Knowledge, Attitude and Practices on Disaster Preparedness of Coastal Barangays in the Municipality of Pilar

Cathy Joy C. Bargo, Raul D. Bunda, Evelyn B. Borgonia, Marcela C. Buenvenida, Jennifer P. Benliro, Rafy Parpa & Rechiel Verbo
Capiz State University - Pilar Satellite College

Abstract

Disaster preparedness refers to measures taken to prepare for and reduce the effects of disasters. That is, to predict and, where possible, prevent disasters, mitigate their impact on vulnerable populations, and respond to and effectively cope with their consequences (IFRC, 2019). This study was conducted to determine the knowledge, attitude and practices on disaster preparedness of coastal barangays of the Municipality of Pilar, Province of Capiz. It involves 222 respondents from the five coastal barangays of Pilar namely; Binaobawan, Natividad, Poblacion, San Ramon and Casanayan. Frequency and percentage were used in analysing the results which showed that respondents were both male and female, aged 41-51 years old, high school graduate, unemployed and having a monthly income of Php 5,000 and below. People in coastal barangays of the municipality of Pilar have knowledge on the natural hazards and the danger they face in their communities. Almost all people in coastal barangays have access to early warning systems via radio and TV although barangay officials have organized way to warn people about the incoming disaster. The people showed various ways to prepare for natural disasters within their own households, however, structured preparedness mechanisms within the community are substantially fewer apparent as perceived by the respondents: very few people reported never taking part in disaster preparedness drills and weakness in risk assessment was manifested. Respondents understood who is responsible for doing what when disasters happen in their area but many of them just somewhat understood or did not understand at all.

Corresponding author: Cathy Joy C. Bargo
Address: Capiz State University - Pilar Satellite College, Pilar, Capiz
E-mail: Bargocathyjoy@gmail.com

Introduction

The Philippines shares with several Asian countries the unwelcome distinction of being among the world's most disaster - prone societies. The Center for Research and Epidemiology of Disasters in Belgium recorded a total of 701 disaster incidents from 1900 – 1991, or almost 8 disasters a year. For period 1987 to 2000, the National Disaster Coordinating Council (NDCC) recorded 523 disasters or an average of some 37 disasters annually (OCD 2001) with damages amounting to a high Php 150.071 billion.

The National Disaster Risk Reduction and Management Plan (NDRRMP) fulfills the requirement of RA No. 10121 of 2010, which provides the legal basis for policies, plans and programs to deal with disasters. It covers four thematic areas, namely, (1) Disaster Prevention and Mitigation; (2) Disaster Preparedness; (3) Disaster Response; and (4) Disaster Rehabilitation and Recovery, which correspond to the structure of the National Disaster Risk Reduction and Management Council (NDRRMC). By law, the Office of Civil Defense formulates and implements the NDRRMP and ensures that the physical framework, social, economic and environmental plans of communities, cities, municipalities and provinces are consistent with such plan.

From the aspects of Community-Based Disaster Management which emphasizes the involvement of the entire family and the community, the study on measuring the knowledge, determining the attitudes, and identifying practices on disaster preparedness in coastal barangays of Pilar was conducted. In a secondary review of available records, it was identified that there was an absence of community-level data on people's awareness about key aspects of disaster management and mitigation. This resulted in a number of weaknesses in DRR planning at the municipality and barangay levels. Second, current emergency warning communication systems show weakness in dissemination of appropriately targeted information through relevant channels at the coastal barangays.

To address these gaps, the researcher conducted a "Knowledge, Attitude and Practices (KAP) study on Disaster Preparedness in Coastal barangays of the Municipality of Pilar" with the aim to provide a general overview of the knowledge, attitude, and practices for disaster preparedness of coastal barangays of Pilar, this study sought to find out the respondents' profile and the respondents existing knowledge, attitude, and practices for disaster preparedness in relation to: a) Natural hazards, b) Disaster impacts, c) Information sources, d) Household disaster preparation and management, e) Community preparation and management, and f) Roles and responsibilities in disaster management

Methodology

This study used both the quantitative and qualitative methodology in conducting the survey. The quantitative aspect involved the use of a survey questionnaire while the qualitative part involved collection of data through the

conduct of FGD and analysis of the data observed. This study was participated by 222 household representatives' respondents of the coastal barangays of Pilar namely: Binaobawan, Casanayan, Natividad, Poblacion, and San Ramon. Frequency and percentage were used in the interpretation of data collected.

Results and DIscussion

Socio-Demographic Profile of the Respondents

Gender. The distribution of respondents by gender indicates that female are more in number (146 or 65.77%) than male (76 or 34.23%). Most wives stay at home to take care of the household chores and their families. Thus, most respondents were females when the study was conducted.

Age. The total number of respondents is 222 with 51.80% of them aged 30-51 years old while (19 or 8.56%) constitute the youngest and smallest age group, 18 years old and below. The respondents over 60 years of age make up the smallest share of (17 or 7.66%). The average age of the respondents was 37. This implied that the highest percentage of respondents were in the middle ages which compose the highest percentage of the population of our country today.

Educational Attainment. Regarding education levels, 3 or 1.35% has no formal education, reported 169 or 76.12% reported receiving elementary and high school diploma and 50 or 22.53% are college level or college graduate. The data showed that the highest percentage of the respondents have finished high school education or have reached up to high school level.

Household Monthly Income. The data revealed that nearly half (108 or 48.65%) of the total number of respondents is in families that earn a monthly income of 5,000 pesos and below. This data concurs with the 2015 family income and expenditure survey by the Philippine Statistics Authority reported 90.99% families had below average family income. The PSA also indicated Poverty incidence among Filipinos at 26.3%, as of first semester of the same year.

Employment Status. Out of 222 respondents, the data showed 101 or 45.49% was unemployed, (18.47%) were employed and (26.58) were self-employed. The data show that there are large number of respondents who are not actively working. The 2018 PSA indicated that the unemployed persons numbered about 2.3 million resulting to an annual unemployment rate of 5.3 percent.

Knowledge on Natural Disasters

Kinds of disasters. When asked how many natural hazards they could identify, almost all (221 or 99.55%) of the respondents identified typhoons, and 80.63% identified tsunami, 79.28% identified storm surge. This is perhaps the people mistakenly identify storm surge as tsunami, given the fact that Pilar is more prone

to storm surge rather than tsunami. In the data reported by PAG ASA, around 20 storms visit the Philippines each year. This is possibly unsurprising given that a large majority of respondents identified typhoon as they encountered through several natural disasters over the course of their lives.

Disaster with biggest problem in the area. A great majority of respondents, 90.54% highlighted typhoons as a threat in the coastal barangays of Pilar as this is based on their previous experience especially the super typhoon that hit the municipality in 2013. Documentary evidences from the MDRRMO showed that large majority (89%) of the residents in coastal areas were totally damaged last Typhoon Yolanda in 2013, hence lose their livelihood and houses and suffers difficulty in starting their livelihood once again. Similarly, the geohazard map of Pilar, Capiz illustrated that vast part of Pilar is highly susceptible to flooding in the event that typhoon occurs. In the FGD, respondents from Binaobawan and Natividad predisposed that storm surge is a threat in the event of strong typhoons. Respondents 2: "Storm surge gid ya eh kay pag Yolanda gumulpi lang taas ang tubig kag naghampas diri asta diri sa plaza ang tubig."

Disaster experience. More than half (60.36%) of the respondents had experienced typhoons five times or more in their lifetimes. In addition, throughout their lives they have experienced several natural disasters.

Comparison to 30 years. When asked if the main hazard in their community had changed in frequency over the past 30 years, 46.40% said it had become more frequent, the respondents perceived that the interval between typhoons in particular had reduced over the past decade.

Causes of disaster. Among the respondents, majority (179 or 80.63%) cited that the natural disasters were caused by nature. It implied that mostly believed the natural disasters experienced in the Philippines were caused by nature which is beyond our control.

Disaster scale in the area. When asked how severe a problem the main hazard was for their communities, 67.12% of survey respondents felt that it was a severe or a large problem to their area, 32.88% said it was a moderate problem.

Priority on reducing the risk of disaster. When asked how big a priority addressing this hazard was, 63.51% said it was high priority which the respondents have willingness to do something to prioritize solving problems related to the hazards, 36.49% said it was a medium priority, and nobody said they would not prioritize this problem. FGD participants conform that disaster is a big problem in coastal areas hence should be given the highest priority on reducing the risk it poses to the community. Participant 4: "dapat padayunon ang pag construct sang seawall dira sa baybay kay maga protekta ina sa mga pumuluyo kag agud indi mag kabkab kag maglapad ang baybay". Participant 3: "Kon lantawon ta bala mam, ang baybay diri sa amon sang una malayo pa ya ina, subong lapit lapit nalang. Tungod kay kada

baskog sang tubig hay gina dala ya patunga ang balas.So dapat gid ya tagaan gid ini sang daku nga talupangud sang aton gobyerno."

Knowledge on Disaster Impacts

Effects of Disaster. Respondents were explored the possible impacts of natural hazards, mostly (95.04%) stated damage to houses Loss of income (92.79%), damage to infrastructure (78.38%) and debt (77.03%). The data showed that the respondents' knowledge on effects of disasters in their areas was mostly seen in their houses. This is because majority of the residents' residential houses in coastal areas of the municipality of Pilar are made of light or semi-concrete materials that were vulnerable to typhoons. The World Health Organization (WHO) reviews into the long-term effects of the twin disasters (Pepeng & Ondoy) in 2009.The study reveals that since 2009, the communities affected reported overall reduction in incomes due to loss of assets and working capital.

Infrastructure more affected by disaster. Data from the MDRRMC of the Municipality of Pilar provides further relative information on these broad impact categories. The most commonly cited infrastructure more affected by natural disasters by MDRRMC was damage to houses. In these five coastal barangays namely Natividad, Poblacion, San Ramon, Casanayan, and Binaobawan, it was reported that around 65% of the houses were totally destroyed by super typhoon Yolanda last November 8, 2013. Thus, 93.69% said that the infrastructures more affected in their area during disasters are the houses while 89.64% fishing resources were affected, 51.35% answered it the water and sanitation facilities, 45.04% said it is the trees, forest and orchards, and only 30.8% said that the farmlands are affected since the area is a little far from the farm.

Jobs more affected by disaster. When asked which livelihoods they felt were more vulnerable to natural disasters, top on the list are; 96.85% said fishermen for the reason that the main livelihood of the residents in the areas is fishing. In one San Ramon, older men explained how borrowing to replace assets had driven fishermen into debt, while in Binaobawan and Casanayan respondents explained that some fishermen had been driven out of their jobs entirely after losing their boats, forced either to start working as day laborers, or to migrate to other parts of province or country in search of work. Respondents also added that while suffering fishermen could expect to receiver placement boats and fishing gears from non-government organizations (NGOs) and the government, fishermen had done some negative coping mechanisms to augment their daily needs.

Jobs less affected by disaster. The survey data showed the men-in-uniform such as the military and policemen are less vulnerable jobs compared to other jobs as what the 90.59% of the respondents said. More than half of the respondents perceived fishermen as not vulnerable, although others disagreed, arguing that it was the first sector directly affected by a disasters especially typhoons, had fewer productive assets to lose, and said to be less vulnerable than those engaged in other

types of work.

People more affected by disaster. When asked which types of people they felt were more vulnerable to natural disasters, 86% said poorer people, 59.46% said older people, and 58.56% said people living in certain areas most especially within the 50-meter salvage zone or those whose houses are situated are within 50 meters from the coastline followed by 57.66% of people with disabilities and children respectively. Children and people with disabilities are very vulnerable during disasters because they have no capacity to protect themselves or to transfer to safer places if needed. The respondents also explained through the data that both children and old people were vulnerable. This was because both children and old people were more exposed to health risks and malnutrition in the conditions following a natural disaster.

People less affected by disaster. The data revealed that richer or economically-stable individuals & families are the least affected by disaster with 91.44%. The respondents said that this group of people in their community are least affected because most of their houses are made of strong materials and they have other resources and alternative sources of income if their main livelihoods are affected or devastated by disasters.

Changes in the area that make effects of disaster worse. Survey participants were asked to identify any changes in their area that might have made the impacts of natural disasters worse, 81.53% said deforestation, 65.77% answered the increase in population, 64.41% said building more houses and other infrastructures especially in unsafe places, The most frequently cited cause of more frequent hazards was deforestation which would eventually lead to climate change. Over development or poverty was causing a person to cut down too many trees, which was in turn perceived to be causing global warming and hence worsening hazards.

Attitudes towards Information Sources

Information sources. When asked about where they turned to for forecast information on natural disasters, 95.04% of survey participants cited radio, 91.89% said TV, 57.21% answered family and friends while, 30.18% municipal government, 23.87% alarm, siren, loud speaker and 21.62% from the army/police. The data showed that the primary source of information of coastal barangays in Pilar, Capiz is transistor radios and televisions. Majority of the respondents have radios and televisions at home that helped them have real-time news and updates about the latest weather forecast. If the respondents could not catch the news on the radio or TV, their other sources of information were their friends and families or the municipal and barangay officials. Social media, according to the respondents, is a big help for them as a source of information since it is very accessible to majority of them and smart phones are common possession nowadays.

Also, the BDRRMC or Barangay Disaster Risk Reduction and Management Council of each coastal barangays had developed some Early Warning System (EWS) to notify the residents when there is an impending disaster. Participant 6. "Ang kutob

sang mga kabalayan diri sa radio naga salig sang balita. Depende man sa signal, kon mabaskog ang palaabuton nga bagyo, naga round dayon ang mga tanod kag mga konsehal sa ila assigned nga zone. May Megapon kami diri nga gina gamit kag huo naga hulat kami sang anunsyo halin sa munisipyo. Ako ya bilang kapitan ari diri sa barangay hall naga obra sang mga kinahanglanon kag iban pa nga preparasyon."

Traditional ways to predict disaster. Most of the respondents did not have any traditional way to predict disasters which 17.12% of them answered no and only 0.9% said there is. This implies that the residents rely on the weather forecasts from PAG-ASA rather than the traditional ways.

Households' Practices on Disaster Preparedness and Management

Practices when disaster forecast is heard. Survey respondents were asked what main actions their households would take if they heard a natural disaster was in forecast. Among the 222 respondents, 90.99% said they would prepare all important documents, 85.13% said their entire household would evacuate to a safer place, 63.06% said they would prepare supplies. These trends may represent specific division of roles among different household members such as a mother's role is to gather her children and prepare the important items needed in case of evacuation while a father's role is to secure their house and lead the family during evacuation.

Household items needed during emergency. People were asked if their household had items needed during emergency and based on the result, 63.96% had an emergency food supply, 35.13% had a grab-bag, 58.11% had a list of important telephone numbers, and 80.18% had household documents stored in one place and 51.80% said they have a plan on agreed place to evacuate. The data implied that the residents give a high regard on their important documents such as birth certificates, school records, certificate of land title, and other personal documents which they secured and kept in a water-proof container or wrapped them with plastic wrappers to prevent them from being wet during disaster. More than half of the total number of respondents said that they keep emergency food supply at home.

Evacuation point during a disaster. Majority of the respondents reported having a place to evacuate to during a disaster. Of those who could specify an evacuation point or points, 88.29% of people identified a school, 76.58% identified house/building in the neighborhood, and 20.72% pointed out a community multi-purpose gym. The data revealed that majority of the respondents would evacuate to an identified school before and during disaster. Most respondents chose a school because it is the safest infrastructure for them in their area. Participants No. 1 and 2 stated "Diri sa amon may kami nga Safe Haven nga guin patindog sang (HECS) pero dutay lang ang ma akumodar sang building, ang eskwelahan ang isa sa mga alternatibo nga evacuation site kag ang mga matag-as nga mga balay." Most of the buildings constructed after 2013 are designed as typhoon resilient buildings with provisions of comfort rooms and other amenities designed to cater as temporary

shelter for evacuees.

How safe an evacuation point is. When respondents who had a preferred evacuation point were asked how safe it was, 45.05% of respondents rated it "very safe," 54.95% rated it "somewhat safe," and none rated it "not safe." Hence, Pilar had an identified evacuation center but as to its safety, the respondents were somehow uncertain as to their security in the evacuation points.

Reasons not to evacuate. Before or during disaster, 32.43% of respondents said they would not evacuate for some reasons, 31.98% could not decide whether to evacuate or not, 26.13% would not evacuate because they believed that it was safe enough in their house to stay in during disaster, 19.37% answered they were afraid to leave and go out of their houses, 13.51% said the forecast sometimes were not reliable, 11.71% said that it is too expensive to evacuate because they needed to buy food and other necessary items before going to an evacuation center but nearly half of the respondents said they wanted to stay to look after their properties. Participant No. 1 reiterated that "Wala gapati kag indi mag evacuate kay dapat may ma bilin guid sa ila panimalay."

Involvement in planning to respond. When asked how involved they felt in household decision-making regarding what to do in a disaster, 68.02% of people said they would be "very" involved, 14.41% said they would be "somewhat" involved, and 17.57% said they would not be involved. As per FGD interview the people are involved in planning, they created a committee including all sectors and volunteers.

Who they rely on to help. In terms of post-disaster experiences, survey participants were asked who they could rely on for help if their household suffered as a result of a natural disaster. 77.03% said relatives, 46.40% said the government authorities. The data revealed that most families in the surveyed areas would prefer to ask for help after a disaster from their relatives and friends first before asking for help from people outside their family.

Community Disaster Preparedness and Management

Has organized way to warn people about disaster. The respondents were asked about the level of preparedness and management of their community towards disaster, 40.99% of them said that their community has an organized way to warn people about disaster, 12.16% answered they do not have and 46.85% replied they have no idea about it.   The data revealed that about half of the respondents do not know whether the community has an organized way to warn people about an incoming disaster. Based on the interview (FGD) and observations of the researchers Early Warning System activities are in place in all 5 barangays but they do not have the clear idea what they are already doing fall under these activities. This indicates that the policies, programs and systems   should be clear and specific in order for the people to understand and identify its provisions. Barangays which do not conduct Risk Assessment activities rely only on the budget of their barangays and do not

source out fund from financial institutions.

Persons involved in running the system. For the respondents who said that there was an organized way to warn people about disaster in their area, 72.97% of them said that the system was run by the barangay officials. The barangay officials are the front lines of the Barangay Disaster Risk Reduction and Management Council (BDRRMC). The statement was supported by the 37.39% of the respondents. However, 48.20% said the system is run by the municipal government, 32.43% answered it is under the community volunteers and 5.85% did not know about the question.

Having a disaster management committee. When asked if their community had some form of Disaster Management Committee, 80.63% of survey participants said yes, 19.37% said no. Survey respondents were then asked if their community had any kind of disaster management plan (DMP), only 71.17% reported the existence of a DMP and 28.83% said none existed. On the documents presented, the 5 barangays have crafted its own BRRMP based on the National Risk Reduction Management Framework and the National Risk Reduction Management Plan and RA 10121. Participant No. 6 elaborated that they have a management committee consisting of the Barangay Officials, DepEd, BHW's, BSPO, and Women's Society as shown in their Barangay Disaster Risk Reduction Management Plans (BDRRMP).

Plans to deal with disaster. Respondents who were aware of a Disaster Management Plan (DMP) reported its contents as mainly, risk assessment, followed by evacuation routes. 67.12% of the respondents said that conducting risk reduction assessment is one of the primary components of plan to deal with disaster. According to them, when risks are identified, the community tries to find remedies or solutions to the risks before they get worse and affect the entire community. 55.85% of them replied that identifying the evacuation routes is a component of a disaster plan, 40.54% said it is making the evacuation plan. Secondary data showed that they have plans on disaster prevention and mitigation, preparedness, and disaster response, however a number of limitations was observed: such as in their prevention and mitigation plan, they only indicate information dissemination and BDRRM plan finalization for it is not updated and lack of information on RRR-CCA among constituents.

Participation in making the plan. Only 28.38% of the respondents asked overall reported being involved in disaster planning for their community while 71.62% said they have no participation at all.

Community preparedness drills. Related to this, respondents were asked if their community had ever conducted a disaster preparedness drill, 34.23% said yes, 27.48% said no, and 38.29% said they did not know. Only 77 out of 222 respondents or 34.68% reported that they had ever taken part in a drill and majority of them which is 65.32% said they had not taken part in any drill.

Involvement in community planning on how to respond to disaster. As at

the household level, survey participants were asked to rate the extent of their likely involvement if their community was planning how to respond to a natural disaster, 75.22% felt they would be "very" involved, 18.47% felt they would be "somewhat involved" and 6.31% felt they would not be involved.

The area during a disaster. In order to explore the level of community cohesiveness during a natural disaster, a series of statements were read to the survey participants about how their community would react in the event of a natural disaster, and then asked which one they agreed with the most, 40.09% of people agreed most with the statement: "If there is a disaster, people will only help their own families.", 51.80% of people agreed most with the statement: "If there is a disaster, people will work together to support each other, but without much organization.", 8.11% of people agreed most with the statement: "If there is a disaster, people will work together to support each other in an organized, well-planned way."

Roles and Responsibilities in Disaster Management

Person with important role in responding to disaster in the area. When asked who they felt played an important role in responding and managing disasters in their area, 88.74% of people said village authorities or the barangay officials, 72.97% said municipal government authorities, 59.91% said ordinary people, , 18.92% said international NGOs, 16.22% said religious leaders, 22.07% said volunteers, 16.67% said local NGOs, and 659.01% said disaster management committees and 30.18% were unable to identify nobody. It showed that respondents were that the local authorities have a big role in leading the whole community to properly respond and manage disaster with the cooperation and support of the people and other private organizations such as the local and national non-government organizations. As per FGD, Participant No. 7 disclosed "hay ang barangay council, tanod kag CBO and may responsibilidad."

Understanding about who is responsible for doing during disaster. People were then asked to rate how clearly they understood which actors were responsible for doing what in the event of a natural disaster. 37.39% said they had some understanding, 9.01% of people said they had no understanding, , while 28.38% said they had a clear understanding.

Awareness on policies or laws concerning natural disasters. Coupled with this, people were then asked if they were aware of any policies or laws regarding natural disasters in the Philippines. 79.27% said they were not, while only 20.27% said they were aware of something but not sure what it exactly is. Result of FGD showed that all participants noted that they have no training concerning BRRM, only CBO have undergone orientation and they are willing to have a training in order to enhance their awareness on the existing policies of DRRM.

Conclusions

People in coastal barangays of the municipality of Pilar have lived through multiple disasters which typhoon is on top of them and are well-aware of the threats they face and consider risk reduction as a high priority. Most respondents viewed damage to houses, loss of income and damage to infrastructure and debts are the major impacts of natural disasters, Women, Older people and children are people more affected by disaster. Around half demonstrated an understanding of the link between natural disasters and environmental degradation.

It highlighted a number of gaps in respondents' capacity and resources to cope with natural disasters when they do occur. Very few people have received any education on DRR, either at school or through trainings. Almost all respondents have access to early warning systems via radio and TV broadcasts but these warnings are not always easy to interpret, or delivered in a language that used many technical terminologies which they can hardly understand.

The majority of people seek evacuation centers such as school buildings and identified houses in the community, and some of them especially men would not evacuate before or during disasters to look for the property they leave behind. The respondents showed various ways to prepare for natural disasters within their own households, however, structured preparedness mechanisms within the community are substantially less apparent: very few people reported ever taking part in disaster preparedness drills, or the presence of disaster management committees working in their areas.

More respondents understood clearly that barangay officials had an important role in responding to disaster in their area but many of them just somewhat understood or did not understand at all of who is responsible for doing during a disaster. Majority of the respondents are not aware of any national government laws, policies or procedures concerning natural disasters.

Recommendations

LGU should incorporate gender and age vulnerability analysis in all DRR programming. Responses from younger, the elderly, and with disabilities participated in the study indicated that these groups may be more vulnerable than others to the effects of natural disasters. Government agencies must ensure that barangay disaster management plans are adequately presented, explained and disseminated to the communities and people.

At Barangay and Municipal level, extend the coverage of community-based disaster risk reduction (CBDRR) initiatives and collaborate with existing or 'emergent' local groups who have previously fulfilled roles in disaster response. Conduct of awareness of ecosystem degradation (deforestation and bad fishing practices) this maybe done and conducted by the academe through its extension programs.

Seemingly, DRR awareness-raising activities is highly recommended. An incorporation of the DRR into government and private schools curricula to enhance awareness and capability about disaster risk and lessen its adverse effects.

Future Researchers extend research on the vulnerabilities of different groups to natural disasters. This research has only provided a limited picture of how and why different groups may be vulnerable to disasters in different ways. More in-depth, qualitative studies are needed to understand how women, men, boys and girls in different communities experience and respond to disasters in different ways. In particular, the absence of people with disabilities is a key weakness in the data of this study and should be urgently addressed in future research.

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