulnerability to multiple shocks and stresses;*
- *Incorporation of rights-based rationale for action, stressing equity and justice dimensions of chronic poverty and climate change adaptation in addition to instrumentalist rationale based primarily on economic efficiency;*
- *An enhanced role for research from both the natural and social sciences to inform the development and targeting of social protection policies*

*and measures in the context of the burden of both geophysical hazards and changing climate-related hazards;*

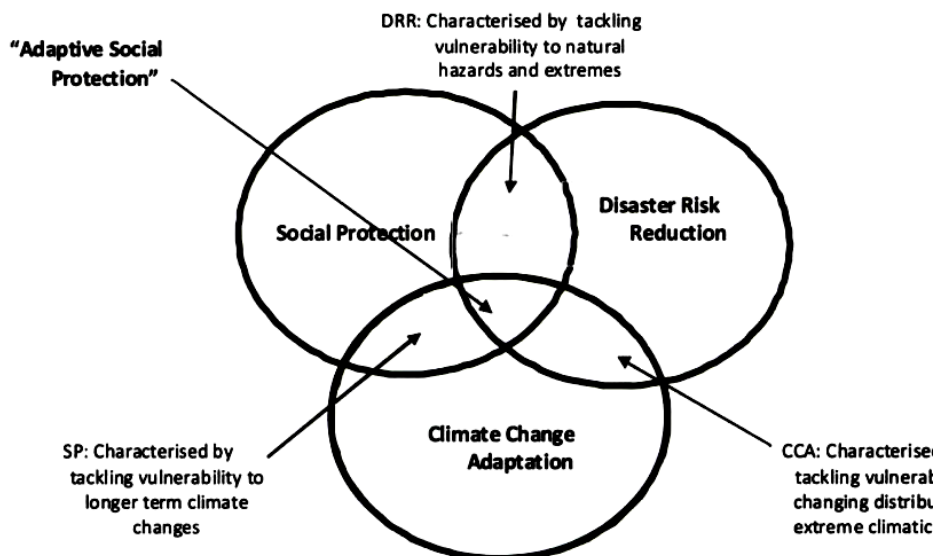
- *A longer term perspective for social protection policies that take into account the changing nature of shocks and stresses* (Davies, et al., 2009, pp. 211-212).

Adaptive social protection is therefore about rights-based action for equity and justice that emphasizes the role of scientific research and sustainable livelihood in addressing chronic poverty and vulnerability to climate-related and other hazards. To be truly effective, adaptive social protection programs rely on science-based vulnerability assessment reports “to determine who are the most vulnerable; where are they located; what are their vulnerabilities, what are the socio-economic impact of these vulnerabilities and the corresponding adaptation measures needed” (NEDA, 2011, p. 2).

Adaptive social protection seeks the integration of climate change adaptation to tackle “vulnerability to changing distribution of extreme climatic events,” a “preventative and holistic poverty approach to DRR” to address “vulnerability to natural hazards and extremes,” and social protection which is “climate-proofed” in the sense that it can address “vulnerability to longer-term climate changes” with “more reliable and accurate predictions and consideration of vulnerability” (NEDA, 2011, p. 212).

Adaptive social protection also assumes universality of coverage since climate change and its ensuing impacts do not choose victims. Although the poor are the most exposed and vulnerable, other sections of the population can be severely affected and cannot be excluded from crucial forms of assistance for humanitarian reasons.





Source: Davies, et al, (2009) Climate change adaptation, disaster risk reduction and social protection, in *Promoting Pro-Poor Growth Social Protection*, OECD, p. 212.

The need for “adaptive DRR” must also be stressed , “to ensure that all DRR activity is resilient in the face of a changing climate, or as far as possible ‘climate proofed ‘and does not result in the maladaptation of vulnerable communities” (Huq & Ayers, 2009, p. 145).<sup>18</sup>

### ***Taking Off from Transformative, Gender-Responsive, Participatory, and Sustainable Social Protection***

Based on its features enumerated in the previous section, “adaptive social protection” may be seen as taking off from the concept of “transformative social protection.” This maintains that “social protection can address risks and promote economic growth but poverty and vulnerability are structural and embedded in the socio-political context; social protection must go beyond welfare and support citizens’ claim to social protection from the state as a basic right” (Devereux & Sabates Wheeler, 2007, p. 9). “Institutional transformative social protection” is

a “means to a life with dignity” as it **“addresses power imbalances in the society, creating a policy environment conducive to pro-poor growth, accountable and responsive governance systems, and a social equity-grounded development approach.”** Thus, transformative social protection goes beyond targeted resource transfers; it extends to such arenas as equity, empowerment, as well as economic, social, and cultural rights. It requires legislation, financial commitment, and accountability (Agenda on Transformative Social Protection, 2009).

It also integrates a gender perspective developed by social development practitioners both here and abroad (notably Lund, Srinavas, Kabeer, Luttrell and Moser) which has led to an alternative definition of social protection: “All interventions from public, private and voluntary organization and informal networks to support communities, households and individuals, both women and men in their efforts to prevent, manage and overcome risks and vulnerabilities throughout their life cycle, and to realize their rights as citizens participating fully and equally in all decision-making which affects their access to and control over resources necessary to maintain and sustain a decent and secure life” (Homenet Southeast Asia, Homenet Philippines and MAGCAISA, 2009, p. 2).

Part of the broad meaning of social protection is the right to participate in the affairs of the community to which one belongs in order to ensure access to resources as well as to various forms of justice. Many workers, especially women, youth, and those in the informal economy, have been invisible and are hardly consulted or even informed about housing, land development and other programs that affect them directly. The weaknesses of many existing social protection programs are partly due to lack of dialogue, consultation, and participation by the people. The working people, considered to be the targets or objects of many development programs undertaken in their name, often do not have a hand in the design and implementation of these programs.

As earlier discussed, social protection must also address the environmental crisis which is truly worrisome, since it can be the source of “catastrophic risks” which must in turn be addressed by adequate and participatory DRRM and other

social protection initiatives at the community level. Given the extent of environmental damage and the possibility of even greater damage due to climate change, there is a pressing need to build a decent and sustainable economy based on green industry, agriculture and services, while at the same time creating millions of jobs in renewing forests, protecting coastal resources, reviving poisoned soil, cleaning up air and water sources, segregating and recycling mountains of waste, and last but not least, rebuilding damaged and vulnerable communities. It is in this sense that a **green economy is also a solidarity economy**, relying on the capacity of people to organize and create their own means to survive, prosper, and assist each other through cooperatives, fair trade groups, and other social enterprises. Social protection initiatives, therefore, should be linked to the broader goal of sustainable human development. (Ofreneo, R.E., 2010).

### ***Social, Gender, and Environmental Justice: Some Crucial Links***

The notion of realizing rights and entitlements, in social protection literature, is very related to various conceptions of justice –economic and social justice; gender and reproductive justice; and environmental, intergenerational and climate justice. Each of these concepts is important because in human rights discourse, the claim holders (or the citizenry) can always assert various compendiums of rights to the duty bearers (mainly the state) within the ethical ambit of seeking justice, long denied, in any of its current forms.

These interweaving notions of justice are embodied in the **People's Social Protection Agenda (PSPA)**, the product of a participatory and consultative process spanning years of sustained advocacy. It is a consolidation of the different views of various stakeholders – informal workers' associations led by Homenet Southeast Asia, Homenet Philippines and MAGCAISA, trade unions, women's groups and agencies, church-based and business groups, civil-society and community-based organizations, government institutions, academe and others – on how social security and protection can be developed to cover all Filipinos facing various levels of risks and vulnerabilities in life.



Taking a rights-based, transformative, gender-responsive, participatory and sustainable approach to social protection, the PSPA calls for jobs, social security, health care, education and skills, basic services, social assistance, voice, and justice for all. It connects social protection to various conceptions of justice in the context of worsening financial and employment crises, and in the wake of terrible disasters the country just suffered due to climate change.

Social justice has always been the battle cry of trade union, peasant and other class-based movements struggling for more equitable and egalitarian societies. Women have always participated in these usually male-led movements, but their contributions have often been rendered invisible and insignificant in most mainstream histories.

Authors of World Bank publications have actually placed a social justice perspective to various climate change characteristics. They show how less developed countries, poor people, women, and other vulnerable groups have become victims of injustice created by the “correlation of greenhouse gas emissions to wealth and growth,” the differential impact of climate change phenomena on various sectors based on their power and relation to natural resources, the increasing importance of and conflict over carbon assets,” etc. (Mearns, et al., 2009, p. 16).

Economic justice, which is often subsumed under the broader rubric of social justice, involves the exercise of economic rights related to the sphere of work, many of which are enshrined in the Universal Declaration of Human Rights, the International Covenant on Economic, Social, and Cultural Rights (ICESCR), and various ILO conventions, particularly those having to do with core labor standards and decent work. Of particular relevance in these times of financial and economic crisis is Article 11 of the ICESCR, which recognizes the right of everyone and everyone’s family to “an adequate standard of living,” including “adequate food, clothing, and housing, and to the continuous improvement of living conditions” (Balakrishnan, 2006, p. 26).

These rights are also implicated, according to World Bank authors, when natural impacts of climate change in turn impact on human systems, resulting in death, increased poverty, deprivation, ill health, and homelessness, as well as marginalization and exclusion of women, children, older people, indigenous communities and other vulnerable groups (Mearns et al., 2009, p. 14).

Economic justice also has both participative and (re)distributive aspects. The first refers to the capability to engage in remunerative work and have access to and control of resources to earn an income enough to maintain what has been referred to above as “an adequate standard of living.” The second refers to just compensation, fair prices (as propounded by fair trade advocates), and a reasonable share of the economic benefits derived from the application of one’s labor and talents. It also includes asset reform, especially when referring to use and ownership of land and water resources.

Key policy recommendations of the PSPA are driven by a strong sense of economic and social justice, specifically those categorized under jobs, social security, health care, education and skills, basic services and social assistance for all. Their major concerns are the interests of majority of the working people who are often invisible, vulnerable, and marginalized – the workers in the informal economy.

The concepts of gender justice and reproductive justice have also been deployed to underpin the PSPA. The conception of gender justice can be interpreted as access to entitlements and enabling mechanisms, as absence of discrimination, or as a compendium of positive rights for women’s empowerment. Goetz (2007) defines it as “the ending of—and if necessary the provision of redress for—inequalities between women and men that result in women’s subordination to men” (p. 15). The Asian Communities for Reproductive Justice say that what they are aiming for is “the complete physical, mental, spiritual, political, economic, and social well-being of women and girls, which will be achieved when women and girls have the economic, social and political power and resources to make healthy decisions about our bodies, sexuality and reproduction for ourselves, our families and our communities in all areas of our lives” (Sister Song, 2010, FAQ ).

Reproductive justice goes beyond the conventional frameworks of reproductive rights and health, since its basic assumption is the “intersectionality” of oppression, whether this is based on gender, class, race, nationality, sexual orientation, age, or any other differentiating factor. It has an integrated and transformative approach, taking into consideration the totality of women’s lived experiences at home, at work, in school, in bed, at the dining table, or any other place where they expend their creative energies and seek to alter power relations in their favor. It factors in resource status as a crucial ingredient in accessing comprehensive health care so essential for women to live full, productive, and satisfying lives. It also puts a premium on collective initiatives and movement building, conscious of the fact that patriarchy and other social hierarchies cannot be challenged without the force of a critical mass.

Thus, included in the reproductive justice agenda are universal health care, access to birth control, maternity and sickness benefits, pre and post natal care, child care and nutrition, shared parenting and housework, sex education for young people, etc. In the Philippine setting, the conjoined advocacy for both economic and reproductive justice is captured in the campaign of organized women for a Magna Carta for Workers in Informal Employment (MACWIE), for the Reproductive Health bill, and more generally, for the PSPA.

Similar to the discourse on human rights which are invested with inalienability and indivisibility, economic and reproductive justice are two sides of the same coin for women in poverty. Without economic justice, women cannot access services necessary for the attainment of optimum health. Without reproductive justice, women in poverty will neither be free nor be able to work, since they will be immobilized and saddled by multiple burdens and too many children, and will be too tired, too weak, or too vulnerable to sickness to engage in productive employment.

Social and gender justice, however, will come to naught if the web of life continues to be further frayed. Notions of environmental and inter-generational justice are very much linked to the concept of sustainable development. This posits that the well-being of future generations should be assured by present generations

through the wise use of natural resources and by refraining from abuse and despoliation of nature which could further endanger the ecosystems on which all life forms depend for continued existence. More specifically, future generations should not suffer the consequences of environmental degradation now accelerating in the context of climate change and global warming. Social protection when connected to this notion involves preparing and empowering whole communities of women and men, young and old, in preventing and addressing environmental disasters, as well as in mitigating their impact. Investing in green jobs and developing a green economy based on solidarity are also part of the solution.

Climate justice, as a related concept, is premised on the need for global equity, by obligating the industrialized countries most responsible for greenhouse gas emissions to compensate and assist the less developed nations now suffering from typhoons, floods, landslides and other after-effects of climate change resulting from these emissions. Such compensation and assistance should not be in the form of loans that lead to greater indebtedness (Tanchuling, 2010).<sup>19</sup> In fact, countries like the Philippines saddled with a huge debt burden should be given the space to write off some of this burden (particularly what are classified as odious or graft-ridden debts) or at least postpone payment until sufficient growth is achieved to make this feasible without sacrificing economic development and social services. The resources thus freed from automatic debt appropriation could be used for social protection and development. As the People's Social Protection Agenda (PSPA) elaborates, "The money, during these times of crises, should go to social infrastructure, investment in public health, education, child care and other social services, to generate decent jobs for women[and men], and relieve their burdens" (Barrameda, 2010, p. 24).

A people's social protection agenda anchored on human rights and interweaving notions of justice is necessarily a departure from the dominant development paradigm which privileges economic growth at all costs without regard for its impact on the poor, the vulnerable, and the marginalized. Process-wise, it is based on the principles of participatory development, synthesizing the inputs and opinions of multiple stakeholders but providing utmost consideration to those provided



by people's organizations. In terms of vision, it is more in harmony with the tenets of transformative and sustainable human development, which aims to transcend existing social hierarchies based on class, gender, race, ethnicity, etc. through participatory and accountable governance structures as well as cultural institutions promoting alternative lifestyles that simultaneously protect the environment.

***Protective, preventive, promotive, and transformative SP strategies***

Social protection can enhance adaptation and DRR benefits through protective and preventive strategies for coping, as well as through promotive and transformative strategies for building adaptive capacity. Examples of these social protection instruments and measures which have been found to have this impact by various studies are listed in the next table.

There are important differences between coping strategies (which are short-term responses that relieve the burden of risk once it has occurred) and strategies which build adaptive capacity, which in the context of climate change is defined as "the actual ability of a system to adjust (or adapt) to climate change, variability and extremes, moderating potential damage, taking advantage of opportunities, coping with consequences, as well as expanding its coping range under existing climate variability or future climate conditions." It also refers to "communities' capacity to take advantage of the benefits and opportunities associated with a changing climate" (Jones, et al., 2010, p. 5). Protective measures, in this context, "provide relief from deprivation" and include "social assistance for the chronically poor" (or those with the least adaptive capacity) such as social services, food and cash transfers, pensions, fee waivers and public works. Preventive measures are meant "to avert deprivation," and include "social insurance for economically vulnerable groups," unemployment benefits, social transfers, etc. They also include livelihood diversification and weather-indexed insurance which prevent "damaging coping strategies as a result of risks to weather-dependent livelihoods." On the other hand, "Promotive measures aim to enhance real incomes and capabilities of the poorest and most vulnerable populations..." thereby enhancing "resilience through livelihood diversification and security to withstand

climate-related shocks.” These include social and asset transfers, microfinance, drought- and flood-resistant starter packs, access to common property resources, and public works.” Transformative measures, which are more rights-based, “seek to address vulnerabilities arising from social inequity and exclusion of the poorest and most marginalized groups,” and could include “collective action for workers’ rights, protecting minority ethnic groups against discrimination or HIV and AIDS sensitisation campaigns” (Jones, et al., 2010, p. 12-13).

Table 1. Promoting Adaptation through Social Protection

SP Category	SP Instruments	Adaptation and DRR benefits
<b>Protective (coping strategies)</b>	<ul style="list-style-type: none"> <li>• Social service provision</li> <li>• Social transfers (food/cash) including safety nets</li> <li>• Social pension schemes</li> <li>• Public works programmes</li> </ul>	<ul style="list-style-type: none"> <li>• Protection of those most vulnerable to climate risks, with low levels of adaptive capacity</li> </ul>
<b>Preventive (coping strategies)</b>	<ul style="list-style-type: none"> <li>• Social transfers</li> <li>• Livelihood diversification</li> <li>• Weather-indexed crop insurance</li> <li>• Social insurance</li> </ul>	<ul style="list-style-type: none"> <li>• Prevents damaging coping strategies as a result of risks to weather-dependent livelihoods</li> </ul>
<b>Promotive (building adaptive capacity)</b>	<ul style="list-style-type: none"> <li>• Social transfers</li> <li>• Access to credit</li> <li>• Asset transfer or protection</li> <li>• Starter packs (drought/flood resistant)</li> <li>• Access to common property resources</li> <li>• Public works programmes</li> </ul>	<ul style="list-style-type: none"> <li>• Promotes resilience through livelihood diversification and security to withstand climate related shocks</li> <li>• Promotes opportunities arising from climate change</li> </ul>
<b>Transformative (building adaptive capacity)</b>	<ul style="list-style-type: none"> <li>• Promotion of minority rights</li> <li>• Anti-discrimination campaigns</li> <li>• Social funds</li> <li>• Proactively challenging discriminatory behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Transforms social relations to combat discrimination underlying social and political vulnerability</li> </ul>

Source: Davies et al. (2009). *Climate Change Adaptation, Disaster Risk Reduction and Social Protection. Promoting Pro-Poor Growth Social Protection*, OECD, p. 205.

It must be pointed out that protective, preventive, promotive, and transformative measures are not mutually exclusive but are actually mutually reinforcing, constituting various dimensions of an iterative process. The transformative potential of all social protection measures exists from the very beginning of implementation and needs to be progressively realized across time and space.

A sectoral approach can also be used in the formulation of strategies. In the public health sector, for example, adaptation is associated with prevention at primary, secondary and tertiary levels:

*Primary prevention aims to reduce exposures projected to occur with climate change, such as by increasing access to safe water and improved sanitation. Secondary prevention also aims to prevent the onset of adverse health outcomes, including through strengthening disease surveillance programs to provide early intelligence of the emergence or reemergence of vector-borne disease, such as malaria along the edges of its current range. Tertiary prevention consists of measures (often treatment) to reduce long-term impairment and disability and to minimize the suffering caused by existing diseases...*” (Ebi, 2009, p. 131).<sup>20</sup>

Resilience against the health impacts of climate change can be cultivated by increased understanding of associated health risks, enhanced policies, programs, and capacities of health care systems, support for community-based adaptation, and a cross-sectoral approach especially in the use of new and untested technologies (Ebi, 2009, pp. 132-139).

It must be pointed out that in the Philippine context, “the current planning environment is moving towards science-based and risk-based analysis to ensure that desired outcomes will not be affected by climate variability and extremes.” (NEDA, 2011, p. 2). It is in this context that social protection measures can be considered adaptation measures, especially if planned in an anticipatory manner.

The current menu of policies and programs under the social protection umbrella can be further analyzed in terms of their adaptive goals and characteristics as well as their transformational potential. This is best done in a participatory manner, inviting multiple stakeholders from both government and civil society organizations, and involving the social protection, DRR and climate change professional communities. Some strategic directions which can be up for discussion are drawn at the last part of this paper.

Offhand, however, it may be pointed out some notable gaps in current strategies. For one, farmers as a sector are not protected from the impact of climate change because they no longer enjoy crop insurance.<sup>21</sup> Ideally, the provision of such insurance should be weather-indexed (i.e., based on the amount of rainfall) so that it can be immediately accessed by affected farmers as soon as destructive flooding occurs in cropping areas. Secondly, the big-ticket conditional cash transfer program has no explicit environmental perspective and clear connection to DRR and CCA concerns in terms of articulated goals. Whatever DRR and CCA –related activities are integrated in the CCT program (e.g., awareness-raising during the Family Development Sessions, building of dikes and other public works for emergency employment especially of fathers with children in the CCT) do not seem to be part of a systematic strategy included in the overall CCT framework. If managed well, however, and if their transformational potential is fully explored in their program design, cash transfers by themselves “are likely to contribute to adaptive capacity” (Wood, 2011).<sup>22</sup>

### **Building Resilient Communities**

Resilience is defined as the “ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions” (UNISDR, 2009). Case studies from the Philippines show that a community’s level of resilience is negatively affected by many factors, among which are “the degree of environmental degradation, people’s [lack of] access and control of different forms of resources



and assets, high levels of poverty and inequality, beliefs, norms and practices that lead to the exclusion of women, children, the elderly and other minority groups, poor and unaccountable formal leadership and governance, lack of public awareness and participation in promoting a culture of safety” (Polotan dela Cruz, et al., 2010, p. 5).

On the positive side, the literature on the subject shows that there are key strategies in developing resilience at ground level, among which are strengthening local governments and communities; promoting consultation and participation; managing resettlement and rehabilitation; enhancing resilience of indigenous peoples in culturally appropriate ways; and filling knowledge gaps.(Ahmed et al, 2009). The overarching strategy for all this is improving the capacity of various communities to adapt to risks posed by climate change and other environmental hazards, and thereby reduce their vulnerability. The companion strategy for this to enhance the resilience of natural systems through various mitigation measures. (NEDA, 2011).

These are strategies validated by local case studies “which underscored different layers or dimensions of resilience” that at the same time revealed its complexity and multi-dimensionality: “active community participation, access and use of disaster information and knowledge, food security, livelihood security, good governance, development of appropriate technology, disaster preparedness and management planning, among others” (Polotan dela Cruz, et. al., 2010, p. 5).

The authors of the case studies conclude that “Community organizing [CO] is the key strategy for building disaster-resilient communities.” CO is built on people’s participation in identifying and solving their problems. It builds on what the people know and are already doing, thus cultivating in them a sense of ownership of the process of learning from their experiences and developing systems of survival.<sup>23</sup> It affirms the belief that communities are not helpless even during disasters, and can, with transient support from “external service providers,” go beyond being disaster victims towards being agents of their own survival and of social change. This is in view of the fact that there are structural barriers to

livelihood security (based on access to and control of productive resources), and there is need to address over the long term “the root causes of people’s vulnerability such as landlessness, natural resource degradation, lack of access to technology and credit, among others, and organizing and mobilizing people in order to challenge and transform these conditions” (Polotan dela Cruz, et. al., 2010, p. 9). The firm belief is that only the organized strength of an awakened people can serve as a counter-force to well-entrenched vested interests which remain in control of major productive assets and which continue to damage and deplete environmental resources. Appropriate technology development in the form of flood-resistant rice varieties and organic rice and vegetable farming can be facilitated by schools, parishes, and local governments. Scientific(or “expert”) knowledge and local wisdom can converge and complement each other, as exemplified by the creation and effective use of home-based rainfall monitoring stations as well as water-level measuring stations along rivers. NGOs and CBOs (community based groups) can adopt “a mainstreaming approach” to broaden citizen participation in local planning, budgeting, implementation and evaluation towards ensuring participatory and gender-responsive good governance.

In the context of the case studies, good governance means that “(1) government at the local (and national) levels is able to provide an effective institutional framework, policies and legislations that promote DRR as a priority; (2) institutions, organizations, and individuals who are responsible for reducing disaster risks exhibit accountability and transparency in their work; (3) funds and other resources are made available and are actually spent on activities that reduce vulnerabilities and disaster risks; and, (4) local communities and their organizations are able to exert influence and are involved in the promotion of a culture of safety” (Polotan dela Cruz, et. al., 2010, p. 7).

Having supportive decision-making mechanisms to facilitate the use of practical tools and technologies for preventing and mitigating impacts of climate change is very important (NEDA, 2011). This is well illustrated in the initiatives of Sorsogon City which are components of MDG-F 1656. These include, among others, the replacement of incandescent bulbs in all public buildings with compact

fluorescent lamp (CFL) bulbs; the modification of shelter designs to withstand disasters; the construction of safer schools, etc. (unhabitat website).

There are other perspectives and case studies which highlight the convergence of climate change adaptation, DRRM, and social protection, while using a gendered and sectoral approach in examining issues and proposing strategies specifically for women in fisheries (Tanyang, 2010 cited in Ferrer & Dalisay, 2010). Examples of specific actions for climate change adaptation in the context of social protection include micro-insurance for men and women in poverty, accessibility of socialized credit for women, simple water provision/impounding systems manageable at the village level, settlements and tenurial security, health and RH [reproductive health] service delivery, men's involvement in preventive health, referral systems responding to gender-based violence even during disasters, conflict and emergencies, promotion of affordable energy sources, and appropriate infrastructure and technology. Specific actions in the area of disaster preparedness include early warning systems reaching women, gender-responsive disaster management planning, and women-inclusive disaster management structures and decision-making.

Beyond climate change adaptation and DRRM, there is still a need to focus on ecological integrity, including environmental protection, in the building of resilient communities (NEDA, 2011). This means preserving and renewing ecosystems so that these will return to their natural state of being self-sustaining, and self-regulating. This includes "rainforestation," rebuilding of watersheds, protection of endangered species, shifting to organic farming, conserving energy while developing clean and renewable sources of energy, promoting environmentally sustainable transport systems, etc.

### **The Need for an Alternative, Integrated, Coherent, and Multi-Stakeholder Approach**

The risks associated with climate change are multiple and require an integrated and multi-stakeholder approach, involving all who are working on social protection, climate change, and disasters. The risks could be direct and can take

the form of disasters or decreased harvest; they could be indirect as in the case of vector-borne epidemics, rising prices and unemployment; they could result in “irreversible damages to life, and human, physical, social/cultural, natural, and political assets.” They could occur more frequently and with less predictability. The scale and frequency may not be possible to address by local household and community strategies and require a broad effort from both state and non-state actors and traversing all levels of interventions from local to global (Heltberg, et al., 2008, p. 25). It is also both unrealistic and unfair to expect individual households and communities to bear the burden of adapting to the adverse impacts of climate change which they had virtually no role in creating.

At the national level, state agencies must build their “institutional adaptive capacity” in terms of scientific knowledge, skills, and attitudes to plan, implement and evaluate strategies in a coherent and coordinated manner to adequately respond to the challenge of climate change. “Measures for institutional effectiveness in reducing vulnerability to climate change” could be considered in such capacity building, including “developing innovative risk transfer mechanisms,” providing incentives to agencies “which target zero casualties”, preparing “anticipatory plans,” investing in “early warning devices and disease surveillance mechanisms,” etc. (NEDA, 2011). This capacity must be built not only at the national level but also at the regional, provincial, municipal, and barangay levels. Inter-agency committees and coordinating councils dealing with social protection, DRRM, and climate change at all levels need to be on the same page in terms of analyses, perspectives, frameworks, and directions. Foregrounding the rights-based sustainable human development framework as mandated by both the DRRM and climate change laws is a necessity in this regard.

The institutionalization of civil society participation at all levels of governance – from the local to the global – needs to be ensured so that grassroots advocacy from below can be met by support from above. Forces for change inside and outside government must be able to effectively work together at micro, meso, and macro levels, building unities while respecting differences. Moving towards a green economy, low-carbon development, organic and other sustainable forms



of agriculture, food security, community-based DRRM, encouraging indigenous yet science-based innovation; e.g., lifeboats made of GI sheets and wood for flood-prone areas, require enormous political will and corresponding resources. The need to provide universal, long-term, transformative and adaptive forms of social protection, including expanding social insurance schemes for emergency needs, climate-proofed shelter and sustainable livelihood, magnifies the resource concerns. The importance of funding and financing mechanisms from both internal and external sources, as well as the transparent, equitable, and accountable handling of such resources cannot be overemphasized.

In the realm of adaptive social protection, and as highlighted by the post-*Ondoy* and *Pepeng* needs assessment, much more resources need to be allocated to measures such as cash or food transfers; i.e., in the form of cash or food for work programs, community block grants to “create meaningful work and leverage sweat equity”, trauma counseling, services to meet the specific concerns of women, children, the elder, people with disabilities, etc. Core shelter programs have to be increased, basic services and livelihood opportunities have to be built in relocation areas in a process wherein the affected communities are thoroughly consulted and engaged.<sup>24</sup> Employment is a key concern, not only in terms of emergency work and income support for the most vulnerable, but also of “local economic recovery measures, “ “reintegration of displaced peoples, “ and promoting decent work, including social protection. (Special National Public Reconstruction Commission and the World Bank, 2009, pp. 34-35).

Both climate change and DRRM problems and proposed solutions transcend political boundaries and require ever expanding arenas of advocacy and solidarity, especially among the poor, the vulnerable, and other victims of injustice. Their visibility and voice are important at all levels for them to exercise agency in claiming their rights and entitlements in an increasingly insecure, unprotected, divided, and violent world. It is in this sense that adaptive social protection can be considered an instrument of social, gender, and environmental justice in the era of climate change.



## Endnotes

<sup>1</sup> This Social Protection Think Paper, prepared by the consultant (Dr. Rosalinda Pineda Ofreneo), is an output of the project entitled “Towards the Operationalization of the Social Protection Strategy” implemented by the Department of Social Welfare and Development (DSWD) in collaboration with the National Economic and Development Authority (NEDA) - Social Development Staff (SDS), with financial support from the United Nations Development Programme (UNDP), through the UNDP Country Programme Action Plan (CPAP) 2005-2011 Portfolio on Poverty Reduction and Support for the MDGs, with NEDA-SDS as Implementing Partner (IP), under its 2011 Annual Work Plan (AWP).

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<sup>2</sup> The impacts on the macro-economy, poverty, employment and livelihood, governance, and vulnerable groups have been well-documented, and the implications on disaster risk reduction and management (DRRM) have been clearly drawn by the Special National Public Reconstruction Commission and the ADB, UN, World Bank Group and other Global Facility for DRR partners in the Typhoon Ondoy and Pepeng Post-Disaster Needs Assessment main report.

<sup>3</sup> Official government reports in 1999 stated that the El Niño phenomenon in 1997-98 resulted in a 6.6 percent drop in Gross Domestic Product (Lasco et al. as

cited in Garcia Rincon & Virtucio, 2008, p. 17). It also caused a combined loss of 1.8 million tons in rice and corn production. (PCARRD, 2001 as cited in Garcia Rincon et al., 2008).

<sup>4</sup> “Reefs in poor condition increased to 40% in the last 20 years due partly to ocean warming.” (Capili, et al., 2005 as cited in Garcia Rincon & Virtucio, 2008, p. 20). Among the other climate-related risks already observed by women in fisheries are sea level rise, “increased water surface temperature affecting fishponds..., increased soil erosion and sedimentation in the coastal areas affecting sea grass, corals, mangrove areas,...disappearance/reduction of migratory fishes “ such as alumahan, banak, and hasa-hasa, and “unpredictability of dry and wet season” (Tanyang, 2010 as cited in Ferrer & Dalisay, 2010, p. 30.)

<sup>5</sup> An International Food Policy Research Institute (IFPRI) study for submission to the Asian Development Bank and the World Bank projects that by 2050, “irrigated rice yields will fall by 15 percent..., and rice prices will go up by as much as 121 percent with climate change.” “Climate change to affect 25M kids in 2050...” (Inquirer.net, Sept. 30, 2009).

<sup>6</sup> “Data from the Department of Health showed how malaria cases (more than 1,500 recorded cases) and other diseases increased in 1998, a year when temperature rose as a consequence of El Niño” (Global Health Monitoring 2008 as cited in Garcia Rincon, et al., 2008 p. 21).

<sup>7</sup> “Saltwater intrusion has been reported to be evident in nearly 28 percent of coastal municipalities in Luzon, 20 percent in the Visayas, and almost 29 percent in Mindanao” (Rellin, et al., 1999 as cited in Garcia Rincon, et al., 2008, p. 20).

<sup>8</sup> There are predictions that sea water will intrude into Laguna Lake, thereby making it impossible to be a source of fresh water for Metro Manila in the future (Godilano, 2009, p. 16).

<sup>9</sup> Three reasons are cited for this, in the case of rural women. They have fewer assets to sell when floods or drought ruin crops. Second, they tend to go more into

debt due to climate-induced crop failures. Third, when there is food shortage, they prioritize their men and their children in food allocation (Peralta, 2008). At a more general level, gender advocates in the fisheries sector point out the following: “Gender as a vulnerability category is seldom taken into account in ensuring protection of victims of natural disasters; Gender-based violence continues as a threat to the security and dignity of women even in times of crisis; There is an unmet understanding of male perspectives and masculinities in the context of vulnerabilities and disasters; and gender is seldom taken into account in development programming, particularly in climate change adaptation and disaster preparedness and response” (Tanyang, 2010, cited in Ferrer & Dalisay, 2010, p. 28-32).

<sup>10</sup> The MDG-F 1656 has demonstration areas in Metro Manila, Bicol, Agusan, Benguet, and Sorsogon which “incorporate the ‘learning by doing’ approach and tests innovative climate change adaptation measures and approaches as well as the capacity building of community stakeholders” (NEDA, 2011). In Agusan, for example, the ILO-DTI-DOLE Market Research Report recommended measures to address the vulnerability of small farmers to climate change. In Benguet, efficient farming mechanisms were implemented in accordance with a newly formulated adaptation framework ((NEDA, 2011).

<sup>11</sup> Adaptation is defined in the Philippine DRRM Act of 2010 as “the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.” Mitigation, on the other hand, refers to “structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation, and technological hazards and to ensure the ability of at-risk communities to address vulnerabilities aimed at minimizing the impact of disasters, construction and engineering works, the formulation and implementation of plans, programs, projects and activities, awareness raising, knowledge management, as well as the enforcement of comprehensive land-use planning, building and safety standards, and legislation.”

<sup>12</sup> Leaders of the Climate Change Congress of the Philippines (CCCCP) have critiqued the river basin management approach, preferring the more encompassing watershed (river to ridge) management approach that goes beyond the traditional political territorial divisions into cities and municipalities. One primary negative example of this is the poor watershed management in Marikina and surrounding cities of Antipolo, San Mateo, Montalban, etc. which was the root cause of the severe flooding experienced by these areas during Typhoon Ondoy.

<sup>13</sup> These could include electric jeeps, and small boats made of indigenous and inexpensive materials invented by people in frequently flooded communities.

<sup>14</sup> Based on various comments during the March 29, 2011 meeting of the NEDA Social Development Committee-Subcommittee on Social Protection, other agencies should appear in the program scoping if climate change adaptation will be seriously taken on board. An example is the Department of Education which is mandated to integrate climate change in the curricula and is now promoting the building of a safe learning environment through green technology and hazard-resilient features. Another is the Department of Agrarian Reform which now has a desk focusing on mainstreaming climate change and DRRM concerns in various programs for its beneficiaries. The Commission on Higher Education is also addressing climate change and the need for social protection through teaching, research, and extension. In fact, it hosted an International Conference on Biodiversity and Climate Change on February 1-3, 2011 together with the Department of Environment and Natural Resources (another agency which should be included in the program scoping because it is mandated under the Implementing Rules and Regulations (IRR) of R.A. 9729 to “oversee the establishment and maintenance of a climate change information management system.” Also mentioned in the IRR are the Department of Interior and Local Government (DILG) and Local Government Academy which “shall facilitate the development and provision of a training program for LGUs in climate change and initiate related activities.” The Housing and Urban Development Coordinating Council could also be included because of the need to integrate climate change concerns in core shelter plans of local governments.

<sup>15</sup> This was P17 billion or 0.3% of GDP in 2007, and P62 billion or 0.8% of GDP in 2008, less than half of the mean spending (1.9% of GDP) by a group of 87 countries in 1996-2006 (Weigand & Grosh, 2008, cited in Manasan, 2009, p. 72).

<sup>16</sup> Marivic Raquiza of Social Watch, during the March 29, 2011 meeting of the NEDA-SDC Subcommittee on Social Protection, pointed out that while there was an increase in social spending in the current government budget, allocations for agriculture and agrarian reform had gone down. Price support for palay and food subsidy through the National Food Authority (NFA) should not be cut down, since such measures could be considered just as important as the CCT and therefore should not be pitted against it.

<sup>17</sup> This was reported by DSWD Secretary Corazon J. Soliman during a dialogue with the UP CSWCD faculty on March 22, 2011.

<sup>18</sup> One example of maladaptation is the building of dikes to contain floods, but which “began to trap flood waters or actually prolong floods.” Another is the construction of coastal structures that have the effect of eroding nearby coasts. It is in this sense that short-term DRR “does not necessarily contribute to longer-term climate change resilience” (Huq & Ayers, 2009, p. 144).

<sup>19</sup> In fact, the United Nations Framework Convention on Climate Change (UNFCCC), in Article 4.3, provides that this should be in the form of new and additional financing resources (NEDA, 2011).

<sup>20</sup> See also Table 8-1 – Examples of Adaptation Options to Address Climate-Related Health Risks in Ebi, 2009, p. 137).

<sup>21</sup> This was pointed out during the meeting of the NEDA SDC Subcommittee on Social Protection last March 29, 2011, to the surprise of those in attendance because crop insurance is included in the social protection program scoping prepared by the DAP (see Fig. 2 of this paper).



<sup>22</sup> They may contribute in a number of ways: “a)meeting existing basic needs, thereby reducing short-term vulnerability and existing development deficits at the household level; b) helping the poor respond to climate-related shocks; c) reducing the pressure to engage in coping strategies which weaken long-term adaptive capacity; d) helping vulnerably households to better manage risk and therefore consider investment decisions and innovations to increase their adaptive capacity; e) transferring money for investment in long-term livelihood and adaptive capacity improvement; and, f) facilitating mobility and livelihood transitions” (Wood, 2011, p. 1).

<sup>23</sup> One example of this is the homegrown evacuation system of Barangay Salinding to guard against flooding: “They know where to evacuate, whom to help, and when it is time to evacuate. Those with riverboats bring their families to safer ground, then return to help others evacuate. The families with sturdier, elevated houses accommodate the temporary evacuees. These traditional arrangements and practices now form part of an effective system of disaster management in the community; no deaths due to flooding have been recorded thus far in the village.” (Polotan dela Cruz et.al., 2010, p. 6)

<sup>24</sup> This is not an easy task, according to DSWD Undersecretary Alice Bala during the March 29 meeting of the NEDA SDC Subcommittee on Social Protection. There are instances when safe relocation areas in disaster-prone localities are difficult or impossible to find, thus delaying resettlement of vulnerable communities.

## References

- Agenda on transformative social protection as a democratic and human rights response to the crisis.* (2009). Manila, October 12-13.
- Agasaoay Sano, E. (2010). Advocacy and support work for the disaster risk reduction and management (DRRM) law in the Philippines. In L. Polotan-dela Cruz, E. Ferrer & M. Pagaduan (Eds.), *Building disaster-resilient communities: Stories and lessons from the Philippines* (pp. 129-143). Quezon City, Philippines: CSWCD-UP.
- Ahmed, N., Dalal, H. & Forusz, S. (2009). Chapter 10. The social dimension of climate change. In *South Asia Climate Change Strategy* (Draft Report) Retrieved from [http://www.lead.org.pk/cc/attachments/Blogs\\_Discussions/WB\\_SA\\_CC\\_Strategy/5\\_Social\\_Dimensions\\_CC.pdf](http://www.lead.org.pk/cc/attachments/Blogs_Discussions/WB_SA_CC_Strategy/5_Social_Dimensions_CC.pdf)
- Archer, D. & Rahmstorf, S. (2010). *The climate crisis: An introductory guide to climate change*. United Kingdom: Cambridge University Press.
- Asian Development Bank. (2011). *Climate change and migration in Asia and the Pacific*. Retrieved from [http://www.eenews.net/assets/2011/02/10/document\\_cw\\_01.pdf](http://www.eenews.net/assets/2011/02/10/document_cw_01.pdf)
- Balakrishnan, R. (2006). *Why MES with human rights? Integrating macro economic strategies with human rights*. New York: Marymount Manhattan College.
- Barrameda, T. (2010). *Policy brief on disasters and women workers in the informal economy*. Homenet Southeast Asia.
- Brainard, L., Jones, A. & Purvis, N. (Eds.). (2009). *Climate change and global poverty*. Washington D.C.: Brookings Institution Press.

- Casis, R.J. (Ed.). (2008a). *Experts dialogue on Philippine climate change policy*. Quezon City: Institute of International Legal Studies, University of the Philippines Law Center.
- Casis, R.J. (2008b). Addressing climate change in the Philippines: An integrated adaptation-mitigation approach. *Experts Dialogue on Philippine Climate Change Policy*, 3, 1-85.
- Climate Change Commission, Office of the President of the Philippines. (2010). *National framework strategy on climate change 2010-2022*.
- Corpuz, V. & de Chavez, R. (2009). *Guide on climate change and indigenous peoples*. Baguio City: Tebtebba Foundation.
- Davies, M., Oswald, K. & Mitchell, T. (2009). *Climate change adaptation, disaster risk reduction and social protection. Promoting pro-poor growth: Social protection*. Report prepared by the Development Assistance Committee Network on Poverty Alleviation. OECD.
- Development Academy of the Philippines. (2009). *Review and strengthening of the national social protection and welfare program (2009)*. Prepared for the National Social Welfare Program Cluster and National Economic and Development Authority.
- Devereux, S. & Sabates Wheeler, R. (2007, May 3). Transformative social protection. *IDS Bulletin*, 38 (3).
- Ebi, K. L. (2009). Public health adaptation to climate change in low-income countries. In L. Brainard, A. Jones & N. Purvis, N. (Eds.), *Climate change and global poverty* (pp.130-141). Washington D.C.: Brookings Institution Press.

- Ferrer, E. & Dalisay, S. (Eds.). (2010). *Workshop on women in fisheries and climate change*. Quezon City, Philippines: Organizing Committee for the Workshop on Women in Fisheries and Climate Change.
- Garcia Rincón, M.F. & Virtucio Jr., F. K. (2008, June 27). *Climate change in the Philippines: A contribution to the country environmental analysis*. (Draft for discussion).
- Godilano, E. C. (2009). *Global climate change and its impacts on agriculture and fishery production in the Philippines*. Information Technology Center for Agriculture and Fisheries, Department of Agriculture.
- Goetz, A.M. (2007). Gender justice, citizenship and Entitlements: Core concepts, central debates and new directions for research. In M. Mukhopadhyay & S. Navsharan (Eds.), *Gender justice, citizenship and development*. Zuburan/IDRC Accessed February 20, 2010 at [http://www.idrc.ca/en/ev-111764-201-1-DO\\_TOPIC.html](http://www.idrc.ca/en/ev-111764-201-1-DO_TOPIC.html)
- Helpdesk research report: Climate change and social protection*. (2008). London: Governance and Social Development Resource Center.
- Heltberg, R., Jorgensen, S.L. & Siegel, P.B. (2008). *Climate change, human vulnerability and social risk management*. Social Development Department, World Bank Group. Retrieved from [http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/SDCCWorkingPaper\\_SRM.pdf](http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/SDCCWorkingPaper_SRM.pdf)
- Homenet Southeast Asia, Homenet Philippines and MAGCAISA. (2009). *Policy brief on social protection*.
- Human Development Report 2007/2008. *Fighting climate change: Human solidarity in a divided world*. UNDP (Main Report).
- Huq, S. & Ayers, J. (2009). Linking adaptation and disaster risk reduction. In L. Brainard, A. Jones & N. Purvis (Eds.), (2009). *Climate Change and Global Poverty* (pp.142-154). Washington D.C.: Brookings Institution Press.

- Inquirer.net (2009, September 30). *Climate change to affect 25M kids in 2050, \$7B to ease temperature rise impact on poor*. Retrieved from <http://globalnation.inquirer.net/news/breakingnews/view/20090930-227675/Climate-change-to-affect-25M-kids-in-2050>
- Jones, L., Jaspars, S., Pavanelo, S., Ludi, E., Slater, R., Arnall, A., Grist, N. & Mtisi, S. (2010). *Responding to a changing climate – Exploring how disaster risk reduction, social protection and livelihoods approaches promote features of adaptive capacity*. Working Paper 329, Overseas Development Institute.
- La Vina, A.G.M. (2008). Addressing climate change in the Philippines: An integrated adaptation-mitigation approach. *Experts Dialogue on Philippine Climate Change Policy, 1*, 86-108.
- Luna, E.M. (2004). *Mainstreaming community-based disaster risk management in local development planning*. Paper presented at the Forum on Framework-Building for Investigation of Local Government Settlement Planning Responses to Disaster Mitigation, January 17, 2007 sponsored by the Alternative Planning Initiatives (ALTERPLAN), Quezon City.
- Manasan, R. G. (2009). *Reforming social protection policy: Responding to the global financial crisis and beyond*. PIDS Discussion Paper Series. Makati City: Philippine Institute for Development Studies.
- Mearns, R., Norton, A. & Cameron, E. (2009). *The social dimensions of climate change: Equity and vulnerability in a warming world*. (New Frontiers of Social Policy Series). World Bank Publications. Retrieved from <http://www.fishpond.com.au/Books/Social-Dimensions-of-Climate-Change-Robin-Mearns-Andrew-Norton/9780821378878>
- National Statistical Coordination Board (NSCB). (2011, February 8) 2009 *Philippine poverty statistics*.



- NEDA. (2011). Comments on the paper *Addressing the social dimensions of climate change through adaptive social protection*.
- NEDA. (2007). *NEDA Social development committee resolution series of 2007*. Retrieved from [www.nscb.gov.ph/poverty/default.asp](http://www.nscb.gov.ph/poverty/default.asp)
- O'Connor, R.K. (2006). *How should the world respond to natural disasters?* San Diego, California: Greenhaven Press.
- Ofreneo, R. E. (2010). *Green jobs and green skills in a brown Philippine economy*. Manila: International Labour Office.
- Ofreneo, R.P. (Ed.). (2010). *People's social protection agenda: Towards social protection for all*. Quezon City, Philippines: CLJ/ACIW and Homenet Southeast Asia. Available at <http://www.socialprotectionasia.org/pdf/People%27s%20Social%20Protection%20Agenda->
- Park, J., Conka, K. & Finger, M. (2008). *The crisis of global environmental governance*. New York: Routledge.
- Peralta, A. (2008, November). *Gender and climate change finance: A case study from the Philippines*. Women's Environment and Development Organization and the Heinrich Boell Foundation. Retrieved from <http://www.wedo.org/prototype/wp-content/uploads/genderandclimatechangefinance.pdf>
- Polotan dela Cruz L., Ferrer, E. & Pagaduan, M. (Eds.). (2010). *Building disaster-resilient communities: Stories and lessons from the Philippines*. Quezon City, Philippines: CSWCD-UP.
- RA09729. *Climate change act of 2009*. 14<sup>th</sup> Congress. Origin: Senate (SB02583 / HB05982). Approved by the President on October 23, 2009. Also available at [http://www.congress.gov.ph/download/ra\\_14/RA09729.pdf](http://www.congress.gov.ph/download/ra_14/RA09729.pdf)

RA10121. *Philippine disaster risk reduction and management act of 2010*. 14<sup>th</sup> Congress. Origin: Senate (SB03086 / HB06985). Approved by the President on May 27, 2010. Also available at [http://www.congress.gov.ph/download/ra\\_14/RA10121.pdf](http://www.congress.gov.ph/download/ra_14/RA10121.pdf)

Sister Song Women of Color Health Collective. (2010). *What is reproductive justice?* Retrieved from [http://www.sistersong.net/reproductive\\_justice.html](http://www.sistersong.net/reproductive_justice.html)

Special National Public Reconstruction Commission and the World Bank. (2009). *Philippines typhoons Ondoy and Pepeng: Post disaster needs assessment* (Main Report). Also available at <http://siteresources.worldbank.org/INTPHILIPPINES/Resources/PDNAVol1MainReport.pdf>

*Strengthening disaster risk reduction in the Philippines: Strategic national action plan 2009-2010*. (Main Report).

Tanchuling, M. (2010). *Climate justice*. Presentation during the National Workshop on Gender, Informal Work, Climate Change and Participatory DRRM. CSWCD, August 21, 2010.

Tandoc Jr., E.C. (2009, June 25). Climate change shortens fishing season. *Philippine Daily Inquirer*. Retrieved from <http://newsinfo.inquirer.net/breakingnews/nation/view/20090625-212327/Climate-change-shortens-fishing-season>

Tanner, T. (2010). Shifting the narrative: child-led responses to climate change and disasters in El Salvador and the Philippines. *Children and Society*, 24, 339–351 DOI:10.1111/j.1099-0860.2010.00316.x. Institute of Development Studies, Brighton, UK

United Nations International Strategy for Disaster Reduction (UNISDR). (2009). *Terminology on DRR*. Retrieved from [www.unisdr.org/we/inform/terminology](http://www.unisdr.org/we/inform/terminology)

Villarin, J. R. T., Loyzaga, M.A. & La Vina, A.G.M. (2008). *In the eye of a perfect storm – What the Philippines should do about climate change*. SCJ Professorial Lecture.

WHO Western Pacific Region. *Climate change country profile: Philippines*. Retrieved from <http://www.wpro.who.int/NR/rdonlyres/92EC0A38-6EA7-4BDA-B19E-C2E398D4724D/0/PHL.pdf>

Wood, R. G. (2011). *Is there a role for cash transfers in climate change adaptation?* Paper presented during the Social Protection as Social Justice Conference, Institute of Development Studies, Brighton, 13-15 April.

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

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**Aleli B. Bawagan**

*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 medications to 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.



## References

- Agsaoay-Saño, E. (2010). Advocacy and support work for the disaster risk reduction and management law in the Philippines. In L. Polotan dela Cruz, E.M. Ferrer, & M.C. Pagaduan (Eds.), *Building disaster-resilient communities: stories and lessons from the Philippines* (pp. 129-143). Quezon City: CSWCD-UP.
- Balang, A. (2010). Building disaster resilient communities among the urban poor in Cebu City. In L. Polotan dela Cruz, E.M. Ferrer, & M.C. Pagaduan (Eds.), *Building disaster-resilient communities: stories and lessons from the Philippines* (pp. 97 - 119). Quezon City: CSWCD-UP.
- Bawagan, A. B. (2011). Communities rising from the mud and landslides. Proceedings of the 2<sup>nd</sup> Asia Pacific Regional Conference on Community Development: *Enriching CD Education amidst global economic and environmental crises*, 145-151. Quezon City: UP CSWCD.
- Bawagan, A.B. (2010). Reflections on building disaster resilient communities among the urban poor in Cebu City. In L. Polotan dela Cruz, E.M. Ferrer, & M.C. Pagaduan. (Eds.), *Building disaster-resilient communities: stories and lessons from the Philippines* (pp. 120-128). Quezon City: CSWCD-UP.
- Citizen's Disaster Response Center (CDRC). (1992). *Disasters: The Philippine experience*. Quezon City: CDRC.
- Delica, Z. (2001). Foreword. In A. Heijmans & L.P. Victoria. (2001). *Citizenry-based and development-oriented disaster response*. Quezon City: Center for Disaster Preparedness.
- Garcia, A. (2010). Installing early warning system along the Agos River in the municipalities of Infanta and General Nakar. In L. Polotan dela Cruz, E.M. Ferrer, & M.C. Pagaduan. (Eds.), *Building disaster-resilient communities: stories and lessons from the Philippines* (pp. 9 - 22). Quezon City: CSWCD-UP.

- Heijmans, A. & Victoria, L. P. (2001). *Citizenry-based and development-oriented disaster response*. Quezon City: Center for Disaster Preparedness.
- ISDR (2007). *Words into action: a guide for implementing the Hyogo framework*. Geneva: UN Secretariat of the ISDR.
- Lopez, V. & de Leon, J. (2011, June 27). Falcon' damage estimated at P54-M. *Sun Star Manila*. Retrieved from <http://www.sunstar.com.ph/manila/local-news/2011/06/27/falcon-damage-estimated-p54-m-163402>
- Luna, E.M. (2004). *Networking and advocacy among NGOs: A case study of the Philippine disaster management forum*. Paper read at the 7<sup>th</sup> International Conference of Philippine Studies, The Philippines: Changing landscape, manscapes and mindscapes in a globalizing world. Leiden. The Netherlands.
- Luna, E.M. (2010). Warning: Take heed, early warning system being installed. In L. Polotan dela Cruz, E.M. Ferrer & M.C. Pagaduan (Eds.), *Building disaster-resilient communities: stories and lessons from the Philippines* (pp. 23-32). Quezon City: CSWCD-UP.
- Panay Rural Development Center Inc. (PRDCI) & Tionko, A. (2010). Reducing livelihoods vulnerability for disaster resilience: The Barangay Sianon BDRC experience. In L. Polotan dela Cruz, E.M. Ferrer & M.C. Pagaduan. (Eds.), *Building disaster-resilient communities: stories and lessons from the Philippines* (pp. 159-181). Quezon City: CSWCD-UP.
- Polotan dela Cruz, L.P., Ferrer, E.M. & Pagaduan, M.C. (Eds.). 2010. *Building disaster-resilient communities: Stories and lessons from the Philippines*. Quezon City: CSWCD-UP.
- Reyes, M.L. (2010). *AADMER work programme 2010-2015*. Retrieved from [http://www.pacificdisaster.net/pdnadmin/data/original/ASEAN\\_AADMER\\_2010\\_IAP\\_work\\_prgrmm.pdf](http://www.pacificdisaster.net/pdnadmin/data/original/ASEAN_AADMER_2010_IAP_work_prgrmm.pdf)

Sphere Project (2004). *Humanitarian charter and minimum standards for disaster response*. Switzerland: Sphere Project.

Tanchuling, M.L.V. (2010). Of livelihoods, food security, people's participation and disaster risk resiliency: Reflecting on PDRCI's BDRC experience. In L. Polotan dela Cruz, E.M. Ferrer & M.C. Pagaduan (Eds.), *Building disaster-resilient communities: stories and lessons from the Philippines* (pp. 182-192). Quezon City: CSWCD-UP.

United Church of Christ in the Philippines (UCCP). (1992). *Disaster management sourcebook 2*. Quezon City: UCCP.

United Nations International Strategy for Disaster Reduction (UNISDR). (2007). *Hyogo Framework for Action*. Retrieved from <http://www.unisdr.org/we/coordinate/hfa>

Wamil, R.A.V. (2010). Decentralizing disaster information: Reflections on the BRB2 project. In L. Polotan dela Cruz, E.M. Ferrer & M.C. Pagaduan (Eds.), *Building disaster-resilient communities: stories and lessons from the Philippines* (pp. 58-66). Quezon City: CSWCD-UP.

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# **LESSONS AND CHALLENGES IN DISASTER RELIEF OPERATIONS FOR FAMILIES AFFECTED BY TYPHOON ONDOY IN RIZAL PROVINCE**

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*Due to the 2009 flood brought by Typhoon Ondoy, relief operations were done through the partnership of a humanitarian organization and the academe. The engagement of the academe was deemed important to document and draw lessons from the experience in emergency response. This paper examines the experience on disaster relief operations. It looks at the processes, good practices, challenges and issues faced during the provision of relief goods from needs assessment, pre-distribution preparation, actual distribution and post-distribution activities. The paper provides insights in improving practices in disaster relief operations that can contribute to more humane processes, better interpersonal relations and substantial impact.*

## **A. Background**

Reducing risks during the emergency and post emergency situations is imperative to minimize physical, social, and economic losses among families affected by disasters. Disaster relief operations focused on providing assistance to emergency situations. An emergency is an extraordinary situation where there are serious and immediate threats to human life as a result of disaster (Kotze &

Holloway, 1996). During disasters, individuals and organizations engage in concerted efforts to mobilize resources to help those who are in need. While helping people through relief operations is a common response, there is very little effort to document and assess the processes that can help improve this practice.

The flood caused by Typhoon Ondoy on September 26-27, 2009 wreaked havoc in the Philippines, leaving great damage to property and losses in human lives. In Rizal province alone, it was reported that 80 out of 188 villages were badly hit by Ondoy. Eighty two died and 37,570 families and 263,224 individuals were affected (ABS-CBN 2009).

The situation prompted the U.P. College of Social Work and Community Development (CSWCD) and its affiliate organization, the *Sikhay Kilos* Development Association (*Sikhay*) to initiate ways to help its partner communities who were affected by the flood. This is in line with the CSWCD's mission of "academic excellence in the service of the nation and the global community through participatory, gender responsive, empowering and transformational development praxis" (CSWCD 2007). *Sikhay* is a non-stock and non-profit organization composed of CSWCD faculty, staff and alumni that aim to advance the welfare concerns of the poor, marginalized, and vulnerable groups (*Sikhay*, 2009). Both CSWCD and *Sikhay* were engaged by the Oxfam Great Britain (Oxfam), a humanitarian organization, in assisting the communities in the province of Rizal through the provision of relief goods, particularly family hygiene kits (FHK). This is part of Oxfam's program for emergency public health that includes construction of hygiene facilities in evacuation centers, capacity building for health workers, livelihood assistance and advocacy work for better health and sanitation during emergencies.

Oxfam's project with *Sikhay* was called *Emergency Public Health Support to Selected Sites in Rizal Province Heavily Affected by Tropical Storm Ondoy*. It was implemented on October 16 - December 15, 2009. The project initially targeted to distribute FHKs to 6,000 families. Upon agreement of Oxfam and *Sikhay*, it was extended to 8,500 considering the number of families who were still in need. The project was able to distribute FHKs to 9,493 families in five municipalities of Rizal as shown in Table 1.



Table 1. Number of Families Given FHK

<b>Municipalities</b>	<b>No. of Evacuation Centers and Communities</b>	<b>Families Served</b>
Angono	27 in four barangays	2,961
Binangonan	7 in two barangays	620
Montalban	5 in four barangays	806
San Mateo	13 in four barangays	2,811
Taytay	11 in two barangays	2,295
<b>Grand Total</b>	<b>63 in 16 barangays</b>	<b>9,493</b>

Source: *Sikhay* Kilos Development Association, 2010

The FHKs contained two jerry cans (water container), one *tabo* (water dipper), two sleeping mats, two cotton bed sheets, three packs of sanitary napkins, three men's underwear, three boys' underwear, three girls' underwear, two large ladies' underwear, one XL ladies' underwear, 10 bath soap, seven small size laundry soap, and three large size laundry soap. These items were decided upon by Oxfam, based on their standards and guidelines for gender sensitive health and sanitation assistance. In addition to these, the Food Security and Livelihood (FSL) group, also of Oxfam, provided P1,000.00 cash to the families.

This project also aimed to document the experience in relief operations to enhance disaster relief practice and to identify further needs of the communities for rehabilitation purposes. This paper is a product of the documentation research done in connection with the relief operations.

*Sikhay* formed a project management team to do the assessment, pre-distribution, actual distribution and post-distribution tasks. The team was composed of a volunteer CSWCD faculty as team-leader, three project personnel, and volunteer faculty, staff, students and CSWCD friends. On the other hand, Oxfam had separate teams for FSL and FHK. *Sikhay* worked directly with the FHK team who was responsible in making initial assessment of the situation of the evacuation centers and communities, coordination with the Oxfam team responsible in packing, and transporting the relief goods.

## B. Framework for Disaster Relief Operations

International humanitarian agreements provide standards of conduct for disaster response among humanitarian organizations. These are “The Code of Conduct for the International Red Cross Movement and NGOs in Disaster Relief (ICRC)”, the SPHERE Humanitarian Charter and Minimum Standards (SPHERE), and the Human Accountability Partnership (HAP). ICRC, for instance, promulgates the following principles in relief work (International Red Cross Movement, n.d.):

- “• *The humanitarian imperative comes first.*
- *Aid is given regardless of the race, creed or nationality of the recipients and without distinction of any kind. Aid priorities are calculated on the basis of need alone.*
- *Aid will not be used to further a particular political or religious standpoint.*
- *We shall endeavor not to act as instruments of government foreign policy.*
- *We shall respect culture and custom.*
- *We shall attempt to build disaster response based on local capacities.*
- *Ways shall be found to involve program beneficiaries in the relief aid.*
- *Relief aid must strive to reduce vulnerabilities to disaster as well as meeting needs.*
- *We hold ourselves accountable to both those we seek to assist and those from whom we accept.*
- *In our information, publicity and advertising activities, we shall recognize disaster victims as dignified beings, not as hopeless objects.”*

SPHERE prescribes standards of behavior for humanitarian organizations during emergencies. It prioritizes water supply and sanitation, food and nutrition, shelter and safety, and health services as part of emergency packages. During emergency response, assessment, human resources and training, and coordination in program management are important. It also seeks to involve all the organization's staff including those at the national level, the transfer of knowledge and skills and adequacy in human resources and training. Finally, effective activities require clear leadership, creation of a coordinating body, mechanisms to ensure that priorities are shared by all relief actors, and the prevention of project duplication (The Sphere Project, 2004).

HAP, on the other hand, calls for accountability of every action of humanitarian organizations to ensure quality of work. HAP defines accountability as the means by which power is used responsibly in the context of the following principles: humanity or upholding the right of all persons to receive and give assistance, impartiality, informed consent, duty of care, witness which requires reporting on policies or practices, transparency, independence, neutrality, and complementarity (HAP International, 2007).

These agreements bind Oxfam and its partners such as *Sikhay* to comply with the humanitarian principles. Mechanisms were set up to ensure that these were properly practiced and monitored in all phases of relief work.

## **C. The Process in Disaster Relief Operations**

### **1. Pre-Distribution and Preparatory Phase**

#### ***Project orientation and training***

An orientation was conducted by Oxfam for the project team and volunteers regarding the perspectives, principles, procedures and guidelines in relief humanitarian work. The orientation provided information about Oxfam programs for the flood-affected communities and the relief operations project. Oxfam was responsible in providing, packaging, transporting and monitoring the relief goods. A training was also done about humanitarian principles and code of ethics in doing relief work. Towards the end of the project, the third training focused on financial management for *Sikhay* bookkeeper, finance officer and team leader. The latter was meant to enhance the capacity of *Sikhay* in managing humanitarian work.

#### ***LGU coordination and community assessment***

Prior to relief operations, Oxfam and the project team made courtesy calls to the municipal mayors. Coordination was done with the Municipal Social Welfare

and Development Office in making post-disaster assessment and mapping the communities and affected families by the flood. *Sikhay* gathered data on the affected families and evacuation centers (ECs) from MSWD officers and cross checked them with the information provided at the barangay, community, and evacuation centers.

### ***Selection of evacuation centers and communities***

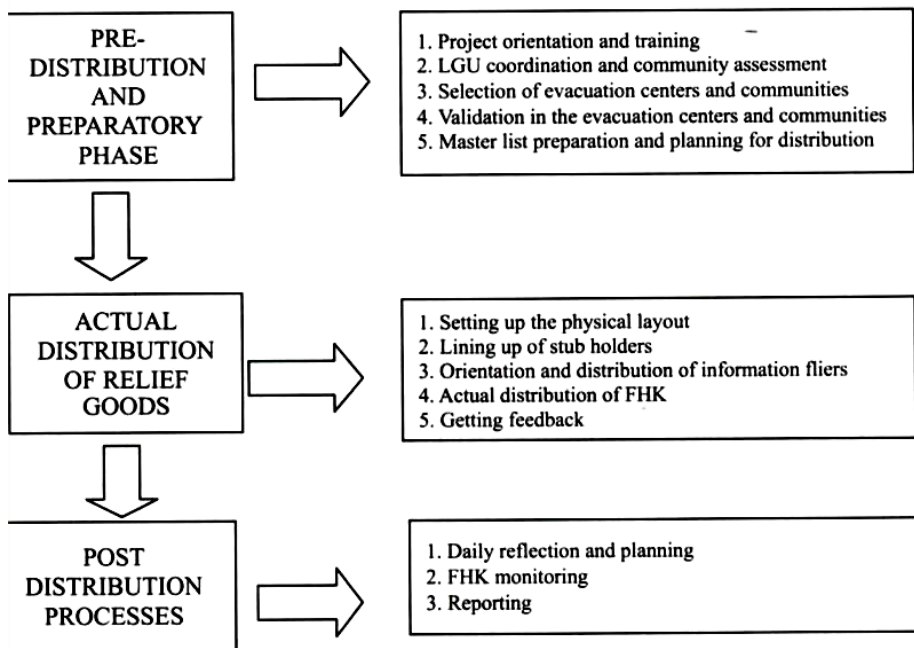
Based on Oxfam's guidelines, *Sikhay* initially selected evacuation centers based on its size, condition, and accessibility. The team prioritized ECs with at least 100 families, for better efficiency. ECs with less than 100 families but located close to each other were consolidated as a cluster and were also included in the list of beneficiaries. *Sikhay* also gave special preference to ECs with the worst living condition in terms of flooding situation, air circulation, toilet facilities and access to clean water. In the end, 63 ECs in 16 barangays were covered, including those that were accessible only by boat. However, the island barangays in Binangonan were not covered due to logistical problems, physical access, costs, and time constraints in transporting the goods.

The initial plan to distribute the FHKs only to families in the evacuation centers was later modified to include those residing in the communities. Many families did not leave their homes despite the flood while others went back to their houses after the flood receded. Many families did not stay in the ECs because of the conditions in there. These families did not receive any help because relief goods were primarily given to families staying in the ECs. There were also reports that some communities were not favored by the LGU officials due to political reasons, hence they did not get any relief goods.

Oxfam selected the communities based on their assessment and official reports of the LGUs. Oxfam likewise received requests for assistance from the residents and local leaders. *Sikhay* validated the data through ocular inspection and interviews with the residents. Selected areas included those that were still flooded and were previously submerged as shown by the condition of the houses and thickness of mud in the vicinity. Areas with high cases of leptospirosis were also prioritized.

Figure 1 summarizes the major activities undertaken for the FHK distribution process.

Figure 1: FHK Distribution Process



#### ***Validation in the evacuation centers and communities***

The validation process involved identifying the families who would be receiving the FHK. Information about the family such as the name of the family head, the spouse, the number of children, male and female, were gathered and included in a master list. The families in turn were given coupons or stubs which they had to show to get a FHK during the distribution which was usually done two or three days after the validation.

During EC validation, *Sikhay* conducted actual spot check by identifying the family occupants of each space. In cases where two or more households occupy



a single space, confirmation was done with the EC leader on the veracity of the claims made by evacuees. There were also instances when the EC leader had a master list of families. In this case, the family representative provided the information. They were asked to line up in a convenient and shaded area to register their families.

For the community validation, *Sikhay* did house-to-house visit and interviewed the family representatives. When the local leaders had a master list of those affected by the flood, the people were convened and their names were called for interview by the *Sikhay* validation team.

### ***Master list preparation and planning for distribution***

The handwritten master lists of beneficiaries were encoded and assigned stub numbers. The names were sorted alphabetically to facilitate the FHK distribution. Copies were given to Oxfam for them to ascertain the number of FHK to be prepared and for the emergency food security and livelihood (EFSL) team to determine how much money would be distributed.

*Sikhay* conducted team meetings for site planning and team roles delineation. Sub-teams were formed for the physical set-up, FHK orientation, receiving and interviewing of beneficiaries, FHK handling, crowd management, and preparation of supplies and materials such as attendance sheets, ropes, masking tapes, tarpaulin, to mention a few.

## **2. Actual Distribution of Relief Goods**

### ***Setting-up the physical lay-out***

During the validation stage, *Sikhay* team and local leaders planned the physical set-up for distribution. There must be enough space to accommodate the target recipients, possibly in shaded area and where the personnel and relief goods

were secured. A map was drawn that identified the crowd waiting area, entry and exit route, locations of tables for receiving the beneficiaries, the FHK claiming area, locations, positions and movement of trucks with the goods. Tarpaulin posters were placed for identification of the organizations involved in the relief distribution. Ropes were used as demarcation lines to manage the crowd. Team members and volunteers were employed at strategic points to facilitate a smooth and orderly distribution.

### ***Lining up of stub holders***

The people with claim stubs were asked to line up in the column with letters corresponding to their surnames. The alphabetical arrangement corresponded to the master list. The policy of “No Coupon, No FHK” was adopted and announced to the crowd to prevent onlookers from joining the line. The elderly, those with disabilities, pregnant women and those carrying infants were asked to go to the front.

### ***Orientation and distribution of information fliers***

Once the lines of people were settled and were ready for distribution, an orientation was given about the FHK distribution. The orientation was delivered either by Oxfam or *Sikhay* staff. Messages were made through the public address system and flyers were distributed to each beneficiary.

The orientation consisted of the following : greetings; a brief background on Oxfam and *Sikhay*; the contents of FHK; hygiene reminders e.g., proper hand washing, handling of drinking water and proper garbage disposal; instructions on the distribution process which included where to sign, where to get the FHK and exit points after FHK receipt, priority line for the elderly, pregnant and lactating women, and persons with disabilities; an assurance that all coupon holders will be provided with FHK; reminders to beneficiaries to check on their kits immediately upon receipt, and to provide immediate feedback to *Sikhay* should they have any concerns.

### ***Actual distribution of FHK***

Beneficiaries lined up in three stages before they reached the tables where their names and coupon or stub numbers were checked. The purpose of multi-staging was to prevent over crowding in front of the table. On their turn, the recipients gave their stubs and affixed their signature or thumb mark opposite their names in the master list. They were directed to the area where their FHK and the P1,000 FSL cash would be handed to them, after which they were directed to the exit. Oxfam ensured that the FHK given were properly packed and could be conveniently carried, using a re-usable cloth bag. At times, *Sikhay* and community volunteers escorted the elderly, the pregnant and those with disabilities to their waiting families outside the line. During the actual distribution, community leaders and barangay leaders helped in ensuring order, but they were not allowed to handle the FHK.

*Sikhay* made an inventory before leaving the distribution site to ascertain that the number of goods disposed matched the actual beneficiaries.

### ***Getting feedback***

Beneficiaries gave feedback verbally, or through text messages and drop boxes provided by *Sikhay*. Volunteers were also assigned in the queue to receive and answer queries during validation and distribution. Written messages were usually expressions of gratitude and appreciation to Oxfam and *Sikhay*, inquiries for the next schedule of distribution, and appeal for their inclusion as recipients. The feedback was conveyed to Oxfam during the end-of-the-day meeting.

Positive comments included the people's appreciation of the way *Sikhay* handled the validation process. House-to-house information gathering and coupon distribution by *Sikhay* received high commendation from the recipients, especially those in worst-affected communities that were never reached by assistance. Recipients were happy that *Sikhay* took charge of the

data gathering and stub distribution instead of the government or barangay officials because of fear of favoritism. They also said that the laminated and colored coupons with signature was better because it was difficult to photocopy and imitate them.

Comments were also received regarding the system of FHK-distribution. They said that it was fast, efficient and systematic and far better than the previous relief goods distribution done by some NGOs in Rizal. The laminated and colored signed stubs gave them assurance that everyone would get their share, unlike in the past relief distribution where they lined up for hours only to be told that there were no more relief goods. The use of ropes helped the process of directing and mobilizing the people. They also appreciated the effort to prioritize the elderly, the pregnant and those with disability.

There were negative reactions as well. Some people envied those in the ECs saying, "those people at the EC always received relief goods from government and NGOs." There were people who insisted that they should be recipients since they were also victims of flooding. Their complaints were all valid but the team had to explain that there were certain criteria. Only those whose names were in the master list were qualified to get the kit. All those identified as staying at the EC or living in the community qualified. However, during the evaluation, some were probably not around, hence they were not included in the master list. In cases like this, on the spot validation was done, with the EC leaders or barangay officials attesting the veracity of the information. They were given stubs that enabled them to claim their FHK, on the same day or another distribution day, depending on the number of beneficiaries validated.

During distribution, there were questions whether the excess FHKs can be given to those who did not have stubs. The immediate response was that, only people with validated stubs could receive the FHK and all unclaimed FHKs would be sent back to Oxfam warehouse for accounting. Furthermore, giving a favor to one person could be a dangerous precedent that could result to conflicts.

### **3. Post Distribution Processes**

#### ***Daily reflection and planning***

After every distribution, Oxfam and *Sikhay* met to keep track of activities, outcomes, succeeding schedules and targeted ECs and communities. This process was very useful because this enabled the team to have a common understanding of what happened. Most of the post distribution meetings were done with the Oxfam team. Dinner was provided to all the team members and volunteers.

#### ***FHK monitoring***

*Sikhay* conducted monitoring meetings with the family-beneficiaries in all the municipalities covered by Oxfam. Eight ECs and six communities were covered in the monitoring, with 645 participants, 436 (67.6%) of whom were women and 209 (32.4%) were men. The monitoring activities were done to get feedback from the people about the FHK and FSL distribution, especially on how they used the goods and cash.

#### ***Research reporting***

Since the project also had a research component, the team ensured that a documentation of the relief operation was done. The members had a workshop where they laid down the processes, challenges, lessons and recommendations for future relief operations. They also contributed to the narrative report submitted by *Sikhay* to Oxfam. A paper was also presented in a CSWCD forum.

### **D. Issues and Challenges**

#### ***Inadequate sources of relevant and updated data***

LGUs play a crucial role in rapid data collection and assessment that would serve as basis for immediate interventions by humanitarian organizations.



However, not all LGUs could give such data, being confronted by the enormity of disaster-response related tasks and the absence of an institutionalized information system that could readily generate necessary data. Such a situation required the team to do the assessment themselves that proved to be helpful as it ensured completeness and reliability of data and gave *Sikhay* the realities of life of the urban poor.

### ***Resource limitation and unpreparedness to disasters and relief work***

Poverty worsened the miserable conditions of families affected by disasters. Some ECs were located in unsuitable places such as flooded areas in Angono and Taytay, under the bridge in San Mateo, or close to the shore or river in Taytay. Others were overcrowded with three or more families occupying a very small space, did not have toilet and water facilities, and were poorly lit and ventilated. These conditions made the volunteers realized the health consequences and the importance of addressing people's vulnerabilities. ECs must be a suitable place but the LGUs could not provide such amenities to the people. The use of the schools as ECs also greatly affected the school children. Their prolonged stay in the EC led to illnesses and school delinquency.

### ***Difficulties to effective and efficient distribution***

There were communities that did not have sufficient space for relief goods distribution. While *Sikhay* and the local leaders had a contingency plan in case of rain, distribution was still delayed during a heavy downpour. This was aggravated by flooding in the ECs at the time of distribution. There were also conflicts of schedule of community activities, e.g., medical mission or demolition were done simultaneously with relief goods distribution.

### ***Coordination with Oxfam-EFSL Team***

In the entire project, the coordination with Oxfam Public Health Team (PHT) was smooth and marked by cordiality and efficiency. However, *Sikhay*

encountered problems in coordinating with the EFSL Team, who provided P1,000.00 per family. Apparently, *Sikhay* and the EFSL teams had different expectations with respect to the management of the actual distribution. *Sikhay* thought of itself as the lead coordinator of the distribution process in the EC or community, even if it involved both FHK and EFSL. In the end, it was made clear that the PHT and EFSL Teams were separate entities, thus activities were later done separately.

### ***Negative attitudes among some people***

Cases of cheating, opportunism, and indifference of people were observed during relief work. There were cases of double-claiming of relief goods by having two stubs in the name of two members of the same family. For example, husband and wife gave incorrect information during the validation, one giving the middle name and the other, the surname. The double registrations during the validation were discovered in the alphabetized master list that showed the members of the family. There were those who claimed goods for declared relatives without permission, causing the real stub owner to run after the claimant. There were also instances of barangay leaders and volunteers who directly asked for goods despite not being a victim of disaster. There were incidences of people fabricating stories and staying in ECs despite having sturdy homes in the vicinity just to be included in the list of recipients. There were also instances of wealthy residents who insisted that they be given relief goods just like their poor neighbors, but they were informed that they were not included in the validation because the prioritized beneficiaries were the poor families affected by the flood.

### ***Fired up emotions of affected residents***

Overcrowding and the hot climate could stir emotions of people who, in their desire to immediately get relief goods, resorted to short cuts, impositions and unwanted comments such as badmouthing. Patience and greater understanding in dealing with people in distress must also be a virtue among humanitarian volunteers.

The magnitude of damages caused by Typhoon Ondoy posed a great challenge not only to Oxfam, other humanitarian organizations and *Sikhay*, but most especially to the Local Government Units (LGUs) which were directly responsible of their affected constituents. The Municipal Social Welfare and Development Offices (MSWDO) often times were confronted by families from communities not reached by Oxfam's FHK and Emergency Family Security Kit (EFSK).

## **E. Good Practices in Disaster Relief Operations**

### ***Establishment of a system for disaster relief operations***

There was a system for relief goods distribution from the needs assessment, preparations, actual distribution and post distribution activities. The composition and roles of the relief team and volunteers were clarified during orientation and meetings. System of communication, decision making and conflict management were also put up to facilitate the conduct of the relief operations. The relief operations management team met and planned regularly to promote team spirit, coordination and efficiency. They worked using a well-planned yet flexible weekly schedule. In some days, the team split into two groups to maximize time and accomplish the overlapping concerns of coordination, validation and distribution. Post-activity meetings were conducted daily to review the approaches used, share experiences, and plan the team's succeeding activities.

The meetings enabled the relief operations provider to keep track of goods distributed and available for distribution. Teamwork and discipline were also fostered by the day-ender reflections. Responsible and competent leadership promoted teamwork and intellectual growth of the volunteers. Daily pointers from the team leader through pre-activity orientations and day-ender de-briefing and relaxation were regarded by team members as both reinvigorating and stimulating.

Feedback from the community and Oxfam itself said that the relief operation conducted by *Sikhay* was smooth, efficient and effective, which resulted to exceeding the number of target families. There were times when 1,300 families per day were given FHKs compared to the average 700 in other areas.

### ***Local participation in relief operations and evacuation center management***

The updated data base provided by the LGU helped to speed up the assessment and pre-distribution processes. It also promoted efficient utilization of resources. In communities where there were people's organizations, the leaders were involved in data gathering and validation, setting up the venue for distribution and acted as security person during the distribution. Similarly, at the evacuation center, the evacuees were organized by row and the leaders were involved in similar tasks. They also served as key informants when there was a need to verify data.

In relation to this, there were different ways by which the EC were managed by the local people. There were ECs directly managed and maintained by the municipal LGUs. ECs that used the barangay halls were managed by the Barangay. Most of the ECs put up in covered court, schools and private-owned facilities were managed by the evacuees themselves, headed by informal leaders.

### ***Assessment and validation that promote impartiality and security***

All the families in the evacuation centers were qualified to become beneficiaries. Gender-sensitive assessment and validation method were adopted where either of the spouse can be the beneficiaries. Sex disaggregated data were obtained. Single parents living as separate families were considered. On-the-spot and house-to-house validation to ensure wider coverage of worst-affected families were done. To prevent duplication of family recipients and "gate crashing" by non-bona fide residents, the relief operation systems used laminated stubs and master listing that enabled the cross checking of family entries. Direct assessment in the EC and the community provided the relief providers with opportunity to better understand the conditions of the affected families.

The stubs used were difficult to tamper and reproduce. They were laminated, with control number to identify the holders, and signed with colored pen. The recipients themselves appreciated the system because it prevented others from making fake stubs. For the relief providers, it made the distribution easier

because the recipients could be easily identified with the control number and matched with the master list.

***Ensuring safety, people's welfare and gender sensitivity during relief operation***

Physical and spatial planning for actual distribution promoted security and an orderly and systematic relief goods operations. Site planning included setting up the physical lay out for crowd management, allocating spaces for relief providers' work area, routes of people getting the goods, positioning and mobility of vehicles and trucks carrying the relief goods, positioning of team members and volunteers for security, crowd management and providing information. Spatial arrangement and physical set-up were important also in promoting discipline and transparency. The set-up allowed visibility, systematic flow and prevented mob behavior during distribution.

The welfare of each man and woman was a huge consideration in the relief distribution. The elderly, pregnant, and people with disabilities were prioritized. The venue for relief goods distribution was in a covered or shaded area. The distribution was fast, smooth and orderly to avoid dehumanizing consequences in the process. In some ECs, the people were asked to queue only when it was their turn to get their FHK to avoid waiting in long lines. The people were requested to keep a safe distance from the next person to avoid unnecessary body contacts. The distribution started on the appointed time and was completed during the day to provide ample opportunity for people to earn their living and do other activities.

Riots or mob behaviors are possibilities that any humanitarian organization might face. A reliable distribution system with proper coordination with local authorities may prevent violence. While this was not encountered, there were contingency plans as a preparation for such eventuality. The *Sikhay* team was sensitive to people who were agitated. The team members integrated with the people and were courteous, relaxed and friendly. The trucks containing the relief goods positioned in a distance away from the crowd. Similarly, the bulk of the crowd waiting and



watching the relief operation were staged far from the registration team and distribution area.

### ***Accountability in distribution and disposal of all the relief***

In relief operations, accountability entails responsible handling and delivery of relief goods, proper packaging, responsible handling and handing to beneficiaries, and proper timing. To uphold quality and accountability in all its operations, Oxfam conducted staff training and development activities to its partners. These included orientation, humanitarian guidelines and procedures, and management of feedback and complaints. The staff and volunteers were asked to sign the code of ethics for humanitarian work. The trainings enabled the team members to practice and appreciate better the significance of the work.

The relief operation system allowed all stub holders to get relief goods. This was made possible through Oxfam's adequate provisions of supplies and close monitoring of the beneficiaries that were validated. The distribution operation ended with counting the actual number of households who received the relief, tallying against the target recipients, and balancing with the number of goods left. The feedbacking system also promoted responsible delivery of services to the people. Part of ensuring accountability was a day-ender meeting after each operation to keep track of accomplishments, data, issues and concerns, and how they were addressed.

### ***Balanced staff work and volunteerism***

The relief distribution project is a commissioned work by Oxfam to *Sikhay*. All the costs of the operations were provided by Oxfam such as the supplies, transportation and food of the staff and volunteers. While the faculty project leader worked as a full time volunteer, there were four full time staff who were employed for the project. The rest were volunteers who irregularly joined the relief distribution. The presence of the regular staff ensured continuity and familiarity with the relief operations.

## **Conclusions**

The relief operations showed some realities in times of disaster. The poor people were the ones who suffered most, not in absolute term, but in proportion to what they have. They lost almost everything: their homes, their assets and the environment that would enable them to be economically productive. The communities were flooded because of violation of human and natural laws, such as settlements encroaching the lake, lake shorelines converted into subdivisions and riverbanks occupied by informal settlers.

The evacuation centers were unfit, considering the space available and the poor health and sanitation facilities. Many families got out of their homes that were flooded, only to experience floods again at the evacuation centers. The LGUs were apparently not capable to respond adequately and effectively with the magnitude of disaster that faced them. Amidst these situations, emergency responses were meant to alleviate temporary sufferings.

The U.P. CSWCD is not a disaster relief distribution agency, but in times of disasters, the commitment to serve the marginalized people surface spontaneously. U.P. CSWCD does not have budget allocated for relief operations. However, through *Sikhay* and in partnership with humanitarian organizations such as Oxfam, resources and its constituents can be mobilized for relief operations. As an academic community, the U.P.CSWCD and *Sikhay* can integrate research and documentation in relief operations, to draw lessons that can be used for teaching and basis for improving the practices.

It is necessary that relief operation be guided by humanitarian framework and operational guidelines. Organizational efficiency ensures better quality of service and reduces potential risks related to relief operations. Emergency response does not only entail distribution of relief goods. It requires a heart and a commitment to serve. It encompasses an entire range of interrelated efforts from assessment, pre-distribution, actual distribution and post distribution activities that promotes humanitarian standards and principles. Humanitarian principles must be upheld, together with the values of participation, transparency, accountability, impartiality, human rights and dignity. In this way, the people and the communities can be helped to cope and bounce back as resilient individuals and communities.

## References

- ABS-CBN. ABS-CBN news.com. Posted at 09/28/2009 12:31 AM | Updated as of 09/28/2009 12:31 AM. Retrieved from <http://www.abs-cbnnews.com/nation/regions/09/27/09/82-fatalities-rizal-due-ondoy- governor> (30 August 2011)
- CSWCD (College of Social Work and Community Development) 2007. *Results of the strategic planning conference*. QC: CSWCD.
- HAP International. (2007a). *Standard in humanitarian accountability and quality management*. Retrieved from [http://www.hapinternational.org/pool/files/hap-2007-standard\(1\).pdf](http://www.hapinternational.org/pool/files/hap-2007-standard(1).pdf)
- HAP International.(2007b). *The guide to the HAP standard humanitarian accountability and quality management*. London: Oxfam GB.
- International Federation of Red Cross. (n.d.). *The code of conduct for the international Red Cross movement and NGOs in disaster relief*. Philippines Typhoon Ketsana Volunteers Training Handouts.
- Kotze, A. & Holloway, A. (1996). *Reducing risk. Participatory learning activities for disaster mitigation in Southern Africa*. International Federation of Red Cross and Red Crescent Societies and Department of Adult and Community Education, University of Natal. UK: Oxfam.
- Sikhay Kilos.(2010). *Emergency public health support to select sites in Rizal province heavily affected by tropical storm Ondoy*. Report submitted to Oxfam by Sikhay Kilos Development Association, CSWCD, University of the Philippines, Diliman, Quezon City.
- Sikhay Kilos. (2009). *Sikhay brochure*. Unpublished.
- Sphere Project.(2004). *Humanitarian charter and the minimum standards in disaster response*. Geneva: The Sphere Project.

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# Community Development Approach in the Recovery of Selected Communities Affected by Typhoon Ondoy Flood<sup>1</sup>

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**Emmanuel M. Luna**

*In September 2009, Metro Manila and the surrounding communities experienced the worst flood due to Typhoons Ondoy and Pepeng. The depth of the flood reached 30 feet in some communities, submerging a number of urban poor areas. Along the Marikina River, residents were either relocated or allowed to stay in their communities. But, those who were relocated to safer areas were confronted with new challenges due to problems in proximity and poor access to their sources of livelihood and the schools. Moreover, services for water, power and other basic provisions were inadequate. On the other hand, the people who stayed in the same vulnerable areas were able to immediately start rebuilding their houses and respective communities. Using the community development framework, this paper looks at the recovery and rebuilding of communities affected by the flood in two barangays: one that was relocated to another site; and, another that stayed in the vulnerable community. The outcome shows that the people who remained in the same community had a higher level of recovery compared to those in the relocation area. In this community, the residents had greater experiences in community education, organizing, resources and disaster risk management processes.*

**Key Words:** Community-based disaster risk management, community development, flood recovery

## **A. Community Development Framework for Disaster Risk Management**

The socio-economic, political and cultural conditions of society contribute to the vulnerability of the people. More exposed to hazards are the poor who have very limited capacities to improve their situation. They do not have the needed



material resources to cope with and recover when affected by disasters and other calamities. At the same time, prevailing socio-cultural values and beliefs can perpetuate powerlessness among the people through lack of risk awareness, dependence on fate, and subservience attitude. The poor can also become easy prey of political leaders who take advantage of the people's weaknesses for their vested interests.

Over the years, the field of Community Development (CD) developed in response to the needs of the emerging and changing times. From a functionalist perspective when it was introduced in the 1950's, it adopted conflict perspective aimed to effect social change, particularly during the martial law and dictatorship period in the Philippines. Today, CD deals with many aspects of human lives and communities such as growth and sustenance, conflict resolution, rehabilitation and transformation of marginalized communities through people's participation and collective action. This means recognizing and building the people's innate potentials and capabilities, enabling them to define their direction, and having them participate in the process of change through collective action. Community Development facilitates the process of transforming the marginalized communities so that they may collectively act on their situations and on the external forces that undermine and perpetuate their oppressive conditions (Luna, 2009a; Luna, 2009b; Luna, 2006; Luna, 1999).

**Community Education for Capacity Building and Knowledge Generation.-** CD is concerned with the enhancement of the people's potentials and capabilities. "Education is a potent force for social transformation in terms of upliftment of people's welfare and working towards forming alternative structures and power relations" (Tungpalan, 1991, p. 2). People have inherent capacities and potentials that can be developed and mobilized for individual and community transformation. This entails the generation, re-orientation and transformation of knowledge and belief systems in order for the people to cultivate liberating and empowering community values. Such values include having the sense for equity, justice, cooperation and collective concern, nationalism, gender sensitivity, as well as environmental consciousness.

Local knowledge are community resources that have to be recognized and mobilized to counter the domesticating, conforming and dependency-creating values and attitude that have perpetuated the dominated society. Learning organizations have developed as well to facilitate the emergence of local knowledge. The people's knowledge and consciousness have to be translated into operational and effective actions through skills for community work such as community organizing, education and mobilization, human relations and communication, conflict confrontation, planning, management of community resources and the like.

Community Organizing and Governance (COG) – Community organizing is the core method in community development. As the people organized themselves, the people's organization becomes an instrument for collective community governance. Community organizing can be area-based, sectoral or issue-based. There are also supra-organizations in the forms of networks, alliances and coalitions. These organizations are the people's instruments in expressing their will and effecting changes in their communities. They can be instrumental in influencing the local and state roles and functions for community development. It can make the marginalized groups with silent voices such as the women, children, people with disabilities, elderly and indigenous people gain power for the promotion of their rights. They are tools of the people to engage and negotiate with the power and duty bearers such as the local government units, local and international NGOs in asserting their rights and ensuring people-based community governance.

Community Resource and Disaster Risk Management (CRDRM)- Community resources such as land, urban services, credits and capital, forests, coastal and other natural resources of the community have been used as an agenda or as entry point for organizing the poor; as venue for strengthening and consolidating organizations; and, as issues for arousing interest and mobilizing the people for political organizing. Community resource management is a tool for promoting inter-generational equity by ensuring that the future generation will still enjoy the environment. Similarly, disaster risk reduction is viewed "within the broad context of sustainable development" (ISDR, 2007, p. 154).

Community resource management includes the conservation, protection and rehabilitation of the environment to ensure a wholesome, livable, sustainable and ecologically - balanced habitat. Disaster risk management involves the assessment of risk and vulnerabilities, the development of peoples' capacity, and mobilization for preventing, mitigating, preparing, responding and recovering from disasters. Both CRM and DRM necessitate the involvement of the people in the advocacy for policies and programs for the ultimate benefits and welfare of the people and the community. Disasters occur when the resource thresholds and the environmental limits are reached or violated. Losses take place when economic risks are missed in the planning of social services and livelihood initiatives.

### ***Community-Based Disaster Risk Management***

The paradigm shift from the reactive and emergency-focused disaster response to a more holistic or comprehensive disaster risk management framework gave impetus to community-based disaster risk management (CBDRM). The new paradigm integrates the management and reduction of risks, protection of development gains, sustainable human development and mainstreaming disaster reduction into development (Delica, 2003).

Community-Based Disaster Risk Management is concerned with participatory approaches in reducing possible losses in the lives, properties, community resources and environment due to natural and human induced hazards. It hopes to accomplish long term transformational changes and short- term remedial improvements in the well being of the people. It views disasters as a question of people's vulnerability and empowers people to address the roots of vulnerabilities by transforming structures that generate inequity and underdevelopment (Heijmans & Victoria 2001; Luna, 2009a; Luna, 2009b; Luna, 2006).

While CBDRM puts the people as central to the process, the communities maintain the right to receive external assistance in times of emergency and during post disaster recovery. The less vulnerable assisting the vulnerable one is a principle in disaster risk management. But despite looking at the community as the prime

actor, CBDRM does not take away the responsibility and accountability of the state to protect its citizens.

## **B. Research Problem and Methodology**

The flood caused by Ondoy and Pepeng is considered as the worst that hit Metro Manila and the surrounding provinces. Almost one million families and five million individuals from 27 provinces and 36 cities were affected. More than 1,000 people died from this disaster (ADB,AusAid,EC,UN,WB,GFDRR, 2009). Middle class subdivisions along the Marikina River and Laguna de Bay were under water. For weeks, some condominium units in Quezon City had no water and electricity because the underground floor that housed their water pumps and electric motors were destroyed by the flood.

Pictures of cars on top of each other became symbols of the Ondoy flood, along with the scenes of people carrying their belongings on their heads while walking on flooded streets. Scenes from Ondoy also featured destroyed shanties and submerged mansions, overcrowded evacuation centers and long queues of people waiting for relief goods. At such point in time, the flood was a great equalizer.

But, the days after the flood was a different story. Those who had resources were able to recover easily, taking temporary refuge in hotels and reconstructing their homes with new designs that can mitigate the impact of future flooding. On the other hand, the poor families had very little choices. Those living in the vulnerable areas returned to the same place, cleaned it up and braced some preparedness measures, praying that such disastrous event would not happen again. Fortunately or unfortunately, others who could not come back to their original areas declared as dangerous were relocated in resettlement areas.

Within the context of the community development framework, it is imperative to see how the poor families were able to recover from the adverse impact of the flood. This study sought to answer these questions: How does community development processes facilitate the recovery of families affected by the flood? What is the recovery status of the families who remained in vulnerable

areas and those who were relocated to resettlement areas? What roles have been played by the external support institutions? What are the challenges that have to be addressed and what strategies can be put forward to hasten the recovery of the people and communities?

Case studies were conducted in two communities affected by Typhoon Ondoy, namely: Barangay Sta. Ana in San Mateo; and, Barangay San Jose in Montalban. Both are located in the province of Rizal and were flooded by Typhoon Ondoy with a depth of 30 feet. Families in Barangay Sta. Ana returned to their respective communities after the flood. On the other hand, families along the river in Barangay San Jose were relocated to another area in Montalban, Barangay San Isidro,

Since the researcher was directly involved in the relief assistance in both communities and in the capability building projects implemented in Barangay Sta. Ana, the data gathering for this research was conducted through documentation of the activities with the assistance of CD students doing fieldwork in the respective areas. In addition, key informant interviews were done with the local leaders and officers of the resettlement site as well as focus group discussions (FGD) with the community leaders and residents. To determine the recovery status of the families in the two communities, a survey was also conducted.

### **C. The Communities in Action Towards Disaster Recovery**

#### **Case 1: Barangay Sta. Ana, San Mateo**

Barangay Sta Ana lies along the Marikina River. Most of the families affected by the flooding during Typhoon Ondoy were informal settlers. They stayed at the peripheries of the subdivisions. They received assistance from the government and non-government organizations in the form of relief goods, medical services and construction materials. In October 2009, a collaborative effort of the CSWCD Sikhay Kilos Development Association and Oxfam UK assisted the community by providing hygiene kits and livelihood assistance to affected families.



The emergency food security and livelihood (EFSL) program undertaken by Oxfam provided funds to support the livelihood projects of the families organized into people's organizations. The first phase involved the distribution of P 1,000 per family given together with the family hygiene kits. The second phase involved the distribution of P5,000 each to selected needy families to enable them to start or recover their businesses and help augment their income. The third phase was the provision of capital to groups or organizations for livelihood projects. Seven organizations from the barangay were given funds for their businesses. The members of the seven organizations were entrusted with the responsibility of running their small businesses (Galema & Caído, 2010).

A capability building project undertaken by the Sikhay Kilos was also implemented through the support of Oxfam. The capability building project in Sta. Ana oriented the Barangay Council and the members of the BDCC on DRR. The project staff helped in identifying, organizing and mobilizing community leaders and volunteers who could be members of committees for DRR. They conducted information and orientation on DRR among the family representatives through focus group discussions, community meetings, informal discussions, house to house visits and campaign materials (Luna, Firmase & Eugenio, 2010).

Community Development students from CSWCD, were also fielded in Barangay Sta. Ana. The students integrated with the residents, conducted community assessment and socio-economic profiling, training needs assessment, implemented capacity building activities, and assisted the community leaders in organizational development and in implementing the community projects.

#### **Case Two: Barangay San Jose, Rodriguez**

Barangay San Jose is adjacent to the Marikina River. Many of its residents live on the river bank. Flooding from Typhoon Ondoy struck the community in the morning of September 26, 2009. But on the evening of September 25, some of the areas in the adjacent village were already flooded below the knee level.

Nevertheless, this was considered normal since they were used to such flooding. A woman vendor narrated that by 5:00 in the morning of September 26, the flood in San Jose already reached chin-level. By 8:00 a.m, they had to evacuate to their store in the public market as the flood rose swiftly reaching roof-level height in just a few minutes. She claimed that her family lost all belongings. They stayed for one week in the public market, and later transferred to the evacuation center in a sports oval.

Another woman who worked outside of the village said that she was already at work when the flood started to rise right in her workplace. When she tried to go home, the flood in the poblacion or town proper was already waist-high. Along with other commuters, they were forced to seek higher ground in another village. However, it also got flooded and they were forced to spend the whole evening standing and submerged in chest-high water. The next day, she saw that their house in San Jose was totally washed out. She looked for her family and found them at the evacuation center in an elementary school. They were later given a tent as their temporary shelter.

A mother of five children recalled that as early as 2:00 a.m. on September 26, 2009, she noticed the rising depth of the flood due to the heavy rains. They did not evacuate immediately because she was concerned of the hogs she raised for a living. When she observed that the flood was getting worse, she evacuated to the roof of house. The flood was rising to neck-high level. They, then, settled at the sports oval. She said that they did not go hungry because she was able to prepare food and water prior to evacuation. However, they had to endure sleeping cold, wet, and feeling itchy due to the flood waters. It took them the next day before they were able to take a bath and change into dry clothes.

A man related that when the flood started rising, he got concerned because there was an electric post that still had power. He swam to the barangay hall to ask for assistance but nobody was there. He then borrowed a rubber float which he used to evacuate his children and their belongings. He was not able to return the second time because the flood had reached the second level of the house.

Reflecting on the effects of Typhoon Ondoy and the flood, the participants in the FGDs said that they lost their homes and belongings. They also lost the assets they used for earning a living, such as their equipment in auto machine shop, utensils for cooking, sewing machine, and swine. Children had to stop schooling because they lost their school uniforms and school materials. Children got sick of bronchitis, among others.

One woman cried as she related that her husband committed suicide when they were already at the resettlement site. Prior to this, her family was experiencing serious financial problems because they had no money for the medical expenses of one of their children and another one bitten by a dog.

### **The Evacuation and Relocation Process**

When Typhoon Ondoy struck Barangay San Jose, all efforts of the Barangay Council were concentrated on rescue operations and evacuation. On the day after the typhoon on September 27, 2009, the Barangay LGU designated the San Jose Elementary School as the evacuation center for 331 families. All the rooms in the school had comfort rooms. When the classes resumed on October 13, 2011, the families were transferred to a covered court in the town plaza. Others were given tents and stayed in the sports ground. However, the sports oval had one comfort room only. The water was also rationed in the evacuation center.

The evacuees who stayed at the San Jose Elementary School were the first batch to be relocated at the San Isidro Resettlement area on November 11, 2009. At the evacuation center, government workers from the Municipal Social Welfare Office made a list of qualified beneficiaries. Families whose homes were totally damaged by Ondoy were prioritized by the LGU to qualify for a housing unit. Site visit verification of the claimant or requesting family was done by the barangay LGU. The claimant was also required to submit photographs of the damaged house as part of the application documents. The barangay LGU then, forwarded the applications to the Housing and People's Development Center of

the municipal LGU. The municipal LGU endorsed the application to the provincial government, who had to finally endorse the applications to the National Housing Authority (NHA).

The families were informed one week in advance before they were transferred to the resettlement site, but they had no idea about the size and appearance of the housing units. Families were transported from Barangay San Jose to the resettlement site in a dump truck arranged by the barangay LGU.

### **The San Isidro Resettlement**

Barangay San Isidro is the site of resettlement projects of the government. The governor of Rizal and the housing and urban development agency of the government agreed to designate two sites in the San Isidro Resettlement. Southville 8 and 8A were designated as relocation areas for Typhoon Ondoy victims among residents coming from the municipalities of Taytay and Rodriguez. The first batch of families was brought to Southville on November 10, 2009, while the second batch was brought on December 29, 2009. Almost 400 families were resettled in San Isidro.

The NHA managed the entire resettlement area. The newly resettled residents occupied row houses whose individual unit was 20 square meter in size. There were piped water facilities and toilets inside the units. The families were given a one year moratorium to pay the amortization of their housing units, after which they had to pay about \$6 per month. The families were not allowed to sell their units. They were also prohibited from making any permanent development or construction in front of their housing units.

Engaged in community relations was the NHA for information dissemination. It is responsible in providing orientation to newly settled households on the rules and regulations of the resettlement site and payment obligations of unit owners. The NHA was involved in organizing the homeowner associations per block. There was a finance unit responsible for collecting payment obligations

of homeowners. The state management unit managed and monitored the documentation of homeowners. Likewise, a livelihood unit was tasked to provide training on livelihood. Responsible for ensuring compliance on building and construction requirements of contractors was a technical unit, which was also in charge of making repairs on the housing units.

Prior to the transfer of the residents from the evacuation center to the resettlement site, the evacuees formed an organization named San Jose Original Relocatees. The purpose of the organization was to enable the families to help each other on matters pertaining to their needs as relocatees. The main participation of the organization was to provide guides for the interviewers of Oxfam. However, there was an impression among some members that the organization was biased in the selection of relief beneficiaries.

There were also accounts that the collection for the payment of electricity was mismanaged by some leaders of the organization. Furthermore, the residents confided that the NHA officers were discouraging the formation of an association in the resettlement area, except for the organization that will be established by the NHA which was by residential blocks. Nevertheless, the residents still preferred to form their own organization to help those who were in need. They also believed that it would be more possible to solicit projects if they had an organization.

### ***Services provided***

As mentioned, the resettlement program provided a row housing unit for each family with a 20 square meter floor area. The families would be paying an amortization of P 300 per month or 2-4% of their monthly income for 25-30 years. According to an NHA officer, the selection of the beneficiaries was done mainly by the LGU and did not follow the procedure employed by NHA. The new residents were not given orientation regarding their responsibilities as new unit owners, particularly on their financial obligations.

The selection process employed by the LGU was seen to have political bias towards affected residents identified with the LGU. Some professional



squatters who were previously awarded housing units but sold their rights, managed to be included in the list of endorsed families by the provincial LGU. This problem was attributed to non-compliance with the usual selection process used by the NHA. There were even some residents who have illegally occupied certain housing units and were bullying legitimate unit owners.

Due to the urgency of evacuating the families, the facilities for electricity were not yet put up when the families started occupying their units.

#### **D. Integrated Analysis: Community Development as an Approach to Disaster Recovery**

This section provides an integrated analysis using the Community Development framework discussed in the beginning and the outcome of the recovery status survey conducted among the residents in Barangay Sta Ana and Barangay San Jose who were resettled in Barangay San Isidro, the resettlement site.

#### ***Community Education for Capacity Building and Knowledge Generation***

There is a very strong expression of endogenous attributes such as the *bayanihan* spirit, which is a form of mutual aid that is characterized by self-help, volunteerism, reciprocity and community cohesion. This became very pronounced in the two barangays at the height of the flooding. The magnitude of flooding in the two communities was the same, but nobody died in both communities. The people in both communities said that their unity and concern for each other was of great help and this became even stronger after the flood. They had local knowledge and practices that helped them survived the tragedy. However, these knowledge and skills were focused on disaster response and emergencies, rather than risk reduction. In Barangay Sta. Ana, the families were given training on hazards analysis, DRR concepts and strengthening the local organizations. On the other hand, those in the resettlement were not given these trainings. Hence, the families in the two communities still need capacity building for DRR and sustainable livelihood.

By doing CD research in the communities, the local practices and experiences in disaster response surfaced. Table 1 below shows the adaptive mechanisms of the community in times of emergencies and their own assessment about their recovery from disaster.

Table 1. Comparative Features of the Community Education Dimension

Features	Barangay Sta. Ana (Families stayed in the same vulnerable area)	Barangay San Jose/San Isidro (Resettled Families)
<b>Pre-existing</b>		
1. Bayanihan: self-help, volunteerism, collective work, reciprocity, community cohesion	Very pronounced before and during the disaster event; became stronger after the disaster	Very pronounced before and during the disaster event; became stronger after the disaster
2. Skills in emergency response, disaster preparedness, small scale entrepreneurship and governance of community affairs	Very pronounced even during and after the disaster event	Very pronounced during the disaster event but was displaced due to relocation.
3. Awareness of the conditions such as causes of disasters, their and potential and capabilities	Very pronounced	Very pronounced
<b>CD Inputs</b>		
1. Hazards assessment	Provided	No educational inputs were given except a brief orientation on the rules in the resettlement site.
2. Disaster risk reduction concepts and processes	Provided	
3. Organizational development	Provided	

### ***Community Organizing and Governance***

In terms of organizing, both communities have similar community organizing situation before the disaster. There were organizations that were endogenous in the community such as neighborhood, kinship and peer groups, formal barangay council, and formal community groups such as organizations among women, youth, and other local groups. In Barangay Sta. Ana, these community groups were revived or strengthened by the crises as the people had to respond to the emergency. The capital provision given led to the revival of some of the groups who planned and implemented the community projects.

On the other hand, the relocation of the families from Barangay San Jose to San Isidro displaced also the community organization, both formal and informal ones. While a new group composed of resettled families was formed, they were discouraged by the housing agency which asserted for the establishment of only one organization which they will establish. The residents' initiative for self-governance was dampened by the government agency's policy concerning neighborhood association. Furthermore, the displacement brought the resettled families to a new Barangay Council that was unfamiliar to them.

Table 2. Comparative Features of the Community Organizing Dimension

Features	Barangay Sta. Ana (Families stayed in the same vulnerable area)	Barangay San Jose/San Isidro (Resettled Families)
<b>Pre-existing</b>		
1. Endogenous and local governance such as neighborhood, kinship and peer group.	Very pronounced	Very pronounced before but was displaced when they were resettled in the new site
2. Formal barangay governance: Barangay Council and committees; disaster response team	Very pronounced	
3. Formal community groups and formal leaders	Very pronounced	
<b>CD Inputs</b>		
1. Re-orientation, training and revitalization of the formal community groups	Done	Not applicable; the Barangay Council remained in the original area
2. Formation of new interest groups	Livelihood and cluster-based groups were formed	<ul style="list-style-type: none"> <li>Locally initiated organization of new settler from Brgy. San Jose</li> <li>Housing agency mandated Homeowner Association</li> <li>Livelihood-based new interest groups</li> </ul>
3. Linkages building with other organization and resource base	With both government, NGOs and academe	Basically with the government

### ***Community Resource and Disaster Risk Management***

The families from the two communities were given P1,000 as food security and livelihood assistance. Some who were considered by the assisting NGO as very poor were later given P4,500 each for livelihood purposes. Some of the families were able to use it for livelihood while others used it for food and other household expenses. These included buying a sewing machine, using it as capital for a *balut* (a Filipino egg delicacy with embryo inside) business and *sari-sari* store, as well as buying medicines and food.

Those who were resettled found the livelihood opportunities in their former community better than in the resettlement site. One participant claimed that they used to earn P 2,500.00 per week by collecting junks (*nangangalakal*). Another participant said that she used to earn P 200.00 per day with her rolling store, but is now finding it hard to earn money at the resettlement site. One resident who used to earn P1,300 per week had to resign from her work in a shopping mall because of the far distance and long travel time.

On the contrary, the families who were not resettled were able to resume their jobs and other sources of livelihood. While they recognized that their place was vulnerable to flood, they claimed that they have developed a system of preparing and responding to the flood. They are now aware of when to evacuate and had learned ways of securing their belongings during such disasters.

**Table 3. Comparative Features of the Community Resource and Disaster Risks Management**

<b>Features</b>	<b>Barangay Sta. Ana (Families stayed in the same vulnerable area)</b>	<b>Barangay San Jose/San Isidro (Resettled Families)</b>
<b>Pre-existing</b>		
1. Community facilities and utilities	Existing	Existing —
2. Land tenure	Land owners and informal settlers	Informal settlers
3. Livelihood	Formal and informal	Formal and informal
4. Environment	Farmlands along the river; urban settlement	Farmlands along the river; urban settlement
5. Main risks	Flooding; non-ownership of the land by the informal settlers	Flooding; non-ownership of the land by the informal settlers
<b>CD Inputs</b>		
1. Relief goods	Done by both government and non-government groups	Done by both government and non-government groups
2. Cash capital for livelihood	Micro-credit, rice retail, water supply;	Micro-credit; rice retail
3. Housing	Materials provided	New housing units
4. Community initiated facilities: road improvement, street lights, water supply source	Road improvement, street lights, water supply source	Government provided facilities in the resettlement site; No electricity; water not potable
5. Risk Reduction	Hazard assessment, DRR training, linkages with DRR organizations	No orientation and training

***Recovery Status***

In disaster risk reduction and management, tools were developed to assess and monitor the state of DRM and the progress of implementation of the Hyogo Framework for Action (HFA). The baseline-assessment on the state of DRM in the Philippines was done using a five-point scale with a scoring of 1 as very low and 5 as very high (Cabrido, 2008). A composite index score was obtained after scores were given by evaluators. The 2009 Global Assessment Report on Disaster Risk Reduction also made use of 5-point scale scoring system to determine progress in the implementation of the Hyogo Framework for Action (GARDRR, 2009).



Based on the respondents' assessment which came from different sectors in the Philippines such as representatives of the NGOs, people's organizations and local government and agencies, the status of the HFA implementation in the Philippines was obtained. A five-point rating scale was also used, after which the average was taken in every priority item of the HFA. Thus, governance got 3.44; risk assessment, monitoring and warning, 3.41; knowledge and education, 3.40; underlying risk factors, 3.20 and disaster preparedness and response, 3.42 (Center for Disaster Preparedness, 2009).

In like manner, the recovery status of the families in the two communities was determined by coming up with a scoring system where the respondents assessed the recovery items or indicators with a four-point rating scale. The same tool was used in determining the recovery status of the families affected by the landslide in Barangay. Guinsaugon, St. Bernard, Southern Leyte (Luna, de-Asa Luna, Molina & Molina, 2011).

There were 74 FGD participants in Barangay Sta Ana and 62 FGD participants and residents in the resettlement site. The respondents were individually asked to determine their recovery status through a survey form, after an explanation of the items by the facilitator, using the following scale:

- NA - Not applicable
- 1 - Not yet recovered
- 2 - Little recovery
- 3 - Full recovery
- 4 - "Built back better"

A descriptive and comparative analysis of the recovery status in the two communities is presented in Table 4. The "Not applicable" (NA) responses can show the magnitude of damages in the two communities. The larger the percentages of "NA" responses, the lesser the number of families who encountered such losses. For total loss of the house (Item A.2), Barangay Sta. Ana scored 76% while Barangay San Jose scored only 3%. For the loss of income (Item B.6), 30% of the respondents from Barangay Sta found this not applicable to them while only 7% of those from the resettlement said so. The latter means that 93% of the respondents

from the barangays lost income when they were resettled. Apparently, the families in the resettlement encountered more losses (at least 10% difference) in most of the items such as family assets (Items B), community services (Item C), and relationship and governance (Items D).

The results of the assessment show that the people from Barangay Sta. Ana had a higher level of recovery status than those who were relocated in Barangay Isidro. This is shown in the qualitative descriptions from the previous section, as well as by the quantitative assessment where Barangay Sta Ana got a Recovery Status Index of 2.53 against 2.04 in the resettlement. The last two columns in Table 4 show the comparisons of the recovery status in each item. It is very noticeable that the community that remained in their area has higher recovery status compared to the one that was resettled.

## **E. Conclusions**

**Communities have endogenous system of responding, preparing and recovering from disasters.** The mere fact that nobody died despite the 30 feet flood shows the capacity of both communities. Rescue operations were done by the barangays and volunteers from the community. They helped each other and as many would say, the neighbors helped each other in many ways, during and right after the disaster. The residents from both communities recognized that the disaster made them more united and concerned of each other's needs.

**The limitation in disaster prevention and mitigation is mainly due to given natural vulnerabilities and "forced option" to be in vulnerable area.** The people had very little capacity to prevent or mitigate flooding because flooding is beyond their control. They can only respond and escape from flooding but they cannot stop it. They have not done anything to cause the flood. There was just too much rain and the shallow river was not their own-making. Their presence in the vulnerable community is a 'forced option' because the families have no other recourse but to live in areas even if these are dangerous. The Filipino metaphor for this is *kapit sa patalim* literally translated as *holding to a knife*. This means a choice of no option despite recognizable risks.

Table 4. Comparative Recovery Status in Barangay Sta. Ana and Barangay San Isidro

Recovery Items Assessed in the Two Communities	Distribution of the Respondents' Ratings of their Recovery Status Per Item in Percentage (%)										Average Rating of the Recovery Status <sup>1</sup>	
	Barangay Sta Ana:Un-resettled Community					Barangay San Jose: Resettled in Brgy San Isidro					Sta Ana	San Jose
	NA	1	2	3	4	NA	1	2	3	4		
A. Physical and Mental Health												
1. From death of relatives	97	-	3	-	-	87	8	3	2	-	2.00	1.50
2. Sickness	41	18	11	12	18	32	27	18	19	3	2.51	1.98
3. Physical injuries such as losses of legs, sight, etc	94	2	4	-	-	82	5	7	2	5	1.75	2.36
4. Emotional trauma	23	25	25	25	3	10	52	21	11	7	2.07	1.70
B. Family Assets												
1. Destruction of the house	23	19	26	23	8	10	44	23	6	18	2.68	1.98
2. Total loss of the house	76	6	7	7	6	3	43	30	8	16	2.50	1.98
3. Loss of household assets	14	25	26	24	11	5	45	40	3	7	2.24	1.69
4. Loss of assets for livelihood	34	15	27	15	8	14	45	32	7	2	2.25	1.58
5. Sources of livelihood	29	23	19	22	7	15	39	32	13	2	2.18	1.74
6. Income	30	31	26	11	1	7	47	34	10	3	1.74	1.69
C. Community Services												
1. Electrical services	27	15	11	32	15	16	69	9	5	-	2.64	1.24
2. Water source	31	14	8	25	22	12	43	32	10	3	2.86	1.70
3. Education of children	36	10	12	19	23	32	13	24	23	8	2.87	2.38
4. Roads, pathways, bridges	46	13	13	16	16	23	18	11	23	26	2.66	2.73
5. System of transportation	57	8	10	15	10	16	34	23	26	2	2.61	1.83
6. Natural environment	34	12	30	15	8	8	40	15	18	19	2.29	2.17
7. Recreational facilities	45	7	16	26	6	10	43	28	15	5	2.55	1.80
8. Market	73	3	7	8	10	15	24	24	26	11	2.90	2.28
D. Relationships and Governance												
1. Relationship with spouse	85	1	3	1	10	66	2	11	10	12	3.27	2.90
2. Relationships with neighbors	71	6	6	6	12	49	7	10	21	13	2.86	2.81
3. Community organizations	74	3	3	3	18	31	8	26	27	8	3.37	2.51
4. Barangay Governance	66	6	6	12	11	26	16	27	19	11	2.84	2.35
Recovery Status Index in the Two Communities											2.53	2.04

<sup>1</sup> Score =  $F(1) \times 1 + F(2) \times 2 + F(3) \times 3 + F(4) \times 4$  ;  $F(1)$  = frequency of "not yet recovered responses"  
 $F(1) + F(20) + F(3) + F(4)$  ;  $F(4)$  = frequency of "built back better" responses.

**Displacement of people due to natural disaster can be another disaster that is human induced.** While it is true that the families who are relocated in less vulnerable areas would be safe from the flood, there are other hazards and risks that would be faced if the necessary services and amenities are not available in the new community. This is exactly what happened in the resettlement area. The provision for electricity and water supply is not properly put in place, hence the people had to face new threats such as diseases and a lot of mental anguish.

**Minimal displacement and losses could mean faster recovery.** The families from Barangay Sta. Ana lost their personal and household assets but they felt that they were able to recover from these losses as compared to those from Barangay Isidro who have not recovered from the loss of their assets, households and other resources in the community. The residents said that they were able to recover from the losses through the help of agencies and other people who came to help. When they came back to their community after the flood, they cleaned up the house and their surroundings and availed of the relief goods given to them. In a week's time, the life in the community was back to normal.

**Community development perspectives and processes can hasten the recovery process by facilitating capacity building, organizing and resource and risk management.** The cases show that processes that intend to develop the capacity of the people through training and organizing hasten the recovery process. This allows the people to participate in decision making process, which in itself is a strategy for recovery. The provision of resources to the community such as cash, household utensils and capital for economic projects have helped as well, though there are some issues that have to be dealt with. These include the following:

- The tendency of the local group to form or revive groups to enable them to avail of the capital being provided by the support organizations, some of which eventually became active after the funds were given.
- The inadequacy of the groups to manage their projects due to social preparation, inadequate capacity and poor orientation and values such as the lack of commitment to pay back funds borrowed.



- The technical feasibility of some of the projects.
- The lack of monitoring and accountability mechanisms to ensure the proper management of the projects.
- The distribution of some items such as soap which were too much for the family to use, while other families were not given such items at all.

The problems related to the socio-economic projects cropped out because there were community development principles and processes that were not put in place. The idea was externally driven and the people just responded to the call to generate proposal for economic projects that would be funded. The hastily done process of providing assistance did not allow enough social preparation for the people to become more organized. Likewise, its management system, policies and procedures were inadequately done.

**Community collaboration with external support groups must be anchored on community context, participatory paradigm and an attitude of learning from the people.** Communities definitely need the assistance of external organizations. However, the latter should serve as a support group and not as the lead in the community organizing process. Actions have to be based in the context of the community, assessed and analyzed with the people. External organizations have to assume the role of facilitator, bearing an attitude of being co-learners with the community.

#### Endnote

<sup>1</sup> Revised version of the paper *The Role of Community in Economic and Disaster Recovery* presented at the Community Development Society/International Association on Community Development Conference, New Orleans, Louisiana, USA. July 24-28, 2010.



## References

- Cabrido, C. (2008). *Assessment of the State of DRM*. Workshop Guide. UNDP.
- Center for Disaster Preparedness. (2009). View from the frontline 2009. *Country report Philippines, HFA review: Local level and civil society perspective*. Quezon City: Center for Disaster Preparedness.
- Delica-Wellison. (2003). Challenges in CBDM in Asian and Philippine contexts. In *Philippine disaster management forum: Disaster risk reduction through advocacy and coalition building*. Conference Proceedings. September 4-5, 2003.
- Galema, B. & Caedo, J. (2010). *Fieldwork report for Sta. Ana, San Mateo*. A paper submitted to Dr. Emmanuel M. Luna, Department of Community Development, CSWCD, U.P. Diliman.
- Global Assessment Report on Disaster Risk Reduction (GADRR). (2009). *Hyogo framework for action 2005-2015: Biennial progress monitoring and review mechanism 2007-09*. Geneva: ISDR Secretariat.
- Government of the Republic of the Philippines, ADB, AUSAID, EC, GFRR. (2010). *Typhoon Ondoy and Peping: Post disaster needs assessment, Main report*.
- Heijmans, A. & Victoria, L. (2001). *Citizenry-based and development-oriented disaster response: Experiences and practices in disaster management of the citizens' disaster response network in the Philippines*. Quezon City: Center for Disaster Preparedness.
- Luna, E.M., Firmase, J. & Eugenio, V. (2010). *Report on capability building in two communities affected by the flood*. A Report to Sikhay Kilos and Oxfam.
- Luna, E. M. (2009a). *Community development as an approach in further reducing risks among the 2006 flashflood victims in Albay, Philippines*. Paper presented at the World Conference on Humanitarian Studies, Groigen, The Netherlands, February 4-8, 2009. <http://www.abuhrc.org/Publications/Working%20Papers%2024.pdf>

Luna, E. M. (2009b). *The institutionalization of disaster risk reduction in community development education: The U. P. CSWCD experience*. Quezon City: Center for Disaster Preparedness. <http://www.cdp.org.ph/pubs/case2-upcswcd.pdf>

Luna, E. M. (2006). *Transforming vulnerabilities, empowering the vulnerable: A framework on community development for disaster risk reduction in the Philippines*. Paper presented at the Conference on Disaster Management Through Regional Cooperation, Association of Southeast Asia Institutions of Higher Learning, December 4 -7, 2006, University of Indonesia, Jakarta

Luna, E. M. (1999). Rethinking community development: Indiginizing and regaining ground. In Miralao (Ed.), *Social science in the life of the nation*. QC: Philippine Social Science Congress.

Luna, E. de Asas-Luna, G. Molina, G. & Molina, F. (2011). *Status report of the Leyte landslide*. Kobe, Japan: International Recovery Platform.

Tungpalan, M. T. V. (1991). *Popular education: An alternative educational approach*. Quezon City: Lambatlaya, Network for participatory Development, Inc. CSWCD, UP Diliman.

UNISDR (United Nations International Strategy for Disaster Reduction). (2007). *Words into action: A guide for implementing the Hyogo framework*. Geneva: UNISDR.

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# **Social and Economic Impacts of Flooding and Land Subsidence in KAMANAVA, Metro Manila**

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**Karen Ann B. Jago-on  
Shinji Kaneko  
Satoru Komatsu**

*Many areas in Metro Manila are subjected to heavy and regular flooding. Excessive rains brought by monsoons and typhoons cause flooding in the metropolis and storm surges along its coastal areas. The temporary accumulation of water is also due to insufficient drainage systems and impervious surfaces. In recent years, these flooding events have been exacerbated by land subsidence, especially in the northern parts of Metro Manila or the KAMANAVA area. A survey of households and companies was conducted to understand the flood characteristics in the area and the socio-economic impacts on the community. Results reveal the social and economic consequences and impact of flooding to properties, health and livelihood. The study shows also the factors affecting the annual cost due to floods. The research concludes with policy recommendations to curtail land subsidence and eventually reduce the impacts of flooding.*

## **Introduction**

Flooding is a major problem in Metro Manila. The metropolis experiences flashfloods and inundations, especially during the rainy season. The increase in coverage, duration and impacts of flooding is due to a lot of reasons. Rapid urbanization has led to an increase in built-up areas and widespread use of permanent materials such as concrete, which increased impermeability of the ground. Forest in the mountain areas near Metro Manila has been greatly denuded, decreasing the retention rate of watersheds and increasing the volume of water flowing down the plains (Ilago, 2000). The

capacities of rivers and creeks have been reduced by siltation and the use of these waterways for garbage and waste disposal. Housing, commercial establishments and other illegal structures encroached on the remaining natural channels. In the 1960s, about 21 kilometers of small rivers (*esteros*) have already disappeared and many 20-meter wide *esteros* have been transformed into 0.6m-sludge canals (Zoleta-Nantes, 2000). In the last few decades, flooding events have been exacerbated by land subsidence especially in the northern parts of Metro Manila. Based on tide gauge data, the acceleration of land subsidence in the area started in the mid-1960s (Siringan & Rodolfo, 2003). Rodolfo and Siringan (2006) emphasized that in understanding the phenomena of worsening floods in the northern part of Manila Bay, it is necessary to consider not only sea level rise but also land subsidence.

The flood-prone areas in the northern part consisting of the cities of Kalookan, Malabon, Navotas and Valenzuela or simply called the KAMANAVA area, are low-lying flat lands with an elevation of -0.5 to 1.5 meters above mean sea level of Manila Bay. The natural elevation of some areas is lower than the sea level, making them more susceptible to inundation caused by high tides in Manila Bay. The cumulative land subsidence area was more than 100 cm from 1991-2003, with a rate of about 5cm/ year (Siringan & Rodolfo, 2003). Low-level regular flooding in KAMANAVA occurs many times a month, especially during high tide. Heavy flooding, with water up to waist-high, usually happens when typhoons coincide with high tides.

These flood events have great social and economic consequences: loss of lives, damages to properties and infrastructure, health and livelihood. Annual estimates of cost of damages due to disaster events are often compiled and calculated in terms of agricultural losses and damages to public infrastructure. However, damage costs due to flood events are not regularly recorded and are often times underestimated. These usually do not include cost of damages to households and business, or the damages incurred during small flood events. These small flood events often do not register on the national scene as disaster events, but consistently affect the assets of the people, especially the poor, who are most

vulnerable to these disasters. In some countries, the effect of these “everyday disasters” is sometimes much greater than those of the larger events formally recorded as disasters (IFRC, 2002).

Public costs due to floods also include the cost of flood protection and mitigation measures. Several national agencies are responsible for flood management in the country but the Department of Public Works and Highways (DPWH) is the main agency with direct responsibility for planning, construction, operation and maintenance of flood control and drainage facilities. In Metro Manila, however, the Metropolitan Manila Development Authority (MMDA) has a similar mandate for flood control and drainage systems, by virtue of Republic Act No. 7924. Since 1991, the Local Government Code has mandated the local governments to be responsible for effective provision of basic services and infrastructure facilities including flood control, drainage, dikes and other infrastructures.

Most flood control projects have been done since the 1980s and the costs have greatly increased since the 1990s (Fano, 2000). A project was implemented from 1992-1993 to mitigate flooding in the Malabon, Navotas and Valenzuela areas (MANAVA Flood Mitigation Project), but was not sustained (Pacific Consultants International, 1998). Flooding worsened in the KAMANAVA, which entailed the conduct of another project, the KAMANAVA Flood Control and Drainage System Improvement Project. The construction of flood control facilities started in 2000 and was planned to be finished in 2007, but until now, the facilities are still not fully operational. Controversies surround the construction of this project in KAMANAVA because of less consideration of the land subsidence situation in the project design.

The people in KAMANAVA suffered from flooding and through time, they developed mechanisms to survive and cope with its effects. They reconstructed their houses or raised the level of the ground. Some placed barriers to prevent floodwaters from coming in. Others totally abandoned their houses and left the area. Those who have less resources and cannot afford to make some improvements in their housing unit, had to move their belongings upstairs or elevated areas in the house.

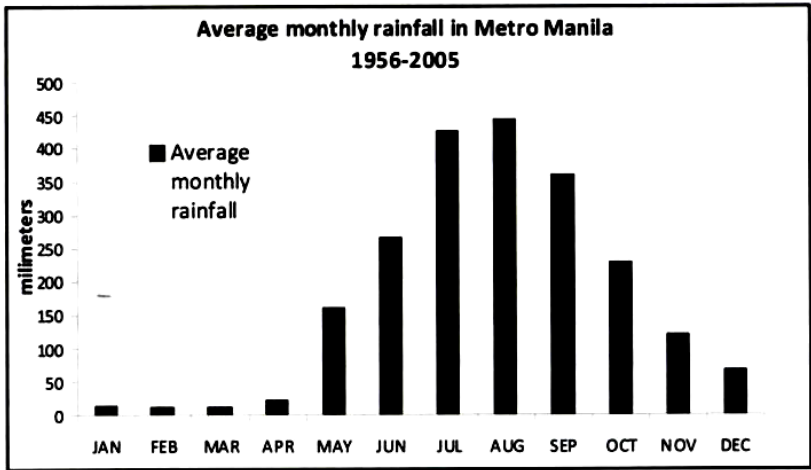


To come up with policy recommendations to mitigate or reduce the impacts of flooding in KAMANAVA area, it is necessary to understand the flood characteristics in the area, the socio-economic impacts on the community, and the flood coping mechanisms of the people. This paper discusses the results of the study conducted on the socio-economic impacts of flooding on households and companies in the cities of Kalookan, Malabon, Navotas and Valenzuela.

**Description of KAMANAVA area**

The four cities of Kalookan, Malabon, Navotas and Valenzuela (KAMANAVA) occupy a land area of about 123.85 km<sup>2</sup> in Metro Manila. Table 2 shows the land area of each city. The city of Kalookan is composed of 188 “barangays” or villages. Malabon City has 21 barangays and out of these, seven are affected by high tide, two are flooded during heavy rain, and five are affected by both high tide and heavy rainfall (Malabon City Planning and Development Office, 2002). Navotas City is geographically located in the extreme northwest shore of Metro Manila. Navotas is composed of 14 barangays, 11 of which are located along the coast and mostly affected by floods, especially during high tide (Navotas City Planning and Development Office, 2007). Valenzuela City, on the other hand, has 38 barangays.

Figure 1. Average monthly rainfall in Metro Manila (1956-2005)



Source of basic data: Records of normal/ average and annual rainfall of selected rain stations in the Philippines, Philippine Atmospheric, Geophysical and Atmospheric Services Administration (PAGASA)

Monthly rainfall in Metro Manila was heaviest during the months of July and August, with more than 400 millimeters of rain (Figure 1). The highest tide levels reaching two meters occurred from May to August (Table 1). This becomes a critical period when heavy rains occur during high tide.

Table 1. Recorded tide levels in Manila Bay (2007)

Tide levels (meters)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total	%
	2	2	1							1	2	2	10	3
1.0						1					1	1	3	1
1.1	4		1	2	2	4	1			1	2	3	20	5
1.2	1	6	3	2	5	2	2		1	2	1	1	26	7
1.3	3	5	3	4	4	2	4	2	1	2	4	3	37	10
1.4	6	3	11	5	1	2	5	5	4	4	2	2	50	14
1.5	2	4	5	6	4	3	1	9	6	9	3	2	54	15
1.6	8	3	4	4	2	1	4	5	8	2	3	3	47	13
1.7	1	2	3	4	3	4	3	2	8	4	3	6	43	12
1.8	1	3		2	6	5	7	5	2	6	4	5	46	13
1.9	3			1	2	3	1	1			5	3	19	5
2.0					2	2	2	2					8	2
2.1						1	1						2	1
	31	28	31	30	31	30	31	31	30	31	30	31	365	100

Source: Navotas City Planning and Development Office

## **Land uses**

Table 2 also shows the land uses in the four cities. Kalookan has the largest area for residential purposes, which is about 62 percent, while the three other cities almost have the same figure of around 37 percent. In Navotas, fishponds, located in the northern part of the city, comprise almost half of the land area. In the past, these fishponds served as an economic base, providing resources as well as livelihood of the people. However, due to large-scale trading in fish and sea-based resources in the Navotas Fishport, the fishponds slowly lost their economic viability. Currently, these fishponds are not in productive use and are left as water-filled open areas.

Table 2. Land uses in the Kalookan, Malabon, Navotas, and Valenzuela

Land use area (sq.km.)	Kalookan	Malabon	Navotas	Valenzuela
Residential	32.79	5.89	4.03	15.99
Commercial	2.5	2.9	0.22	0.86
Industrial	3.9	5.47	1.5	10.61
Institutional	2.26	0.96	0.11	0.35
Agro-industrial	0.12	—	—	0.12
Agricultural fishponds & forestland	—	0.2	4.76	5.95
Open spaces	10.7	0.15	0.06	10.07
Parks and recreation	1.06	0.14	—	0.17
<b>TOTAL</b>	<b>53.33</b>	<b>15.71</b>	<b>10.68</b>	<b>44.12</b>

*Source: Kalookan City Planning and Development Office, 2000; Malabon City Planning and Development Office, 2007; Navotas City Planning and Development Office 2007; Valenzuela City Planning and Development Office, 2007.*

Kalookan City, with its strategic location, serves as the premier center of trade and industry in the KAMANAVA area. The agriculture sector in Malabon used to play a major role in the economy. However, lands were converted for establishments of trade, manufacturing and commerce. Fish production declined in recent years due to incidence of red tide in the 1990s, the overflowing of fishponds due to floods, and decreasing fish production because of water pollution (Malabon City Planning and Development Office, 2002). Today, agricultural activities in Navotas are concentrated in fisheries production. Food manufacturing industries are involved mostly in the processing of fish sauce, dried smoked fish, fish meat and fish sauce. These are mostly small scale in nature and usually carried out in homes. Shipyards involving shipbuilding, repair and maintenance that used to be major economic contributors in the past, have declined (Navotas City Planning and Development Office, 2007). Valenzuela is primarily an industrial and residential suburb of Manila. The proximity of the city center to the North Luzon Expressway makes it a northern gateway to Metro Manila and a choice for business and industries.

### ***Population characteristics***

The population of Metro Manila in 2007 was around 11.5 million and 22 percent of this population resided in the KAMANAVA area. The combined

population of the four cities was 2.56 million people. Table 3 summarizes the population characteristics of the four cities.

Table 3. Population characteristics of the four cities

2007	Population ('000 persons)	Annual population growth rate (1995-2007)	Density (persons/ sq. km)	Number of households	Average household size
Kalookan	1378.86	2.53	25,860	293,374	4.6
Malabon	363.68	0.38	23,150	80,818	4.5
Navotas	245.34	0.58	22,951	53,336	4.6
Valenzuela	568.93	2.23	12,892	126,428	4.5
KAMANAVA	2556.8			553,956	
Metro Manila	11553.43	1.7	18,650		

The annual average population growth from 1995-2007 in Malabon and Navotas was less than 0.5 percent, much lower than the regional average in Metro Manila, which was 1.7 percent. Except for Valenzuela, all cities had a density of more than 20,000 persons/ km<sup>2</sup>. The average household size was about 4.5 persons. Table 4 shows the average household income in Metro Manila and the KAMANAVA area in 2000. The average income in the four cities was lower than the average income for Metro Manila. Navotas had the lowest income profile, only half of that of Metro Manila.

Table 4. Average annual household income in Metro Manila and KAMANAVA

Average annual household income in 2000	Amount in PhP (US\$)
Metro Manila	300,304 (6528)
Kalookan	231,876 (5041)
Malabon	208,391 (4530)
Navotas	156,526 (3557)
Valenzuela	210,850 (4584)

## ***Social services***

Uncontrolled population growth in KAMANAVA results in high incidence of poverty, increasing unemployment, inadequate water, waste management problems, and traffic congestion. Moreover, the extent of urban social services cannot cover the requirements of the rapidly growing population. Due to housing shortage, some families live along creeks, rivers, and flood plain areas, which endanger their situation, especially during flash floods.

Inadequate water supply is evident in Malabon and Navotas. In Malabon, only about 74 percent of residents were served by a private waterworks company, while the rest were serviced through communal faucet system, wells, springs, and rainwater collection (City Planning and Development Office, 2002). In Navotas, 82 percent of the households had access to potable water supply but there was still inadequacy in the volume of water supply in existing service areas (City Planning and Development Office, 2007b). The Maynilad Water Services Inc. maintains the Dagat-dagatan Sewerage System which is located along Dagat-dagatan, Kaloocan City but has a service area of only 3.32km<sup>2</sup>, covering some portions of Navotas, Kaloocan City, Manila and Malabon. The waste generated from domestic usage, commercial establishments and industries in areas not covered by the sewerage systems are discharged into septic tanks, drainage canals or directly to rivers. Since the 1980s, the river system connecting the Malabon-Tenejeros-Tullahan Rivers has already been considered biologically dead due to pollution (Pacific Consultants International, 1998). Uncollected waste material and garbage in drainage channels continuously contribute to worsening flooding and spread of diseases. When it floods, these highly polluted waters carrying microorganisms and harmful chemicals, come in contact with the people, which can endanger their health. The most common causes of morbidity are diseases of the respiratory system, digestive system, skin as well as malaria and dengue fever.



## **Methodology of the study**

This research aims to determine the characteristics of flooding in the KAMANAVA area and the economic burden of floods on communities. In order to analyze the social and economic impacts of flooding in the KAMANAVA area, the following methodologies were used:

1. Investigation of flooding characteristics such as flood causes, flood frequencies, flood duration, height of floodwaters and flood coping mechanisms of communities, and
2. Assessment of cost of damages in a one-time flood event in July 2000; annual household cost/expenses due to flooding events in 2007, and household expenses on flood coping activities.

## *Data sources*

A survey was conducted in March 2008 among 300 households in different barangays in the KAMANAVA area. The questionnaire served as instrument for initial research on the perceptions and experiences of residents in flood-prone areas in KAMANAVA. The survey also looked into the coping mechanisms of households to prevent further flood damages, as well as the additional annual expenses incurred because of the effects of flood. A separate questionnaire was also administered to eight companies to determine the impacts of flooding on small and medium companies in the KAMANAVA area. Basic information included characteristics of household respondents and characteristics of companies.

The questionnaire was divided into two parts. The first part dealt with the nature of flooding events experienced by people in 2007 and their social and economic impacts. These regular floods are low-level, occurring especially during high tide, except during the months from June to September when heavy rains aggravate flooding in the area. Flooding characteristics included the number of

flood days in a month, perceived causes of flooding, height of floodwater, and duration of stay of floodwater inside the house. The first part also included questions on the annual cost or added household expenses due to flood events. The annual cost included health cost, added transportation expenses, the cost of cleaning, damage to properties and others. The first part also included the type and cost of coping mechanisms to prevent further damage due to floods.

The second part of the questionnaire mainly focused on the impacts of heavy flooding which happened in July 2000, when typhoon hit the area during high tide. During that time the water level was as high as 2 meters. The damage cost included cost of damages to properties and household appliances; health cost or amount spent for treatment of illness or injury acquired after the flood; and, transportation cost or added transport expenses due to floods.

The following table shows the description of costs incurred during flood events.

Table 5. Description of cost incurred due to flooding events

Type of cost	Description of cost items
1. Damage cost (Flood in July 2000; one-time flood event)	1.1 Damage cost (cost of damage to properties and household appliances, etc.) 1.2 Health cost (cost for treatment or injury) 1.3 Transportation cost (added transportation expenses)
2. Annual cost (Added household expenses due to flooding events in 2007)	2.1 Health cost (cost for treatment or injury) 2.2 Transportation cost (added transportation expenses) 2.3 Cost of cleaning, damage, others
3. Cost of coping activities	Amount household spent on flood coping activities

In addition to the information taken from the questionnaire, the physical, socio-economic, demographic and other relevant information on KAMANAVA

and the characteristics of flooding, were acquired from official documents and reports from each local government.

## **Results and interpretation**

### ***Description of the household respondents***

Table 6 shows the description of respondents. Among the 300 respondents, 62 percent were females, and 38 percent were males, and the average age was 42. Around 46 percent of the respondents had lived in the area from 5-20 years, 30 percent had stayed from 21 to 40 years and the rest had settled in the area for more than 40 years. A large portion of the respondents came from low to average income groups. Most of their sources of income were located near their homes. Some respondents owned small to medium-size merchandise stores; were self-employed as vendors, drivers or skilled workers; were wage earners working in local government offices; and others were retired employees or did not have regular jobs. Some of those who did not have regular employment depended on remittances of family members working abroad.

Table 6. Profile of respondents (2008)

Gender	Male: 115 (38%)	Female: 185 (62%)
Average age of respondents	42 years	
Average annual household income	Php 77,342.00	US\$1,681.35
Average length of stay	25 years	
Dwelling status	Own	203
	Rent	70
	Others	27

### ***Description of business/ commercial respondents***

The respondent companies were small or medium-scale establishments and mostly involved in food manufacturing and trading. Table 7 provides some characteristics of the companies.

Table 7. Description of respondent companies (2008)

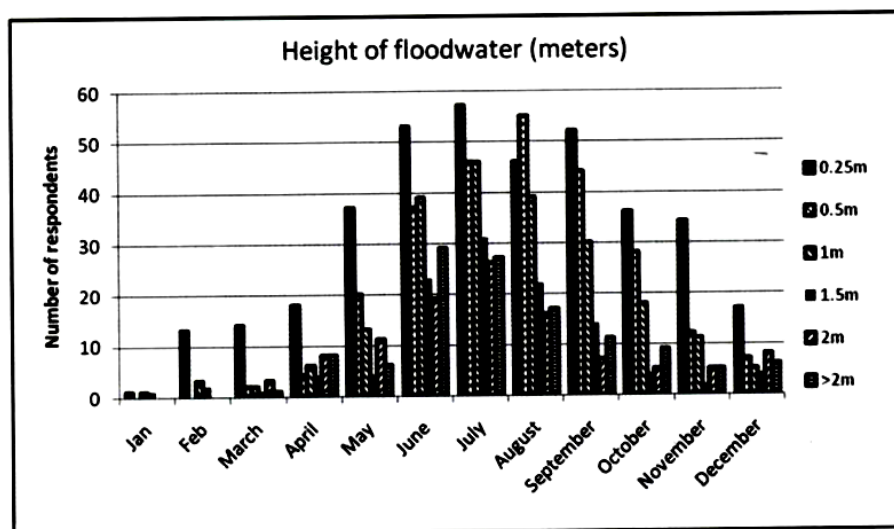
Company	Type of business	Location	Year of establishment	Number of employees	Annual gross income in PhP (US\$)
A	Fish processing	Malabon	1975	8	3,500,000 (76,087)
B	Trading	Kalookan	1984	6	1,500,000 (32,609)
C	Manufacturing	Kalookan	1985	16	2,000,000 (43,478)
D	Food manufacturing, export	Navotas	1990	20	3,650,000 (79,348)
E	Furniture making	Kalookan	1991	15	
F	Trading, sales	Valenzuela	1995	9	400,000 (8,696)
G	Trading, sales	Malabon	1997	4	600,000 (13,043)
H	Trading, sales, rental	Kalookan	2001	4	400,000 (8,696)

### *Flood characteristics and experiences of flooding*

The respondents perceived that the major causes of floods during the early months of the year were high tide and the massive amount of garbage that blocked the flow of water in waterways. During the rainy seasons, heavy rains and typhoons aggravated flooding in the area. Land subsidence, however, was least perceived as one of the causes of flooding in KAMANAVA. Respondents experienced a minimum of 16 to a maximum of 34 flooding days in a year. However, in Malabon, there is a certain area with around 120 residents whose grounds and first level of the houses have been flooded with a meter-high of water since 2004. The place can only be accessible by small outrigger canoe or “bangka”, instead of land transportation.

Depending on the location, the level of water during floods varied from 0.25 meters to more than two meters. Figure 2 shows the height of floodwaters experienced by the respondents throughout the year. The number of respondents being affected with higher floodwater increases from May until September.

Figure 2. Average height of floodwater in the area (2008)



### *Socio-economic impacts of flooding*

Table 8 shows the cost incurred by households during the heavy flood in July 2000. Majority of the cost (81 percent) was the damage to properties and household appliances.

Table 8. Assessment of damage cost of household after the heavy flood in July 2000, PhP (US\$)

Costs incurred during heavy flooding in 2000 - Amount in PhP (US\$)				
	Kalookan	Malabon	Navotas	Valenzuela
Damage cost	5261 (114)	18521 (403)	13422 (292)	7670 (167)
Health cost	2297 (50)	1264 (27)	2117 (46)	518 (11)
Transportation & other costs	1156 (25)	179 (4)	1862 (40)	1216 (26)
Total costs	8713 (189)	19964 (434)	17400 (378)	9404 (204)



The additional household expenses incurred during the year were the cost for treatment of illness or injury during and after floods, cost of transportation, and cost of cleaning and fixing damaged properties and others. The cost of illness and injury was simply referred to in Table 8 as health cost. Transportation cost was estimated as the added transport cost during flood days. The cost of cleaning included cost for repairs of damaged things or transfer and evacuation.

In terms of health impacts, mostly affected by illness were the children and the elderly. The most common diseases reported by the respondents were colds, pneumonia, diarrhea, dengue fever, skin diseases, and leptospirosis. Leptospirosis is usually transmitted to humans through rats and their urine (Easton, 1999). Bacteria in the water can also infect people by entering the body through cuts and abrasions (Ahem & Kovats, 2007). These illnesses were also reflected in the health situation of the cities, especially in Malabon and Navotas, wherein the top 10 causes of morbidity were illnesses of the respiratory system, digestive system, and skin diseases.

During floods, transportation cost varied and most often increased by as much as 200 percent. The regular modes of transportation in the area were buses and “*jeepney*”, which were used for inter-city transfer, while tricycle and “*pedicab*” (cycle rickshaw, human-powered small-scale local means of transport) were used for short distances. Alternative modes of transportation such as “*bangka*” (outrigger canoe), improvised styrofoam boxes or old lifeboats, were also used. Some people also walked through flooded streets or sometimes got free ride provided by government trucks. The prices for “*bangka*” and other alternative transportation varied. The respondents indicated the average amount that they spent as shown in Table 9 which summarizes the annual cost or expenses of households due to flood events.

Table 9. Average annual cost/ expenses of households due to floods (2008)

<b>Annual cost of flooding in PhP (% to total)</b>	<b>Kalookan</b>	<b>Malabon</b>	<b>Navotas</b>	<b>Valenzuela</b>
Health	5,116 (60%)	2,174 (32%)	5,446 (50%)	1,042 (40%)
Transportation	2,538 (29%)	1,446 (21%)	1,840 (17%)	506 (19%)
Cleaning, damage, other	1,015 (11%)	3,146 (46%)	3,617 (33%)	1,089 (41%)
<b>Total</b>	<b>8,670</b>	<b>6,766</b>	<b>10,904</b>	<b>2,639</b>
Total (US\$)	188	147	237	57

Through the years, families invested in coping activities to prevent further damage, and shown in Figure 3 are mostly physical improvements such as land filling, reconstruction of houses to increase elevation from the ground, adding another level of the house, and placing barriers such as sandbags, wooden planks or concrete blocks. Some families transferred to another place or evacuation centers. Some people who had less resources could hardly afford any improvements in their lot and some residents also felt so resigned to the impacts of floods that they chose not to spend for physical developments in their houses. In Figure 3, they were classified under the category "Did nothing." The category on "Others" include activities such as transfer of belongings and appliances in higher parts of the house, transfer of vehicles in higher places, the placement of sandbags, and temporary evacuation. Table 10 shows the average cost of these coping activities for the whole year. Because these coping activities had been done in different years, the values had been adjusted to 2007 values. The average cost was about PhP61,455 (US\$1,397) in that year. Comparing these four cities, respondents from Navotas and Malabon spent more for these improvements on their homes. These two cities are the most flood-affected areas in KAMANAVA.

Figure 3. Flood-coping activities

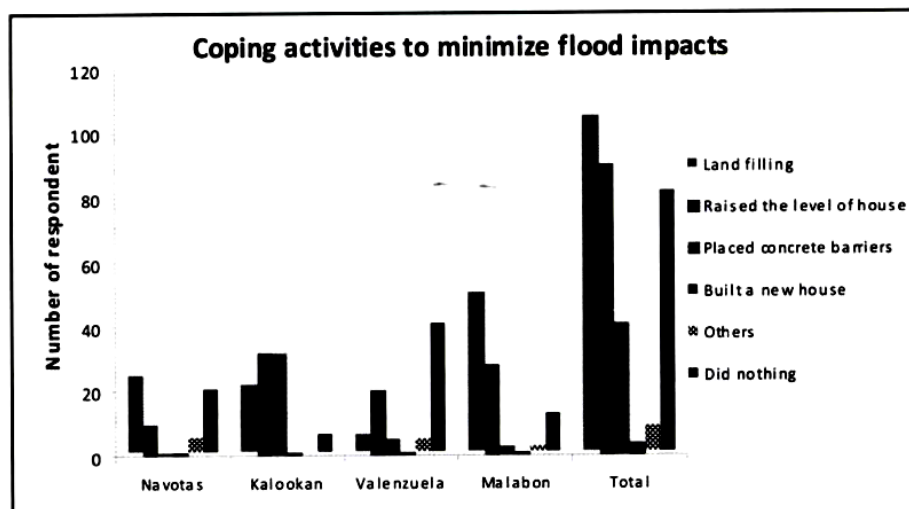


Table 10. Average annual cost of flood coping/ flood alleviation activities

Cost of coping activities	PhP (US\$)
Kalookan	44,542 (968)
Malabon	88,359 (1,921)
Navotas	99,561 (2,164)
Valenzuela	13,357 (290)
<b>Average</b>	<b>61,455 (1,336)</b>

### *Flood impacts on companies*

Companies or business establishments affected by flood had also improved their buildings and surroundings to prevent flood waters from coming in to their business areas. Filling the land and raising the level of buildings were commonly done. Most of these activities were done after the heavy floods in 2000. Table 11 shows the damage cost incurred as well as the cost of coping activities.

**Table 11. Cost estimates of flood impacts on companies and business establishments**

<b>Company</b>	<b>Prevention activities</b>	<b>Year undertaken</b>	<b>Cost of prevention activities in PhP (US\$)</b>	<b>Damage cost (flood in 2000) in PhP (US\$)</b>
A	Land filling	1990, 2001	127,974 (2,782)	22,684 (493)
B	Land filling Raised the level of building	2000	34,026 (740)	— 82,230 (1,788)
C	Land filling Raised the level of building	2000	425,325 (9,246)	42,533 (925)
D	Built another building	2003	1,619,574 (35,028)	36,862 (801)
E	Land filling Raised the level of building	2001	109,226 (2,374)	35,444 (771)
F	Raised the level of building	2001	33,000	
G	Raised the level of building	2001	43,807 (952)	11,058 (240)
H	Raised the level of building Placed concrete barriers	2002	16,755 (364)	20,699 (450)

### **Summary and discussion**

Flooding in KAMANAVA is a recurring problem caused by various factors: high tide levels, overflow of riverbanks, and inadequate drainage. Land subsidence due to excessive groundwater withdrawal has also aggravated flooding in the area. But this phenomenon is least understood. In the survey, only few respondents identify land subsidence as one of the causes of flooding. There is a need, therefore to increase awareness of the subsidence problem, one cause of which is over-extraction of groundwater.

These floods have placed a burden on the lives of the people, given the cost of damages to household properties, amount spent for illnesses and injury, transportation, cleaning, transfer and evacuation, and others. On top of these is the added loss of income when people cannot work due to inaccessible roads or lack of transportation. These annual costs increase with the rise in the height of floodwaters. But these are reduced when household spends for flood coping or preventive activities. When compared with income, the ratio of the annual cost of flood effects is about 28 percent of the annual income of an average family in

Navotas. Given the economic situation of most families in the area, this amount is significant and have been spent for other basic necessities in the household, such as food, clothing, education, health or sanitation. For poorer households, amount spent on illnesses due to floods takes a greater portion of the expenses as they have less protection from infections or less access to clean water after floods. Poorer households also live in vulnerable and unsanitary areas, making them more susceptible to microorganisms in waste carried by floodwaters. Damages to household appliances are less as they have kept less things or appliances in their households.

Households have spent for improvements in their houses to prevent floodwaters from coming in. These are ways to cope with flood impacts in order to continue to live normally in the areas. The higher the cost of damage in heavy flooding, the more households spent on flood coping activities. But this capacity to make improvements at home is highly dependent on income. The fact that government reconstructed and raised the levels of some streets to avoid floodwaters also caused problems. In some cases, these road improvements are detrimental to households which cannot afford to raise their lots up to the level of the streets. Floodwaters eventually go to lower areas, causing more damage.

In this study, the damage cost and annual expenses incurred due to floods were estimated as average amount among households. The results can be improved if different impacts of flooding on households with different social and economic conditions are considered. In Brouwer et al. (2007), a complex relationship between poverty and damage costs was shown. The poor suffer more in relative terms, but not in absolute terms. Higher income households suffer higher damage costs in absolute terms. But because the coping capacity of these households is greater than poorer households, as reflected in the fact that the proportion of the damage cost to their income is lesser, the relative damage cost is lower than in poorer households. Aside from the damage assessment, further studies on the effects of flood on temporary displacement of people, population movements or migration, would also be necessary to understand the social impacts of disasters on people's lives.



The results of the survey were validated through a group discussion. There was a common understanding among the group of the recurring problem of flooding in the area and the added burden it gave to the household. However, land subsidence, which can be caused by over extraction of groundwater, was least understood as one of the factors that aggravate flooding. This was also reflected in the results of the questionnaire survey. People noticed that their lots become lower than the roads, but they assumed that this happened due to the landfilling of roads, eventually raising its level compared to their house lots. Given the inadequate understanding on the relationship between groundwater level decline and land subsidence and flooding, it is necessary to raise awareness on these issues to help residents understand the complex factors causing frequent floods in the area.

Although flooding in KAMANAVA has been a perennial problem, some people get used to the effects and continue to stay in the area. Most of the respondents' means of livelihood are near their residences. With the growing population in Metro Manila, it is quite difficult to find a more affordable place to live. Others choose to stay because of their personal attachment to the area. They were born and raised in the area. However, other people who can afford to settle in other places already abandoned their homes.

The KAMANAVA area plays a significant role in Metro Manila's economy in terms of fishery, industry and commerce. However, frequent floods in the area have disrupted economic activities, especially in Malabon and Navotas. Even the population growth from 1995-2007 in these two cities was quite low compared with other cities in the metropolitan area. From 1995-2000, Malabon experienced a negative population growth, while Navotas only increased its population by a thousand residents. Flooding makes it more difficult for residents to find alternative livelihood in the area. Since the 1980s, the government has implemented several flood control and drainage projects, but these are only palliative measures. With the impact of land subsidence and the added threat of climate change which can result in sea level rise, as well as increased intensity and frequency of rainfall, people in the KAMANAVA will continue to suffer from inundation if appropriate solutions are not implemented. There is a need to improve drainage systems and

flood control structures. The use of waterways as garbage dumpsites or construction sites should also be prohibited. To curtail subsidence and eventually reduce the impacts of flooding, it is necessary: 1) to slow the rate of subsidence by replacement of groundwater with surface water sources; and, 2) if groundwater is to continue to be exploited, it must be regulated. In the short-term however, there is a need to provide alternative housing sites for residents heavily and regularly affected by floods or are living in dangerous zones. Economic opportunities, social and cultural services should be provided to enhance smooth adaptation of affected communities to their new location.

## References

- Ahem, M., & Kovats, S. (2006). The health impacts of floods. In R. Few & F. Matthies (Eds.), *Flood hazards and health*, UK: Earthscan.
- Brouwer, R., Akter, S., Brander, L., & Haque, E. (2007). Socio-economic vulnerability and adaptation to environmental risks: A case study of climate change and flooding in Bangladesh. *Risk Analysis*, 27 (2), 313-326.
- Easton, A. (1999). Leptospirosis in Philippine floods. *British Medical Journal*, 319, 212.
- Fano, N.F. (2000). Flood control and drainage network/operations/plans in Metro Manila. In L.Q. Liongson, G.Q. Tabios III, & P.M. Castro (Eds.), *Pressures of urbanization: Flood control and drainage in Metro Manila*. Quezon City: University of the Philippines Center for Integrative and Development Studies.
- Ilago, S.A. (2000). Floods and governance: Some considerations. In L.Q. Liongson, G.Q. Tabios III, & P.M. Castro (Eds.), *Pressures of urbanization: Flood control and drainage in Metro Manila*. Quezon City: University of the Philippines Center for Integrative and Development Studies.
- International Federation of Red Cross (IFRC). (2002). *World disasters report 2002*. Geneva: IFRC and Red Crescent Societies.
- Kalookan City Planning and Development Office. (2000). *Comprehensive development plan of Kalookan*. Metro Manila: Kalookan City Planning and Development Office.
- Malabon City Planning and Development Office. (2007). *Socio-economic profile-city of Malabon*. Metro Manila: Malabon City Planning and Development Office.

- Malabon City Planning and Development Office. (2002). *Comprehensive land use plan*. Metro Manila: Malabon City Planning and Development Office.
- Marfai, M.A. & King, L. (2008). Potential vulnerability implications of coastal inundation due to sea level rise for the coastal zone of Semarang city, Indonesia. *Environ Geo*, 54,1235-1245.
- Navotas City Planning and Development Office. (2007). *Socio-economic profile of Navotas*. Metro Manila: Navotas City Planning and Development Office.
- Pacific Consultants International. (1998). *The study on flood control and drainage system improvement for Kalookan-Malabon-Navotas-Valenzuela (KAMANAVA areas)*. Metro Manila: Pacific Consultants International.
- Rodolfo, K.S., & Siringan, F. (2006). Global sea-level rise is recognized, but flooding from anthropogenic land subsidence is ignored around northern Manila Bay, Philippines. *Disasters*, 30 (1), 118-139.
- Siringan, F.P. & Rodolfo, K.S. (2003). Relative sea level changes and worsening floods in the western Pampanga delta: Causes and some possible mitigation measures. *Science Diliman*, 15, 1-12.
- Valenzuela City Planning and Development Office. (2007). *Preparation of master plan of Valenzuela city's drainage system- overall drainage plan report*. Metro Manila: Valenzuela City Planning and Development Office.
- World Bank (WB) and National Disaster Coordinating Council of the Philippines (NDCC)- (2003). *Natural disaster risk management in the Philippines: Enhancing poverty alleviation through disaster reduction*. Metro Manila: National Disaster Coordinating Council of the Philippines.

Zoleta-Nantes, D.B. (2002). Differential impacts of flood hazards among the street children, the urban poor and residents of wealthy neighborhoods in Metro Manila, Philippines. *Mitigation and Adaptation Strategies for Global Change*, 7, 239-266.

Zoleta-Nantes, D.B. (2000). Flood landscapes of Metro Manila. In L.Q. Liongson, G.Q. Tabios III & P.M. Castro (Eds.), *Pressures of urbanization: Flood control and drainage in Metro Manila*. Quezon City: University of the Philippines Center for Integrative and Development Studies.

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# **Rebuilding Communities and Lives: The Role of *Damayan* and *Bayanihan* in Disaster Resiliency**

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**Teresita V. Barrameda  
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*The study explores the roles played by damayan (mutual aid ) and bayanihan (cooperation and volunteerism) in the lives of people in five rural communities in Albay Province. It highlights how these indigenous practices serve as social resource in the people's day-to-day survival; as coping mechanisms in times of typhoons and flooding; and, as adaptive strategies in building their resiliency. The study shows that these practices help in developing their own sub-cultures of safety and promoting the emotional well-being of the people. There were limitations in these indigenous practices, requiring external support to sustain the peoples' initiatives for recovery. The study also provides insights and proposals on how local government units and organizations in the disaster field can utilize damayan and bayanihan in disaster risk reduction.*

## **Introduction**

The Philippines, due to its geographic location and landscape, is a natural hazard-prone country, experiencing several natural disasters each year. Since it lies along the pathway of tropical cyclones from the Pacific Ocean, an average of 20 tropical cyclones cross the country's area of responsibility each year with the accompanying dangers of high winds, storm surges and floods (CBDM Training and Learning Circle-Philippines, 2009; UNDP and EMB-DENR, 1996). Tropical

cyclones are most common from June to December. Between the months of June and November, an estimated average of three typhoons hit the country every month. Luzon is the most typhoon-prone area while the provinces of Samar, Leyte, Eastern Quezon, and Bataan Islands are the ones that experience the strongest typhoons (World Bank and National Disaster Coordinating Council, 2005).

Poverty lurks in many parts of the country, aggravating the vulnerability of majority of its poor population. Poverty makes poor people most vulnerable during disasters. In urban areas, poor people reside along dangerous creeks, rivers and garbage dumping sites. Their lives are endangered in times of flooding and landslides. In the rural areas, constant typhoons and droughts endanger the livelihoods and food security of farming and fishing households since these are weather and climate-dependent. Likewise, poor diet, limited access to clean water and sanitation as well as to health services undermine poor families' resistance to diseases and malnutrition.

Despite their lack of access to resources and services, poor households in both urban and rural communities have learned to rely on themselves for their everyday survival, as well as during times of crises, extreme events, and disasters. The indigenous support mechanisms like *damayan* (roughly translated as compassion) and *bayanihan* (cooperation and volunteerism) are still widely practiced in situations both of everyday survival and crises.

This paper explores how poor households in five rural communities in Albay Province in the Bicol Region utilize these indigenous forms of social support in their everyday struggle for survival and in developing resiliency before and after extreme events like typhoons and accompanying flooding.

## **Background and Context of the Study**

This paper is part of the Annex Study under the MICRODIS Integrated Project. The MICRODIS Project was a four-year (2006-2010) project that focused on researches on the economic, health and social impacts of extreme events at the

micro level in areas in Europe and Asia. The overall goal was to strengthen preparedness, mitigation and prevention strategies to minimize the impacts of extreme events on communities. The MICRODIS Survey in the Philippines was conducted in Albay and Southern Leyte to determine the social, health and economic impacts of hydrological hazards, particularly typhoons and flooding, on communities. These areas were chosen because they were severely affected by typhoons and flooding in the past years. In Albay, the study was done by the Citizen's Disaster Response Center (CDRC) and Xavier University (XU) in eight barangays in the municipalities of Polangui and Legazpi City.

Albay is composed of 15 municipalities, three cities and 720 barangays. (MICRODIS, n.d.). Since it is located along the typhoon belt, an average of two major strong typhoons hit the province every year. The province has a yearly average of 20 typhoons with wind velocity ranging from 60-180 kph. Its average rainfall is 233 millimeters, with the lowest recorded at 130 millimeters in the months of April, and the highest at 389 millimeters in the months of December. The eastern areas of the province have no dry season, the western areas have heavily distributed rainfall, and the central areas have no pronounced maximum rain period with a dry period from November to January (MICRODIS, n.d.)

In November 2006, Albay was among those hardest-hit by Typhoon Reming (international name: Durian) with a recorded rainfall of 466 millimeters, the highest in 40 years. Several communities were buried in rocks and lahar falling from the slopes of Mt. Mayon. In 2007, two super typhoons, Lando (international name: Hagibis) and Mina (international name: Mitag), caused flash floods and landslides affecting 69,465 families (MICRODIS, n.d.). Reming ranks number eight among the costliest typhoons that hit the country with damages amounting to 5.086 billion pesos (Virola, 2009). Other disasters that hit Albay included infestation of major rice areas by rats and bugs in 2009, and the El Niño phenomenon in 2010 that affected the entire Bicol region. Around 5,000 hectares of agricultural lands were damaged by the prolonged dry spell prompting the local government units in the region to declare a state of calamity in their respective areas (TABI Annual Report, 2010).

## Research Methodology

The MICRODIS country study was conducted in 2008 and utilized both survey and focus group discussions (FGDs). The research areas were identified through a multi-stage cluster sampling: first stage was the selection of two municipalities (Polangui and Legazpi City); the second stage identified the affected and least affected barangays. Categorization was based on the assessment of the National Disaster Coordination Council (NDCC) and the Mines and Geosciences Bureau of the Department of Environment and Natural Resources. Two affected and two least affected barangays per municipality were chosen. Fifty households in each barangay were chosen, resulting in 400 respondents for the entire study.

An Annex study was undertaken in 2010 to explore issues identified in the country study, particularly the social aspect of community coping mechanisms during typhoons and flooding. The Annex study utilized the data of the country study, particularly on the social impacts of typhoons and flooding in Albay as take off points in exploring the poor rural households' coping mechanisms. It was in the process of conducting the Annex study that the indigenous practices of *bayanihan* and *damayan* surfaced and was further explored in the study, thus becoming the basis of this paper.

Four FGDs were conducted for this study. Participants were drawn from the 400 survey respondents of the MICRODIS country study and were purposively selected based on three criteria: a) they were severely affected by the typhoons and flooding; b) they were residents before and after Super Typhoons Reming, Lando and Mina; and, c) they were willing to be respondents for the study. The FGDs were conducted in five barangays: Balangibang and Kinale in the municipality of Polangui; and Bonga, Matanag and San Francisco in Legazpi City.

Forty-two participants took part in the FGDs – 24 females and 18 males. The age range of the participants was between 19 and 70 years old, with majority

falling within the age range of 40-49 years old. Of the 42 participants, 29 held positions in the barangay councils of their respective communities. Majority of the participants were farmers (36 out of the 42 participants) with one to seven hectares of farm land.

### **Analytical Framework: Linking *Damayan* and *Bayanihan* with Rural People's Poverty, Vulnerability and Resiliency**

#### ***Poverty, Vulnerability and Resiliency***

Poverty and vulnerability to natural disasters are linked and their effects are mutually reinforcing. Natural disasters contribute to poverty while poverty is the most important determinant of vulnerability. Poor households are the most vulnerable considering their housing locations, type of housing, degree of access to social services, sources of employment, and access to assets and resources. It was noted that the poverty-vulnerability to natural disaster link is often reinforced by “rapid urbanization, environmental degradation and the increasing risk of environmental disasters, whether as a result of direct human impact and /or from climate change” (WB and NDCC, 2005, p. 7).

The 2005 International Red Cross disaster report stated that “the impact of disasters ‘aggravate pre-existing poverty, creating a downward spiral of vulnerability, arresting development’” (Agence France-Press Associated Press, 2006). In conceptualizing both poverty and vulnerability, there is a need to highlight the importance of social protection, by both government and private sectors, as a policy tool for the reduction of vulnerability and poverty (Tandon & Hasan, 2005). The poor have varying levels of poverty in relation to access to basic needs and services which renders them as complex social groups.

Moreover, the poor are not a homogeneous lot. Although levels of income and consumption are important factors in determining who the poor people are,



there are however, other elements to be considered. For instance, a household which has better access to health, education and other public services than another household, even if both of them are at same income level, cannot be considered to be equally poor (Kozel & Parker, n.d.). Lesser access to resources and services also increases a household's vulnerability for it deprives them of basic needs. Holling (in Downing & Franklin, n.d., p.1) stated that "vulnerability comes from a loss of resilience".

Like poverty, resiliency as a concept has various meanings, requiring further theoretical exchanges. Moreover, there is an urgent need to develop indicators to measure resiliency (Peacock et al., 2008).

In the context of the disaster discourse, the concept of resilience was applied to social systems related to natural hazards, defining it as "the capacity of a system, or part of a system, to absorb and recover from hazardous events" (Timmerman, 1981 cited in Peacock et al. 2008, p. 5). This concept of resiliency as a system's capacity to withstand and recover from hazards could theoretically be strengthened with the help of other members of a system; "the essence of *social resilience* is not merely fostering independence, but rather the *interdependence* that is known in the Philippines as '*kapwa*' (Sapirstein, 2006, p. 61). Further, *pagkataong Pilipino* (Filipino personhood) highlights a dynamic relationship between *loob* or inner self with *labas* or others represented through *kapwa* (shared inner self) and *pakikipagkapwa* or the holistic interaction with those treated as fellow human beings (Aguiling-Dalisay, Yacat & Navarro, 2004). Filipinos interact with their *kapwa* through *pakikipagkapwa* which, in terms of interaction levels, "refers to 'humanness at its highest level'" (Santiago, 1976 in Enriquez, 1994, p. 45). In "connecting... *pagkataong-Pilipino* with Filipino volunteerism, we may argue that the helping behavior of a Filipino volunteer is an act of *pakikipagkapwa* that cannot be divorced from the context of *istrukturang panlipunan* (socio-political units)" (Aguiling-Dalisay et al., 2004, p. 31). People in disaster-stricken communities then utilize *bayanihan* and *damayan* as forms of *pakikipagkapwa* in relating with their *kapwa*.

## ***Bayanihan and Damayan***

The term *bayanihan* refers to any communal voluntary effort to achieve a common goal. *Bayanihan* “connotes heroic assistance (from *bayani* meaning hero)... [and] is a peerless communitarian practice that ignores social ranking and structures, leadership roles, and authority relationships” (Ofiana, 2002 cited in Aguilin-Dalisay et.al, 2004, p. 34). It is a common practice in Philippine communities wherein community members help their neighbors move to a new place, repair homes, or build communal infrastructures. A disaster management plan for Real, Infanta and General Nakar in Quezon called REINA Project is said to be “consistent with the bayanihan spirit, a community-led and indigenous practice” (ADB, CIDA, EC, NCRFW, UNICEF, UNIFEM & UNFPA, 2008, p. 109).

On the other hand, the practice of *damayan* shows the community’s solidarity through compassion. Aguilin-Dalisay et.al. (2004) stated that “*damayan* implies assistance to others in times of crisis or grief” (p.34); they also cited Ileto (1979) who “referred to the root word *damay* as empathy and participation” (p. 34). It is a practice that lessens another person’s grief through being there for them. A common example is *pakikiramay* (consoling), observed during a time of death in the family whereby friends and neighbors express sympathy for one’s loss and often give money to defray burial costs. Other examples include offering solace or advice during times of grief or misfortunes. An example of *damayan* by women in disaster situations is taking care of people “who are in shock from the loss of family, friends, neighbor, propert[ies], and livelihoods”) ADB et al., 2008, p. 109).

Further, Luna (1999, p. 5) stated that “[Disasters] can instill selfless giving among the people and move them to volunteerism” *Bayanihan* may then arise in times of disaster as an informal organizing of people aiming to surpass the challenges brought about by disasters (Luna, 1997 cited in Luna, 1999, p. 11) In practice, disaster victims have learned to organize themselves as survivors and partners in development. Communities vulnerable to flooding have developed local

endogenous response systems. The locality of such systems connotes not only spatial dimensions but the underlying social dynamics as well (Luna, 2003).

According to Hilhorts, “It has been estimated that no more than 10 percent of survival in emergencies can be attributed to external sources of relief aid” (Marianti, 2007, p. 23). Marianti (2007) noted that people are becoming aware that comprehensive disaster management systems should not be the sole concern of the government. Instead, it should be reinforced by the participation of local people as well as tapping local capacities, including local knowledge and expertise, resources and social capital, among others. It has been manifested in many situations, where local people organized committees to respond to emergency situations, resulting out of their awareness that in order for them and their communities to survive, they have to rely on themselves. Moreover, similar studies (Bankoff, 2003; Blaikie et al., 1994) observed that people, particularly those residing in disaster-prone areas, tend to develop ‘extensive knowledge and practices’ on ways of coping with disasters (Marianti, 2007, p. 23).

One can say that a community’s vulnerability and resiliency correspond to the magnitude of damage a disaster can inflict. As these communities experience disasters as part of their lives, they develop endogenous response systems to cope (Luna, 2003). Communities may utilize *bayanihan* and *damayan* as a form of *pakikipagkapwa*, and as a means of improving their resiliency against disasters but the lasting effects of such actions may ultimately be limited by their initial capacity aggravated by their poverty.

## **Findings of the Study**

### ***The Role of Damayan and Bayanihan in the Daily Lives of People in the Five Rural Communities***

*Damayan* and *Bayanihan* are indigenous mechanisms of support commonly used in the day-to-day interactions of people in the five communities under study. These practices serve as social resource among residents in these

communities, although such practices are also commonly observed in other rural communities in the country.

According to the FGD participants, *damayan* is manifested in the day-to-day interactions among neighbors in their respective communities. The most common manifestations of this practice include: asking rice or viand from a neighbor when one does not have enough of these during meals; asking fruits or vegetables from a neighbor's garden; requesting a neighbor to look after one's children while one is on errands; sharing food with other neighbors when one has extra food or has prepared special food even on ordinary days (e.g. pancit). The respondents also noted that these practices are also common in their communities in situations of calamity and personal crisis. They said that it is common among neighbors to extend financial and emotional support to those who experience misfortunes. When there is death in the family or when a fire destroys one's house and properties, neighbors are source of comfort during bereavement and grief. Aside from providing emotional support, neighbors mobilize themselves to solicit materials and financial resources to ensure that the dead will have a decent burial or the house of the fire victim will be rebuilt.

*Bayanihan* is also widely practiced in the communities. This is practiced on occasions that need additional human power such as building a neighbor's house; in communal farm work when a neighbor has no money to hire labor; when building canals, temporary bridges and dirt roads; in cleaning creeks; and, filling potholes with gravel. It is also practiced during special occasions like weddings, baptisms, birthdays, and funerals when neighbors render free labor and time to take on work related to the particular occasion. The respondents noted that since many of them cannot afford to hire people to assist them in farm work, especially during land preparation, planting and weeding, it is common practice in the five communities to exchange labor whereby three to four neighbors agree to work collectively on each farm on a rotation basis.

The participants explained that these practices are kept alive in their communities because of the daily and close interactions among neighbors. Some

participants also noted that the closely-knit structure of the communities where people are related to each other either by blood, law or familiarity, is also a contributing factor. In addition, some opined that their similar economic conditions foster cohesiveness. In a FGD in San Francisco, a female respondent remarked, “*sino-sino pa ba ang magtutulungan kung di kami ring magkakapitbahay* (We have no one to turn to but ourselves).”

### ***Damayan and Bayanihan as Coping Mechanisms During and After Typhoon and Flooding Events***

Aside from being social resources in the daily lives of the participants, *damayan* and *bayanihan* also play significant roles in times of typhoons and flooding. They serve as coping mechanisms during emergency situations.

The five communities are all prone to a particular hazard. Barangays. Bonga and Matanag in Legazpi City, which lie at the sides of Mt. Mayon, are prone to flooding and lahar flows; Barangay San Francisco, a sloping community in Legazpi City, is prone to landslides; and Barangays Kinale and Balangibang in Polangui are prone to flooding, even with moderate but continuous rainfall which causes the water to overflow from the Bicol River Basin.

The participants narrated instances through which the spirit of *damayan* and *bayanihan* helped them in coping with emergency situations in the midst of typhoons and flooding:

- In Barangays Bonga and Matanag, residents, through the leadership of local officials, organized teams composed of men to assist in the evacuation of residents. When it is time to evacuate, the teams assist the women, children and the elderly members of their communities to the evacuation centers while other teams patrol the community to ensure that livestock and valuables are not stolen. With the teams patrolling and guarding the community, residents are assured that their houses are safe from burglars and eventually are persuaded to evacuate.



- In Barangays Kinale and Balangibang, the residents serve as the first line of defense, especially when external support is not yet available. As roads become inaccessible, relief and emergency support may not be able to pass through. With no one to turn to for help, the residents rely on each other for economic and emotional support.
- In Barangay San Francisco, after every typhoon event, the men, armed with hoes and picks, survey the community for possible landslides to save lives and help those whose houses are damaged by landslides.

Likewise, *damayan* is at work in emergency situations as experienced by the respondents. The compassion and efforts to help offered by neighbors brought comfort and enabled them to feel at ease. As recounted by participants, from Barangays Kinale and Balangibang, a mixed feeling of fear, distress and anxiety enveloped them upon seeing the flood. The flood rushed in, filled up the first floor of two-storey houses in a very short time, and submerged the one-storey houses in their communities. For those whose houses were submerged, it was very comforting to see other families offering their houses, food, and dry clothes, as well as medicines to those who caught colds and coughs. Men made makeshift rafts out of banana trunks to transport neighbors to safer grounds and to salvage personal belongings.

The participants from the three communities in Legazpi experienced the same feelings. The neighbors provided emotional support by offering comforting words, “*makakaraos din tayo, may awa ang diyos*” (we can survive this situation through the help of God) or “*kaya natin ito*” (we can survive). They also offered prayers, and showed their sympathy by touching the hands or shoulders of those affected. These gave them inner strength to cope with the situation despite anxiety, fear and emotional distress.

All participants, except those from Barangay San Francisco, experienced staying in evacuation centers. Those from Barangays Kinale and Balangibang stayed in evacuation centers for a couple of days and returned to their houses as

flood water subsided. But, those from Bonga and Matanag stayed in evacuation centers for almost three months. They said that if they had a choice, they would not stay in the evacuation centers. They experienced discomfort due to congested living quarters, lack of privacy, poor ventilation and sanitation, and limited facilities like water, toilets and cooking facilities. Even then, they saw the benefits of staying in evacuation centers because of access to emergency and relief aid. –

At the evacuation centers, the spirit of *damayan* strongly manifested in the daily interactions of residents. It contributed in strengthening their will to triumph over their grief, fears and emotional distress. Participants from Bonga and Matanag noted that women and men tapped the usual *umpukan* (rough translation of “group talk”) to express their feelings and experiences, unloading their emotional burden, anxiety and grief. For the men, the occasional drinking sessions at night became venues to release their feelings about the situation and plans for the future. Similarly, the women’s afternoon chats became spaces for talking about their experiences, to unload their feelings, to shed tears, as well as to collectively reaffirm their faith in God. For the bereaved families who lost their loved ones, other community members encouraged them to talk it out through comforting words. Faith in God, unity and support of one another were considered by participants as very important. The *damayan* spirit contributed in developing their individual and collective strengths.

With the unpredictability of external support, the families learned to rely on each other. Families, relatives, friends, and neighbors were the primary sources of emotional and material support during emergency and at the early stage of recovery. They noted that relief and emergency aid might or might not come to their communities, especially when the devastation affected several areas in the province. Thus, they did not rely on the support coming from the local government and rationalized that the budget for disaster response were limited. They even suggested that the most affected should be prioritized. Such awareness helped minimize conflicts during distribution of emergency support. They also expressed appreciation for the efforts of the Local Government Units (LGUs) and humanitarian organizations in extending emergency and relief aid. Some

respondents wished that organizations should not only focus on relief provision but also support them in rebuilding their damaged farms and livelihoods for their economic well-being.

After the disaster, rebuilding their lives became the preoccupation of the residents. They were required to leave the evacuation centers and relief aid ceased to arrive. Back in their communities, their primary concern was how to recover from the effects of the typhoon and flooding. Participants noted that the recovery stage was the most difficult part. With damaged farms and no income, the participants noted their immediate need was for cash for basic consumption, repair of houses, and reconditioning the farm, especially those buried in lahar. Many sought loans from relatives, friends, and neighbors, while some resorted to informal moneylenders.

At this early stage of recovery, *damayan* and *bayanihan* were tapped as social resource. Damaged houses were built through the *bayanihan* system; community infrastructures like school buildings, churches, wooden bridges and dirt roads were repaired through the collective labor of the men; farms were reconditioned through the rotation-based communal work; and, loans of neighbors were written off or rescheduled for deferred payment. As a *sari-sari* store owner from Barangay Matanag remarked, “*namatayan na nga ng anak, sisingilin mo pa*” (it is unkind of me to ask for repayment of loans while the family grieves over the loss of a child).

### ***Damayan and Bayanihan as Adaptive Resource in Rebuilding their Lives and Physical Communities***

The residents of the five communities considered typhoons and flooding as part of their daily lives. They learned to develop adaptive strategies on how to cope with these situations and developed their own sub-cultures of safety.

- In the five communities, people have developed knowledge on what actions to take in times of disasters – what to do, what to prepare, what to

bring and where to go. This was complemented by the disaster education awareness provided by the local barangay councils in the respective communities.

- In Barangays Kinale and Balangibang where an entire day of moderate rainfall already causes the nearby Bicol River Basin to swell, the people have become accustomed to recurring flooding, and have developed mitigation measures. During rainy seasons, residents are alerted to monitor and gauge the intensity and duration of the rain as basis for evacuation. During dry seasons, the Barangay Councils lead in mobilizing the people - men and women, young and old, through the *bayanihan* system, to collectively clean the creeks and stack sandbags at the back of houses, especially those located near creeks and rivers.
- In Barangay San Francisco which is prone to landslides, the residents collectively reinforce sloping areas with stone walling to prevent erosion during the typhoon seasons.
- Similarly, in Barangays Bonga and Matanag, that are prone to lahar flows from Mt. Mayon during typhoon seasons, the residents collectively stack sand bags near riverbanks in anticipation of the possible lahar flows. They also plant trees along riverbanks as buffer for lahar and dig trenches to direct the course of the lahar flows. Aware of the ill effects of cutting down trees, both women and men formed volunteer teams to guard and patrol the foot of Mt. Mayon against charcoal makers to deter the latter from cutting trees. In some occasions, the people participate in the tree planting initiatives of local barangay councils towards reforesting the foot of Mt. Mayon. Each time there is news of a coming typhoon, the *purok* (zone) system becomes an effective mechanism for early warning system. The Barangay Council and the BDCC mobilize the *purok* leaders to serve as conduits of information about the situation. The *purok* leader leads in the evacuation of her/his *purok* members to safer grounds.

In addition, residents in the five communities developed particular sub-cultures of safety in response to typhoons and flooding. In Barangays Kinale and Balangibang, for instance, residents stacked plastic containers and styrofoam materials to serve as floaters in the event of flooding. In Barangays Bonga and Matanag, the residents keep emergency packs in preparation for an eventual evacuation during rainy seasons. Each pack contains clothes, blankets, mats, some canned goods, rice and noodles, water, flashlight, pots, matches and important documents wrapped in plastic.

In Barangay San Francisco, residents fastened their houses to the ground or to big trees with wires or ropes, and reinforced their roofs in preparation for the typhoon seasons. They also boiled drinking water during rainy seasons and during the onset of drought.

However, despite the role of *damayan* and *bayanihan* in building the participants' coping and adaptive capacities and resiliency, these practices have limitations, too. The cumulative damages due to recurring typhoons and flooding can be too much, and these indigenous social resources may prove to be inadequate in addressing the situation. Long-term institutional support is needed to sustain the gains contributed by community initiatives to ensure full recovery.

According to the respondents, the "return to normalcy" period was the most difficult part of their lives. With damaged livelihoods, no source of income, and no more relief aid available during the few weeks after the return to "normal life", they faced food insecurity. Material support from neighbors was also limited. Families were left to fend for themselves. Those whose farms were deeply buried in lahar sought employment while younger women and men looked for work as domestic helpers in neighboring communities. Many high school students stopped schooling to limit household expenses. A 19-year old participant from Barangay Bonga recounted that she and her sister quit school for a year to work as housemaids and returned to school as soon as the productivity of their farm was restored. A female participant from Matanag revealed her emotional ordeal when she had to leave her three-month old baby and sick husband to the care of her old mother as she worked as a domestic helper in Manila.



## **Conclusion and Recommendations**

As gleaned from the study, the indigenous practices of *damayan* and *bayanihan* played significant roles in the lives of the participants – in everyday survival, during typhoons and flooding, and in the early part of recovery from disasters. Both *damayan* and *bayanihan* served as coping mechanisms, as social resources and as adaptive strategies. They served as symbols of hope and as mechanisms of support in these poor rural communities. The practices contributed in fostering the participants' capacities, though limited, in developing internal resiliency, both at the individual and collective levels, in the early part of recovery and as mitigation measures.

However, despite the significant contribution of *damayan* and *bayanihan* in building the participants' resiliency, these indigenous practices have limitations, too. They are not enough, as any gain resulting from collective effort is easily eroded by the cumulative damages of recurring typhoons and flooding. Institutional support is needed to complement the peoples' efforts and to strengthen local capacities. External support is needed in the long-term recovery process.

Even then, the participants' repeated experiences of typhoons and flooding enabled them to develop local knowledge as well as coping and adaptive strategies in living with typhoons and flooding. Such a knowledge system is an important element that could be tapped for disaster risk reduction and management programs.

Given these conclusions, this study poses the following recommendations:

First, these indigenous practices can be tapped by local government units (LGUs) in mobilizing community people for disaster risk reduction and management. The spirit of volunteerism exemplified in *damayan* and *bayanihan* practices can be mechanisms to organize disaster preparedness structures in communities e.g., quick emergency response teams, disaster preparedness units, etc. In communities where these practices are no longer manifested, the LGUs can create programs to revive or enliven these practices for disaster prevention and mitigation.

Second, there is a need to strengthen the economic capacities of families to enhance their resiliency. Production and livelihood loans and skills training on alternative livelihoods towards creating multiple livelihoods are some concrete steps towards building secure livelihoods for farming households.

Third, since farming is weather/climate dependent, there is a need to encourage the farming households to cultivate disaster-resistant crops and vegetables to ensure food security in times of extreme events. This will enable them to have multiple livelihoods, either farm-based or not.

Fourth, as farming households are most vulnerable to natural hazards and the least capable to recover, there is a need to extend social protection to them that is attuned to their needs and work conditions. At the same time, support should not only be concentrated in emergencies but should also extend to the recovery period.

Fifth, local knowledge on various mitigation and adaptive strategies could be a source of information in designing disaster programs. For instance, the *purok* system that was utilized by residents as early warning mechanism can be explored as a mechanism for relief distribution. This will enable community members to have control over the decision-making and distribution of relief support.

Finally, the spirit of volunteerism fostered by the practices of *damayan* and *bayanihan* can be used as springboard for organizing people and establishing permanent people-based structures in communities. Through the formation of strong organizations, the resiliency of the poor can be strengthened. The formation of strong organizations like people's cooperatives or community-based livelihood organizations can be a strategy in developing sustainable livelihoods. Developing sustainable livelihoods can help strengthen the people's capacity and resilience to disasters.

## References

- Agence France-Press Associated Press. (2006, December 2). Natural disasters' impact worsened by poverty—analysts. *Philippine Daily Inquirer*. Retrieved on November 27, 2011 from <http://www.inquirer.net/specialreports/leyte/landslide/view.php?db=1&article=20061202-36026>
- Aguiling-Dalisay, G., Yacat, J. & Navarro, A. (2004). *Extending the self volunteering as pakikipagkapwa*. Quezon City: Center for Leadership, Citizenship and Democracy, National College of Public Administration and Governance, University of the Philippines-Diliman.
- Asian Development Bank (ADB), Canadian International Development Agency (CIDA), European Commission (EC), National Commission on the Role of Filipino Women (NCRFW), United Nations Children's Fund (UNICEF), United Nations Development Fund for Women (UNIFEM), United Nations Population Fund (UNFPA). (2008). *Paradox and promise in the Philippines: A joint country gender assessment*. Philippines: ADB, CIDA, EC, NCRFW, UNICEF, UNIFEM & UNFPA.
- CBDRM Training and Learning Circle-Philippines (2009). *Integrating gender into community based disaster risk management training manual*. QC: CBDRM Training and Learning Circle-Philippines.
- Downing, T. & Franklin, S. (n.d.). *Poverty and vulnerability programme GECAFS project*. Stockholm Environment Institute.
- Enriquez, V. (1994). *From colonial to liberation psychology: The Philippine experience*. Manila: De La Salle University Press.
- Kozel, V. & Parker, B. (n.d.). *Understanding poverty and vulnerability in India's Uttar Pradesh and Bihar: A mixed method approach*. World Bank. Retrieved on June 27, 2010 from <http://www.google.com.ph/url?sa=t&source=web&>

cd=2&ved=0CCEQFjAB&url=http%3A%2F%2Fwww.utoronto.ca%2Fmcis%2Fq%2Fpapers%2FIII\_Kozel.pdf&rct=j&q=vulnerability+poverty&ei=On0oTIHaC8GErAeA06HPBA&usg=AFQjCNFf12IC8MijcaGQLf3wIP3hcbG\_7w

Luna, E. (2003). Endogenous system of response to river flooding as a disaster subculture: A case study of Bula, Camarines Sur. *Philippine Sociological Review*, 51, 135-153.

Luna, E. (1999). Community disaster management as an area of study and practice in community development. *CSWCD Development Journal*, IV (1), 1-26.

Luna, E. (1997). From victims to partners: Reflection on people's experiences in community disaster management. In University of the Philippines and International Center for Medical Research, *Papers and Proceedings International Symposium on Disaster and Health*. Manila: University of the Philippines Manila.

Marianti, R. (2007). *What is to be done with disasters? A literature survey on disaster study and response*. The SMERU Research Institute, Jakarta, Indonesia.

MICRODIS. (n.d.). *Albay, Philippines*. Retrieved on December 7, 2011 from <http://www.microdis-eu.be/content/albay-philippines>

Peacock, W., Kunreuther, H., Hooke, W., Cutter, S., Chang, S. & Berke, P. (2008). *Toward a resiliency and vulnerability observatory network: RAVON*. Retrieved on June 27, 2010 from <http://www.nehrp.gov/pdf/RAVON.pdf>

Sapirstein, G. (2006, October 26). Social resilience: The forgotten dimension of disaster risk reduction. *Jamba*, 1(1), 54-63. African Centre for Disaster Studies, North-West University. Retrieved on November 27, 2011 from [http://www.acds.co.za/jamba/Jamba\\_vol1\\_no1.pdf#page=61](http://www.acds.co.za/jamba/Jamba_vol1_no1.pdf#page=61)

Tandon, A. & Hasan, R. (2005). *Conceptualizing and measuring poverty as vulnerability: Does it make a difference?* Economics and Research Department Policy Briefs s.41, ADB.

*Tarabang para sa Bicol, Inc. (TABI) Annual Report 2009.*

UNDP and EMB-DENR. (1996). *Training manual in environmental planning and management for sustainable development.*

Virola, R. (2009). *The devastation of Ondoy and Pepeng.* National Statistic Coordination Board. Retrieved on November 27, 2011 from [http://www.nscb.gov.ph/headlines/StatsSpeak/2009/110909\\_rav\\_mrsr\\_typhoons.asp](http://www.nscb.gov.ph/headlines/StatsSpeak/2009/110909_rav_mrsr_typhoons.asp)

World Bank and National Disaster Coordinating Council. (2005). *Natural disaster risk management in the Philippines: Enhancing poverty alleviation through disaster reduction.* World Bank.

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