

# **Prevailing Perceptions about People's Participation in Disaster Management in Two Barangays in Metro Manila**

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*This study was an attempt to look into how barangay officials continuously engaged the residents in DRRM activities in Santolan, Pasig and Tumana, Marikina. Using various data gathering methodologies, one area explored was the perceived notions of the local government department heads, members of the local disaster coordinating council, non- government and people's organization representatives (key informants) and those of the residents vis-à-vis the perspective about community participation promoted by the research team.*

*The data generated from the nineteen key informants and one hundred purposively chosen dwellers would provide valuable learnings not only to local officials but also to development planners and practitioners. It would enhance their understanding about the many facets of eliciting and sustaining the residents' active involvement in disaster risk reduction and management at the barangay level. As was earlier mentioned, the results might impact in reducing disaster risks and minimizing the costs of destruction in the localities.*

## **Introduction**

Climate change and the more frequent occurrence of natural disasters are results of human excesses in the utilization of the environment. The effect on the ecosystem and the lives of people is serious and has been felt worldwide. Thus, there is an urgent need to address this problem in a systematic and holistic manner which involves people in ensuring their safety and well being.

A number of documents showed that as early as 2000, the Philippine government, civil societies and social scientists have been engaged in mitigating the impact of natural disasters on the country. Even so, the intensity and the magnitude of natural disasters which occurred in the recent years caught everyone unprepared. The situation brought to light the inadequacy of current disaster responses due to lack of timely information, rescue equipment and evacuation site facilities. At the household level, the lack of disaster awareness and preparedness also contributed to the extensive physical damage and lives lost. Damage to property, infrastructure and loss of livelihood, among others, also amounted to millions of pesos.

In communities where the barangay-level disaster coordinating councils had been unable to address the crisis, it is the people themselves who struggled to respond to the needs of their families and neighbors. Impromptu communication and tracking systems were set up, as well as rescue operations. These efforts were spontaneous and voluntary, however not always sustained. Specifically, follow through actions involving disaster mitigation activities did not receive the same level of support from residents as disaster response. This was pointed out in the post-disaster documentation of Oxfam assisted projects. People were lukewarm to the setting up of early warning systems, and in utilizing and maintaining disaster mitigation technologies and equipment in their locale. One factor identified was the different valuation of community participation in disaster risk reduction and management (DRRM) by the local Government executives and stakeholders.

Thus, there is a need to determine the reasons for the waning enthusiasm in carrying out disaster response — especially disaster mitigation — activities on a long-term basis. How local government units are strengthening and sustaining community involvement in disaster risk reduction and management was the area explored by this study.

## **The Value of Engaging the Community**

*A Study on the Institutionalization of People's Involvement in Disaster Management by Local Government Units in Two Barangays in Metro Manila* was an attempt to look into how barangay officials continuously engaged the residents in disaster risk reduction and management (DRRM) activities in Santolan, Pasig and Tumana, Marikina. The data gathering methods used were:

- a. 19 key informants interviews with local government department heads, members of the local disaster coordinating council, non-government and people's organization representatives;
- b. survey conducted with 100 residents purposively chosen from the two barangays;
- c. focus group discussions with willing survey respondents

The study compared the perspectives of the local stakeholders (local government department heads, members of the local disaster coordinating council, non-government and people's organization representatives and residents) on community participation with that which is promoted by the research team.

The research team also explored the perspectives and attitudes of the local stakeholders on participation in DRRM programs, projects and activities.

It is expected that the data generated from the 19 key informants and 100 residents will provide valuable lessons not only for the local officials but also to development planners and practitioners. Furthermore, the study can contribute to the understanding of the factors in eliciting and sustaining people's active involvement in DRRM at the barangay level. This in turn may lead to improvements in developing local DRRM guidelines and actions

### **Inclusive DRRM: Empowering the Community**

The emphasis on community participation as an integral component of disaster risk reduction and management is found in both international and Philippine literature. For instance, in the report of the Partnerships for Disaster Reduction-Southeast Asia (2008), it was pointed out that there should be a sharing of leadership and responsibility by government officials with the people, which in turn necessitates the presence of clear structures and processes for participation.

Similarly, Pandey and Okazaki (n.d.) observed that there were community-based programs and projects that could not take off not only because there was lack of participation but also capacity building of the people to deal with disasters was missing. In this situation, decisions were mostly imposed on people who were regarded as "victims" and "receivers" of aid. This was not effective in the long run (p. 2). The recent experiences in the Philippines also indicated that during disasters, communities which were caught unprepared suffered the most in terms of lost lives and damages to property, infrastructure, and livelihood, among others. Poor communities also had a harder time recovering from the impact of calamities.

One important element in organizing work is people's participation. Researches show that a development effort where people take responsibility for community action creates greater impact on the well-being of residents as well as the neighborhood. There is also a large chance that an initiative will be sustained if this is owned by the people (CSWCD, 2010). Pandey and Okazaki (n.d.) also pointed out the other elements of community involvement in addition to participation: partnership, empowerment, and ownership by local people (p. 2). This will entail, among others, putting the at-risk population at the center of identification, treatment, monitoring and evaluation of risks (Puzon-Diopenes & Murshed p. 15) and their having access and control of resources and basic social services to prepare themselves against disaster (Pandey & Okazaki n.d., p. 4). The participation of the scientific community is also important.

In 2010, the Philippine Congress enacted Republic Act 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010. The law clearly recognizes the importance of people's inclusion in the management of disaster programs and projects. It also expanded the use of the 5% fund allocation from the estimated revenue from regular sources to include, among others, capability building activities for communities (Section 21, Local DRRM Fund).

### **Community Participation in Disaster Management**

The results of the data gathering support the findings of earlier studies on community participation in DRRM.

#### **A. Response to Disasters**

Both the local officials and the residents were aware that Barangays Marikina and Santolan are located in disaster-prone areas. These communities experience flooding and fires every year. The local governments also have systems and procedures in managing hazards, as well as an established Disaster Coordinating Council and a Rescue Center.

Despite this, the local governments were inadequately prepared for the fury of Typhoon Ondoy in 2009. The effects on both communities were devastating. Water levels rose even in areas which had been previously unaffected by floods. As the flood receded, one saw the chaos everywhere: people moving about not really knowing where to go and destroyed houses, structures and other debris scattered all over these places. Community life was disrupted as well. There were no business transactions going on. Schools and offices were closed.

The residents united to provide various support to their more needy neighbors. They helped evacuate families, prioritizing the more vulnerable groups such as the elderly, sick pregnant women and children. Using whatever materials they have on hand, they constructed bridges so people in already submerged communities can move from roof to roof to safer areas. They also shared whatever

food and other basic necessities with each other. Many noted the *bayanihan* spirit among Filipinos in that time of crisis, as well as the Filipino selflessness and resourcefulness.

The people interviewed forwarded the following lessons from the the Typhoon Ondoy experience: (1) to be prepared for any eventuality meant actively seeking information, taking initiative to build their capabilities and following the ordinances and issuances of the government and (2) it is important that the residents are organized to deal with the disaster in a systematic manner.

#### **B. Community Participation in DRRM from the Perspective of Local Executives and Residents**

As earlier stated, the research team analyzed the data from the viewpoint of empowerment. "Empowerment" was defined as a condition whereby residents and the local government officials alike are involved in establishing and managing structures set up to respond to and mitigate the effects of disasters. This entails people's active engagement in decision-making processes and leadership roles. They have access to and control over resources and can initiate actions to realize community development goals and objectives. This perspective of empowerment is in line with Republic Act 10121 which stipulates that all sectors and stakeholders at all levels, especially the local community should be involved in DRRM.

The data gathered showed that most of the key informants and residents value community involvement and were agreeable to people having an active role in dealing with calamities. In fact, in both areas, the general perception of the local officials and some residents was that the residents have been engaged in disaster related activities in their localities from the beginning. The observation that the people's participation had not been widely sought or maximized came mainly from NGOs and people's organizations in the two cities. According to these groups, the participation of residents in DRRM are only sought during calamities (e.g. to keep peace and order in evacuation centers) and in post-calamity community clean up drives.

### ***1. A Closer Look at the Perspectives Presented***

There are three divergent perspectives and attitudes on people's participation in DRRM as surfaced in the data gathering i.e. that of local government executives, the of civil societies and the community residents.

#### ***Local Chief Executives***

The local chief executives (e.g. city and barangay officials) have a more centralized system of governance in mind with regard to DRRM. In this system, local executives and their staff plan and decide on policies, programs, services and activities which are then disseminated to the communities for implementation. The residents have an assistive role i.e., they provide the workforce to implement the program in times of disasters.

This view on community participation has more proponents in Pasig than in Marikina. Majority of those interviewed in Pasig cited the residents' attendance in activities like trainings and community meetings conducted by local government offices or NGOs, as well as their compliance to and observance of legislations and policies, as examples of people's participation in DRRM at present. The trainings and awareness-raising activities were conducted by the local officials for the residents mainly to enable them to deal with disasters. They also mentioned the valuable support of the community during Typhoon Ondoy's disaster and post-disaster operations as volunteers or workers under the "food for work" arrangement. One local government official remarked that the implementation of plans would be smoother if people did their part. For instance, the evacuation and rescue operations would be facilitated if people living in the danger zones voluntarily went to the evacuation centers, and followed procedures in getting their food and relief goods.

In Marikina, a respondent raised the point that involvement of too many people may prove to be inefficient in the long run. From their experience, the active involvement of various sectors in planning of disaster-related programs and policies became difficult because organizations and stakeholder groups have different

views and pushed their agenda on others. Another interviewee said that residents should only serve as volunteers assigned to tasks which they can do best. Another point was raised about looking into the implications of having volunteers in high-risk work such as rescue operations because the local government currently has no provisions such as health or life insurance for them.

### ***Non-Government Organizations (NGOs) and Other Civil Society Groups***

Another view that emerged from the interviews was the **active engagement** of residents in disaster risk reduction and management. This view was espoused mainly by NGOs and people's organizations as well as by some residents, particularly in Marikina. They viewed participation as having access to information and being actively involved in planning. This practice would lead to more comprehensive plans since the residents are more knowledgeable about their situation and their needs. Furthermore, this would lead to more efficient disaster response because people's participation will enable the LGU to focus on the more vulnerable groups and pressing issues. It was recommended that there should be an organized system of putting into practice the inclusion of the residents in disaster risk reduction and management.

A key informant from Pasig had the same view, adding that people's participation will lead to a more effective and efficient DRRM. Task assignments will be clearer and the work will be more organized. Transparency will also be facilitated as more people are informed of plans and the use of resources. Another interviewee also said that people are willing and will be enthusiastic to participate in a program which has clear directions and gains for the present and future generations.

### ***Residents***

Most of the residents interviewed for the study said that they were not involved in the planning of disaster-related endeavors. In Marikina, residents



cited their preoccupation with their livelihoods and view that DRRM is the responsibility solely of the local government as the reasons for their non-involvement in the DRRM planning process. Pasig residents on the other hand opined that their local officials were not receptive to the idea of them proposing and implementing projects in their own communities. The LGU would be even less enthusiastic to fund their proposals.

Residents in both barangays had been engaged in "assistive tasks" in local DRRM efforts: information campaigns, rescue operations and distribution of relief goods; maintaining cleanliness and order in the evacuation centers; and assisting in the rehabilitation of their communities. As with the NGO and other civil society groups, majority of the residents interviewed believe that much is to be gained in their participation in DRRM, and not only in the assistive role. They believe that local officials should be open and value suggestions from the community and actively engage them in all phases of the planning and implementation process.

## ***2. Enhancing the Concept of Participation***

As part of the initiative to contribute further to the institutionalization of people's participation in disaster risk reduction and management, the research team tried to develop a measure for this subject area using statistical procedures. The results as indicated below showed some significant associations.

### ***2.1. Establishing Associations between Pairs of Variables***

Using the Pearson chi square test, the results showed no significant association between the ages of respondents and membership in barangay level organizations; the ages of respondents and membership in the Barangay Disaster Coordinating Council (BDCC); the membership in the BDCC and number of years residing in the area; and the reasons for respondents inability to assist and presence of vulnerable members in the family

In the other pairs of variables tested, the outcome revealed the following:

- a. The relationship between the membership in the BDCC and participation in disaster management was statistically significant at .05 level of significance; i.e. membership in the BDCC increases the participation of residents in disaster management.
- b. A statistical significance (0.021) was also found in the association of the participation of respondents in the management of the evacuation site and educational attainment. There was a moderate positive association (0.463 in Pasig and 0.567 in Marikina) using the test of Phi and Cramer's V. This meant that to some extent, residents with higher educational attainment participated more in the management of the evacuation site.
- c. With regard to the participation of respondents in the management of the evacuation site and the number of years residing in the area, the findings revealed no statistically significant association in the overall data set. However, in the data set grouped by location, a significant association was found in Marikina (0.013). Cramer's V statistic also implied a moderate positive association (0.411) meaning that to some extent, those who resided for a longer period of time in Tumana tended to help in the management of the evacuation site.

The results of the cross tabulated data and their possible explanations are below:

A sizable number of women respondents (35) relative to men (7) attended the different trainings conducted by the *barangay*. This can imply women's level of awareness regarding the various aspects of disaster related concerns covered by the subject areas increased. These respondents should be considered a resource to be tapped in the pre- and during disaster activities to enable them to utilize the

knowledge and skills acquired from these activities. Their membership in teams and committees should be sought.

- Out of the 42 respondents who attended the trainings, 31 assessed themselves as prepared to handle eventualities. There were also 40 respondents in the survey who were not aware of and did not attend the trainings conducted but assessed themselves to be ready to deal with disasters. A possible explanation for this finding is that those who attended the trainings had actively disseminated what they learned to the community. It is also possible that these people had received or gathered information from other sources (e.g. mass media).
- Out of the 42 respondents who attended the trainings, 31 respondents assessed their local government officials as prepared to confront the challenges that future hazards may bring. As previously stated, the appreciation of their leaders' readiness by the forty respondents who did not attend the capability activities might be due to their vigilance and concern observed by the residents.
- The respondents acknowledged that their local government acted on disaster-related issues before, during and after the disaster struck. About 41 percent indicated receiving support from the local government prior to the disaster, 40 percent during the disaster, and 76 percent in the post-disaster period.

Some people also acknowledged that while barangay officials may not have disaster-related programs, they were active in other community development projects [insert percentage of responses] (See Tables 1 to 3)

**Table 1. Concrete Action of Barangay BEFORE disasters and Respondents' Assessment of the Barangay's Preparedness**

Concrete Action of Barangay - Before	Respondents' Assessment of the Barangay's Preparedness			Total
	Not prepared	Somewhat prepared	Prepared	
Make plans/prepare for people's evacuation	5	11	26	42
Capability building	0	0	2	2
Clean drainage/culverts	0	1	3	4
Others	0	0	1	1
None	2	1	19	22
No response	0	4	16	20
Not Applicable	1	2	7	10
Total	8	19	73	100

**Table 2. Concrete Action of Barangay DURING disasters and Respondents' Assessment of the Barangay's Preparedness**

Concrete Action of Barangay - During	Respondents' Assessment of the Barangay's Preparedness			Total
	Not prepared	Somewhat prepared	Prepared	
Monitored water level and advised residents to evacuate	2	2	10	14
Provided rescue assistance	2	9	22	33
Provided relief goods	0	0	3	3
None	3	3	16	22
Others	0	0	4	4
Don't know	0	1	0	1
No response	1	4	19	24
Total	8	19	73	100

**Table 3. Concrete Action of Barangay AFTER disasters and Respondents' Assessment of the Barangay's Preparedness**

Concrete Action of Barangay - After	Respondents Assessment of the Barangay's Preparedness			Total
	Not prepared	Somewhat prepared	Prepared	
Initiated the cleaning and maintenance of the surroundings	2	10	28	40
Capability building/awareness raising	1	2	5	8
Provision of relief goods/equipment/social services	3	9	29	41
Others	0	2	9	11
None	0	0	1	1
No response	1	0	4	5
Not Applicable	1	2	7	10
Total	8	19	73	100

- Only four of the 42 who attended the trainings were members of the BDCC, all of them were from Pasig. This implies there are residents who can be potential educators or managers of the community's disaster related programs and services, apart from those already members of local councils.

## ***2.2 Exploring Significant Relationship of Selected Variables to Participation***

This section attempts to identify variables significantly affecting people's participation in DRRM using multivariate logistic regression method. The variables studied were: Barangay action; age\_of household heads; family size; location; assessment of self preparedness; assessment of barangay preparedness; presence of organization; assessment of relief assistance; respondent's stay in the evacuation site; presence of vulnerable family members; sex and education.

*a. Participation of Residents in the Management of an Evacuation Site*

**Table 4. Participation of Residents in the Management of an Evacuation Site**

Variable	Estimate	p-value	Odds
Intercept	3.337	0.000	
Barangay action	1.344	0.000	3.835
Age of household heads	-0.023	0.007	0.978
Family size	-0.086	0.028	0.918
Location	0.510	0.000	1.665
Assessment of self preparedness	-0.012	0.951	0.988
Assessment of barangay preparedness	-0.087	0.606	0.917
Presence of organizations	-0.220	0.025	0.803
Assessment of relief assistance	-0.287	0.004	0.751
Respondent's stay in the evacuation site	0.030	0.012	1.030
Presence of vulnerable family members	0.142	0.182	1.153
Sex	1.543	0.000	4.677
Education	-0.521	0.000	0.594

Below are the significant relationships (p-value <0.05) found in the statistical analysis of the variables in Table 4 using odds = estimates:

- The odds that a household will participate in the management of an evacuation center are three times higher for those who think that the barangay made effort to prepare for impending eventualities.
- The odds that the household head will participate in the management of an evacuation center decreases by 0.918 as family size increases.
- Those residing in Pasig have higher odds for participation (1.665 higher than in Marikina). One possible explanation for this is the relationship between the local government and the residents i.e., the relationship between the LGU and Tumana, Marikina residents are strained over a land ownership issue.

- Those with knowledge about organizations have fewer odds for participation. As relief assistance “increases” (becomes negative), the odds for participation decreases by 0.751.
- As the length of stay in the evacuation site increases odds for participation increases by 1.030 times.
- The odds for participation is higher for females than for males (i.e., 4.677 higher).
- As educational attainment increases, participation decreases by almost half(0.594).

**b. Participation of Residents in Relief Operations**

**Table 5. Participation of Residents in Relief Operations**

Variable	Estimate	p-value	Odds
Intercept	-1.147	0.229	
Barangay action	-0.068	0.869	0.935
Age_of household heads	-0.009	0.293	0.991
Family size	-0.066	0.050	0.936
Location	-0.413	0.000	0.662
Assessment of self preparedness	0.927	0.000	2.527
Assessment of barangay preparedness	-1.222	0.000	0.295
Presence of organizations	0.436	0.000	1.546
Assessment of relief assistance	-0.277	0.020	0.758
Respondent's stay in the evacuation site	0.032	0.014	1.032
Presence of vulnerable family members	1.122	0.000	3.070
Sex	-0.248	0.083	0.781
Education	0.115	0.088	1.122

Below are the significant relationships (p-value <0.05) found in the statistical analysis of the variables in Table 5 using odds = estimates:

- Similar to the family participation in evacuation centers, their participation in relief operations becomes less likely as the family size increases.
- The odds for participation in relief operations is lower in Pasig as compared to Marikina by a little more than half (0.665 times).
- As the residents' self-assessment of their being prepared increases, the odds for participation in relief operation also increases by 2.527 times.
- Participation in relief decreases by 70.5 percent as the residents' assessment of barangay preparedness increases. This may be especially true if barangay officials view residents as victims or disaster as suggested by Abarquez and Murshed (2008). As shown in a number of cases studied by Abarquez and Murshed (2008), paternalistic governance, the *top-down approach* in the management of programs and projects, strengthened the dependence of the residents towards the government.
- Those with knowledge of organizations are more likely to participate in relief operations by 50 percent than those who have no knowledge of organizations.
- As the assessment of relief operations becomes negative, the chance for participation in the undertaking decreases by 24.2 percent. Again, residents will be less likely to involve themselves in endeavors which they feel dissatisfied with.
- Participation increases by 3.2 percent as the length of residency in the area or city increases. As previously mentioned, the more rooted a family is to the community, the more the household is willing to invest time and effort for its improvement.



- Presence of vulnerable members in the household increases the odds of household head's participation in relief by three times. Household heads may be more willing to help in the operation because they have individuals who are more in need of goods and services in the relief and recovery phases of disaster.

*c. Participation of residents during disasters*

**Table 6. Participation of residents during disasters**

Variable	Estimate	p-value	Odds
Intercept	-0.646	0.413	
Barangay action	0.525	0.067	1.691
Age_of household heads	0.010	0.201	1.010
Family size	0.120	0.000	1.127
Location	0.083	0.349	1.087
Assessment of self preparedness	0.315	0.067	1.371
Assessment of barangay preparedness	-0.512	0.000	0.599
Presence of organizations	-0.457	0.000	0.633
Assessment of relief assistance	-0.110	0.248	0.896
Respondent's stay in the evacuation site	-0.015	0.154	0.985
Presence of vulnerable family members	0.278	0.139	1.320
Sex	0.901	0.000	2.463
Education	0.264	0.000	1.302

Below are the significant relationships ( $p\text{-value} < 0.05$ ) found in the statistical analysis of the variables in Table 6 using odds = estimates:

- The chances of a household head to provide help during disaster increases by 12.7 percent as family size increases. From the accounts of the respondents, they felt that the disaster situation itself compels them to be involved especially in the rescue operations.

- Participation during disasters is likely to decrease by 40 percent as the respondents' assessment of barangay preparedness increases.
- Those with knowledge about the existence of organizations working on disaster related issues have a participation rate 36.7 percent lower than those who have no knowledge.
- Females are more than twice as likely (2.463) to participate in various relief operations during disasters than males. This may be attributed to women's socialization to care for others and volunteer their help when they see the need for it.
- Participation also increases with educational attainment by 30.2 percent

### **Broadening the Perspective to Sustain Community Participation in DRRM**

The LGUs should be at the helm of managing any crisis situation in their locality, including natural disasters. But residents also have a stake in their communities, and they are more than willing to contribute in preventing and dealing with the disasters. This has been the realization of the government which it has since then institutionalized in Republic Act 10121 or the Philippine Disaster Risk Reduction and Management Law. Moreover, government has enjoined its leadership to mainstream the participation of communities in these initiatives. Funds were also allocated to make this shift in perspective operational.

Many studies have shown that people's participation in community development triggers a multiplier effect on communities and the nation as a whole. Particularly in disaster management, research data show the active participation of an informed citizenry is critical. More harm resulted when communities were caught unprepared. Government initiatives will go to waste if there are no organized and systematic plans to guide the constituents in preparing for disasters, as well as in rescue, relief, recovery and rehabilitation operations.

The findings of this study support these previous researches. The data revealed that people willingly helped at varying levels and to the extent that their capacity and time allowed as long as they clearly understood what the activity was all about, why it was being conducted and what it would bring to the community. However, local officials tend to be more centralized in their system of governance i.e., according to them, they should be the ones to decide on and initiate DRR programs, projects, services and activities, with the residents only taking part as the workforce for these. Although this perspective is being changed to be in line with the provisions of the DRRM Law, the study findings from Tumana, Marikina and Santolan, Pasig show that much is still to be done in terms of eliciting and institutionalizing residents' participation in disaster management.

From the data generated, the following could be concluded:

1. The prevailing view on DRRM is hierarchical. Local officials conceptualize legislations, programs and projects which were then disseminated to barangay officials, then to residents for implementation.
2. Participation of the residents was elicited mainly during disasters periods which shows its reactive, one shot and assistive nature.

To strengthen and institutionalize the involvement of residents in DRRM, the following recommendations are presented:

***A. Addressing Disaster Concerns from a Holistic Perspective***

Disaster risk reduction and management should be addressed from a holistic perspective. This means that local officials should view and address disaster management, including the concern of increasing people's participation, vis-à-vis other community issues. For instance, in Tumana, residents will be more likely to invest their time and effort in barangay activities if the land ownership issue will be settled as soon as possible. Thus, this is one area of concern that the local officials should focus their efforts on as they prepare the households for natural disasters. Local officials should also be united

in their leadership to get the cooperation of the different political and cultural groups. It is important that they are seen to be working for the interest of the whole community and not for their personal or political party's agenda.

In Pasig, one of the challenges for the local officials is the strict enforcement of environmental compliance laws especially as regards the booming real estate development in their city.

***B. Changing the paradigm of local officials and residents regarding community participation***

**1. Barangay:**

The barangay is central in implementing the disaster-related directives of the city government. However, it does not preclude its officials from supporting or developing innovative programs or projects to protect its constituents, improve their quality of life, and enhance their adaptation to climate change. There are benefits that may accrue to the community if barangay officials will take action on these concerns.

- a. The local officials should encourage more community participation. There are already Filipino values which facilitate people's active involvement in times of crisis such as *damayan*, *bayanihan* spirit, and cooperation. The challenge lies in increasing the awareness and capabilities (particularly of the residents) on disaster management, and the importance of being proactive in dealing with these events. This might be done by:
  - Putting in place and strengthening the barangay level DRRM structure, with the representatives of the various existing organizations in the community as officers, committee heads or members. Policies on representation need to be developed and institutionalized in practice.

- Developing with the residents a comprehensive disaster management plan . The advantages of involving people in the drafting of a disaster management plan are: (a) the barangay will have an updated disaster-related database; (b) the residents will be more aware of the environmental risks in their community and their own capacities, and the resources that they have to address these; and (c) people will identify and own actions to mitigate the effects of disasters.
  - Regularly and systematically conducting trainings, information dissemination and other activities to sustain the interest of the community residents in disaster-related concerns. Trainings and information dissemination should not only be done to enable them to act when faced by catastrophes but also to actively engage them in the planning and implementation of programs and projects. To encourage residents to attend, their time availability has to be considered.
  - Disaster activities may be opportunities for job generation especially for residents in need. Funds for this purpose may be explored by the leaders. This move is in appreciation of the valuation of work principle. Some residents may be tapped for DRRM tasks and be paid for their work. Clear job descriptions and qualification and selection criteria are important.
- b. They should have the political will to pursue the active engagement of residents in preparing for and managing disasters.
- c. Together with the city officials, barangays should link with social and natural scientists to widen their perspectives and access to information and technologies in addressing disaster-related issues like safety and food security.

- d. With the assistance of the other groups, barangays should advocate that the business sector and other government officials to respect existing agreements, legislations and policies that ensure the safety and wellbeing of their communities.
- e. The barangay officials should strengthen their monitoring and evaluation systems so that the implementation of programs and projects will redound to the benefit of the community.
- f. There is a need for local officials to provide residents with opportunities to develop their own disaster management programs and projects as well as give fund support for their implementation. This will encourage them to participate and improve their capacities to meet expectations. This move will develop the self-esteem of the people as well as their ability to earn for themselves.

## **2. Purok/Block Level**

The vibrancy of a community can be seen in the unified effort of its constituents to make their place safe and livable. The organization of groups at the smallest unit of governance actively working together for common goals and objectives is something the local officials have been working hard to achieve.

In the two barangays, officials can utilize the existing *purok* or block systems not just in disseminating information about local programs and activities but also in encouraging and supporting people's participation. In this community-based approach in disaster management, continuous organizing should be done with the help of the disaster teams and other volunteer groups.

- a. A list of residents indicating their particular skills as well as their intention to volunteer is an important material that the *purok* leader should have for reference.

- b. Under the leadership of the *purok*/block leader, the residents can be engaged on a continuing basis in data collection and knowledge generation which are important in coming up with relevant programs that will enable their communities to prevent or lessen the possible effects of hazards and help in creating adaptive strategies to cope with the changing situation. Some important documents that a community can prepare:
  - Hazard Assessment / Hazard Mapping
  - Vulnerability Assessment and
  - Capacity Assessment
- c. A pool of trainers has to be organized at the *purok* level and equipped with the required knowledge and skills to determine the capacity requirements of the residents and ably and continuously teach them.
- d. The Information Dissemination Committee which will see to it that the households are regularly informed about disaster-related matters should be set up.

### **3. Household Level**

Households should be informed about disasters and its effects on their families and communities. Some of the practical information that households should know in times of natural disasters are how to monitor water gauges, what to do and where to go in case of a disaster. They should have survival kits containing necessary goods and supplies. They should also comply with LGU advisories regarding emergency measures, including evacuation of their houses if necessary.

### **C. Further Research Undertakings**

Similar researches may be undertaken in the future to test out the models using the multivariate logistic regression analysis with a bigger, randomly selected sample size. The results may be generalized to include a bigger population. The results can contribute greatly to inform officials, development planners and workers at the local level on factors to consider to encourage more participation from the residents in community activities.

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