

What Happen When They Learn?: Addressing Vulnerability through Community Development and Education in the Coast

Job D. Paguio*, MHisto

Faculty Member, College of Education, Bataan Peninsula State University

Abstract

The study of Santos and his colleagues revealed that many families in the coastal communities in the province of Bataan are highly vulnerable in terms of livelihood strength and resilience, well-being and baseline status, self-protection and social protection and governance. These makes them more vulnerable given the fact that the province has been experiencing natural disasters over the years and is actually at risk to future hazards which can be brought by earthquake, volcanic eruption, floods, tsunami and storm surge. These realizations brought together four (4) colleges – College of Education (CoEd), College of Nursing and Midwifery (CNM), College of Business and Administration (CBA) and College of Social and Behavioral Sciences (CSBS) to initiate a long-term program that will help coastal communities in the province prepare for natural disasters. Dubbed as Addressing Vulnerability at the Coast: Disaster Preparedness and Emergency Response Training for Coastal Barangays, this program is composed of four project areas and each area is led by the college which has expertise on it. Through the program, each barangay's Community-Based Disaster Risk Reduction and Management Council (CBDRRMC) has been established and strengthened and continuous training of community volunteers mostly youth (Climate Change Warriors) on disaster response and preparations for rehabilitation and recovery are being done through the help of the Philippine National Red Cross-Bataan Chapter. Based on the results of the impact assessment done in these barangays, majority of the families are keeping emergency bags in the house, are more than prepared to face natural disasters and have changed their lifestyle rigorously to help mitigate climate change.

Keywords: hazard; vulnerability; disaster risk reduction; education.

* Corresponding author.

1. Introduction

Climate change has affected humans and animals like in so many ways one can imagine. These radical changes pose major challenges among countries most especially among the most vulnerable members of the community - women, children, ethnic people and many more [1]. The changes in the climate saw the rise in the number of natural disasters that claimed millions of lives and destroyed billion worth of properties. For an instance, the country summary report of the Inter-American Development Bank's Operational Policy on Natural and Unexpected Disasters (OP-704 and Action Plan) in 2010 reported that 373 natural disasters killed more than 296,800 people, affected some 208 million others and cost nearly US\$110 billion [2]. These natural calamities include: Haiti earthquake, the floods in Africa and Pakistan, and in the years before, Hurricane Katrina and Mitch and the Asian Tsunami. The latest of these calamities was the Typhoon Hyan or Yolanda which is considered as the strongest typhoon to hit the world in recent history. During the 2005 World Conference on Disaster Reduction in Japan, the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters, a joint framework for actions for disaster risk reduction by 2015, was formulated and agreed upon [3]. This framework calls laid out five priorities for actions to be implemented by every state. These are: ensure that the disaster risk reduction is a national and a local priority with a strong institutional basis for implementation; identify, assess, monitor disaster risks and enhance early warning; use knowledge, innovation and education to build a culture of safety and resilience at all level; reduce the underlying risk factors; and strengthen disaster preparedness for effective response at all levels [4].

In the Philippines, Republic Act (RA) 10121, also known as the Philippine Disaster Risk Reduction Management (DRRM) Act of 2010 was passed which provides that the government institutionalize measures to mainstream disaster risk reduction policies and structures into the national development planning of multiple sectors such as health, public housing, and education, among others. It provides a strong legal and institutional basis for DRRM in the country and provided basis for the development of policies and plans, implementation of actions and measures pertaining to all aspects of DRRM, including good governance, risk assessment and early warning, knowledge building and awareness raising, reducing underlying risk factor, and preparedness for effective response and early recovery (Section 4, RA No. 10121). Various strategies to address and reduce people's vulnerabilities and risks to disasters were integrated in different sectors and sub-sectors. Philippine Development Plan's approaches to incorporate DRRM included among others integrating DRRM in all education levels and in specialized technical training and research program.

The local communities are the most vulnerable from these natural disasters which pose risks to human and properties like floods, earthquakes, wildfire, storms, landslides, volcanic eruptions and the like since they are severely expose to risks and hazards [5]. These risks result to hazards which are actually threats faced by the community resulting from a possible occurrence of a natural and manmade-phenomenon and are determined by its probability and severity exhibited at a certain location [6]. From these hazards, physical, economic, social and environmental vulnerabilities of the communities like inherent weaknesses, structural factors etc. are revealed which represents the areas of susceptibility and probability to suffer human and material damages when exposed to a natural event [7].

With the aim of influencing how coastal communities respond to the threat posed by these natural disasters, researchers from the College of Education conducted a study which assessed the hazard vulnerability and disaster risk of local coastal communities (barangay) of Bataan. The findings of the study of Santos revealed that most families in the coastal communities are highly vulnerable in terms of livelihood strength and resilience, well-being and baseline status, self-protection and social protection and governance. These social vulnerability springs from the fact that: most mothers have no occupation while the majority of the fathers are farmers. The average size of the family is 6 members. Most of the families are extended and earn less than 10,000 pesos a month. There are also inadequate income opportunities in the area. Burning is the main system of disposing the garbage and majority of the people use water sealed septic exclusive. The source of water supply is through shared faucet while most houses are already electrified. Since the area is coastal but surrounded by mountains on the other side, majority of the residents live along the coastline. In times of natural disasters, majority of the people are willing to relocate. However, they were not properly advised by the LGUs regarding the Building Code during the construction of their houses. The LGU has already conducted seminar about natural hazard particularly on tsunami and typhoon. There is neither LGU Committee nor volunteer group to assist during hazardous event. The coastal communities are highly susceptible to flooding. The communities near the mountainsides are highly susceptible to landslides. Also, there is a low risk of volcanic eruptions in the area as well as earthquake and earthquake-triggered landslides. Finally, there is a high potential of storm surge in the coastal communities facing the Manila Bay.

To date, there are no clear written procedures and policies regarding disaster preparedness, risk reduction, emergency response and reconstruction and rehabilitation in the coastal communities. This is quite alarming since local communities must be financially and institutionally prepared to address the risks and hazards of disasters as well as their vulnerabilities to these challenges. The findings affirmed the results of the World Bank while looking at the Comprehensive Disaster Risk Management for East Asia and the Pacific Region, particularly for the Philippines [8]. The report revealed that disasters are being dealt within manners that are ad-hoc and response-oriented; information on disaster risk is lacking and measurement of socio-economic impact of disasters is inadequate; NDCC members and LGUs have limited risk reduction capacities; and efforts by donors, multilateral and civil society are poorly coordinated and generated little effects, and the Government bears majority of the cost of disasters. By and large, this community extension program banked on the recommendations of the study of Santos to wit: the coastal communities must be empowered financially by providing them adequate sources of means of livelihood to help them prepare for disasters and post-disaster conditions. Seminars regarding the risks of hazards and the vulnerability of the coastal communities must be conducted to inform them of the disasters that pose dangers to their lives and their properties. Disaster Drills and practices must be taught to the coastal families not only to local officials so that they may be empowered in the face of disasters and natural hazards. As such, a community extension program entitled Addressing Vulnerability at the Coast: Disaster Preparedness and Emergency Response Training for Coastal Barangays (Phase II) was conceived. The program was implemented on October 2015 and was finished on October 2017. It was conducted on the following coastal communities: Brgy. Paysawan, Brgy., Binuangan and Brgy. Quinawan in Bagaca, Bataan and Brgy. Mabayo, Brgy. Poblacion and Brgy. Sabang in Morong, Bataan.

The general objective of the project was to provide the coastal communities with knowledge, skills and training on disaster preparedness. Specifically, it aimed to empower the community people in facing natural disasters at local level, educate them on climate change, natural disasters and mitigation process and equip them with basic knowledge, proper skills and attitudes in the promotion of mental health and the provision of emergency psychosocial support to affected populations in cases of emergencies. It also aimed at enhancing the capability of community people in reducing disaster risks through arming them with basic life support skills and training, training them on livelihood activities and financial and business management and ensuring collaborative support among local government units and agencies responsible for mitigating climate change and addressing natural disasters.

2. Methodology

Since this community extension program was divided into four (4) projects, the activities utilized by the community extensionists were varied. Disaster preparedness and emergency response training is most effective when participants are involved as active learners. For this reason, trainers used participatory training approach where participants are involved in discussing issues, solving problems, practicing skills, analyzing situations and applying concepts. A primary goal of participatory seminars and workshops is to develop participants' critical thinking, problem solving and planning skills. Participants were challenged to think critically, use and develop planning skills, and solve problems creatively. As such, this training used the participatory workshop method. In this kind of method, trainers still made presentations, but they did not rely primarily on this method. They also planned, designed and facilitated group discussions, self-study and group problem solving exercises. For Project Area 1 which was entitled as Addressing Vulnerability through Community Development and Education, the methodology used by the extensionists from the College of Education were varied. House visits and lecture method were used for Module 3: The Challenges Pose by Climate Change (Mga Hamon ng Climate Change); Module 4: The ABCDs of Needs (ABAKADA ng Pangangailan) and Module 5: Disaster Warning Signals. Group activities and lecture method were utilized in discussing Module 1: Assessing the Hazards in the Community (Pagtatasa sa Kalamidad at mga Banta Nito). Also, group activities and role playing were used for Module 2: I, Preparing for the Natural Disasters (Ako, Naghahanda sa Kalamidad). There 546 community members who participated in this project.

3. Discussion

This community extension program is research-based and the training contents were designed based on the salient findings of the study of Santos and his colleagues. It is composed of 4 project areas and each project area contained several topics and activities which was handled by the College that has expertise on these activities. To jumpstart the project, inception meetings with the Mayor of Morong and Bagac together with barangay officials and officials from agencies of the local government directly involved in disaster preparedness were held. The objectives of the program were discussed with the local officials together with the review and signing of the Memorandum of Agreement (MOA) between the university and the local government unit. When the MOA has been signed, the actual implementation of the project commenced.

To realize the successful implementation of the program and each project component, collaborative partnerships were maintained by each college. For Project Area 1: Addressing Vulnerability through Community Development and Education, the College of Education as the lead extensionist partnered with Climate Change Commission, Mga KaSocSci UNESCO and College of Education Student Council UNESCO. The general objective of this project area is to equip the coastal community with proper and sufficient information about natural disasters and educate them on climate change and mitigation process since based on the findings of Santos and his colleagues Bataan province is susceptible to different hazards and has a high risk to natural disasters. The study also revealed that many families in the coastal communities in the province of Bataan are highly vulnerable in terms of livelihood strength and resilience, well-being and baseline status, self-protection and social protection and governance. These makes them more vulnerable given the fact that the province has been experiencing natural disasters over the years and is actually at risk to future hazards which can be brought by earthquake, volcanic eruption, floods, tsunami and storm surge.

For Module 1: Assessing the Hazards in the Community (*Pagtatasa sa Kalamidad at mga Banta Nito*), the extensionists gathered the participants at the barangay hall of each barangay and conducted group activities about the different natural disasters that pose risks to the coastal communities of the province based on the study of Santos and his colleagues. These included earthquake which may be caused by the Iba Fault, tsunami which maybe caused by the movement of the Philippine Trench at the West Philippine Sea, volcanic eruption of Mt. Natib in Morong and other natural hazards that occur in the province from time to time. For Module 2: I, Preparing for the Natural Disasters (*Ako, Naghahanda sa Kalamidad*), the participants were taught about what to do before, during and after the onslaught of a natural disaster. Group activities and house visits were done by the extensionists. The group developed several pamphlets and brochures that helped the participants understood the context of what were being discussed. These brochures focused on several disasters like earthquake, storm, tsunami, storm surge and others. For Module 3: The Challenges Pose by Climate Change (*Mga Hamon ng Climate Change*), the participants were taught about the practical application of 15 Low Emission Development Strategies (LEDS) which were part of the #NowPH campaign of the Climate Change Commission. In this regard, the participants, through house to house visit, learned about the practical ways on how to lower the carbon print and how they can help mitigate the effects of climate change. For Module 4: The ABCDs of Needs (*ABAKADA ng Pangangailan*), the extensionists introduced the emergency bag or E-Bag, the things that should be put inside the bag and the importance of this E-bag in disaster preparedness and mitigation. The team required every household visited to maintain an E-Bag which they can use during the onslaught of natural disasters. The E-Bag serves as a survival kit of the participants should they find themselves in an emergency situation during a natural disaster. For Module 5: Disaster Warning Signals, the extensionists conducted house to house visits to educate the community household regarding the different warning signals for most of the natural disasters that visit the country. The aim of this project is for the community people to plan their behavior with response to the incoming disaster. The warning signals suggest to the public what to do and how to react to the incoming natural disasters. These warning signals which are imprinted in the brochures that were distributed to the participants regulate the behavior of the community people and guide them on how to react during natural disaster. Numerous vulnerable populations may lack organization and engagement in disaster risk reduction and preparation [9]. They may also lack the technological capability to carry out a coordinated operation. As a

result, local governments can effectively organize community organizations, mobilize existing groups, and enhance capacity via training and study tours [10]. Often, it is a lack of knowledge about hazards, associated risks, vulnerabilities, and preparatory steps taken by local communities that impedes community action [11]. In terms of decision-making, effective decision-making at the barangay level is necessary. Decision-making is critical in the process of Community Based Disaster Risk Management (CBDRM) [12]. To raise community knowledge of the dangers and consequences of all hazards, risks, and vulnerabilities, assessments are being conducted on a constant basis in the barangay. There are now programs and activities aimed at disseminating information to the community level via tri-media and barangay awareness campaigns, the production of reference materials, and collaboration with various agencies and sectors in order to improve community understanding and application of risk reduction measures. To prepare communities with the required abilities to deal with the negative effects of disasters, the barangay has undertaken regular simulation exercises on how to deal with earthquakes, floods, and fire. To strengthen the capability of local institutions, search and rescue teams have been created, training modules for schools and communities have been produced, and risk assessments, exercises, and trainers' training have been undertaken in communities. Meetings with barangays and business sector organizations are also being held to build, construct, and educate on community-based disaster emergency response systems for different hazards and hazard monitoring. Barangay authorities and the community's core of volunteers attend frequent seminars and trainings to build their skills and the capacity of the institutions. Additionally, risk assessments, contingency plans, knowledge management, and training activities have been implemented in part. To foster collaboration among all important actors and stakeholders, the barangay has established a directory or database of key players and stakeholders, which is distributed across the barangays and prominently displayed in public spaces.

4. Conclusion and Recommendation

After two years of implementation, it was concluded that there have been changes in the attitude of the participants with regards to disaster preparedness. The households are more than prepared now to deal with disaster risk and hazards. Through the program, each barangay's Community-Based Disaster Risk Reduction and Management Council (CBDRRMC) has been established and strengthened and continuous training of community volunteers mostly youth on disaster response and preparations for rehabilitation and recovery are being done through the help of the Philippine National Red Cross-Bataan Chapter. Majority of the families are keeping emergency bags in the house, are more than prepared to face natural disasters and have changed their lifestyle rigorously to help mitigate climate change. It is recommended that continuous partnership with the local government units of Bagac and Morong should be maintained so that periodic assessment of the progress of their coastal communities regarding disaster preparedness can still be done. With the intervention of the university, continuous training of the community first aid responders on basic life support mechanisms and first aid must be given to them religiously.

References

- [1] Santos, L., Baciles, R., Olubia, L., and Forbes, J. (2013). Disaster risks and hazard vulnerability of coastal communities in bataan: basis for disaster preparedness and mitigation plan (DPMP). Unpublished

research, Bataan Peninsula State University.

- [2] Agrawal, A., C. McSweeney, and N. Perrin. (2008). Local institutions and climate change adaptation. Social Development Notes No. 113. Washington, USA: World Bank.
- [3] Guha-Sapir, D., F. Vos, R. Below, and S. Ponserre. (2011). Annual disaster statistical review 2011: The numbers and trends. Brussels, Belgium: Centre for Research on the Epidemiology of Disasters (CRED), Institute of Health and Society (IRSS), and Universite catholique de Louvain.
- [4] Parker, DJ. (2000). Vulnerability analysis and disasters. Floods Routledge.
- [5] Li-Vollmer, M. (2013). In B.M. Altevogt (Chair) In Cooper, S., Gebbie, K.M., Kreisburg, D, Messe, S.A. (Eds.), Engaging the Public in Critical Disaster Planning and Decision Making: Workshop Summary (pp. 26-29). Washington, D.C.: The National Academies Press
- [6] Tierney, K. J., Lindall, M. K., & Perry, R. W. (2001). Facing the unexpected: Disaster preparedness and response in the United States. Washington, D.C.: Joseph Henry Press.
- [7] Godschalk, D. R. (2003). Urban hazard mitigation: Creating resilient cities. *Natural Hazards Review*, 4(3), 136-143.
- [8] Michel-Kerjan, E., & Wise, J. V. (2011). The risk of ever-growing disaster relief expectations. Risk Management and Decision Processes Center The Wharton School, University of Pennsylvania, Philadelphia, PA, Retrieved from http://opim.wharton.upenn.edu/risk/library/WP2011-09_ReliefExpectations.pdf
- [9] World Bank. (2005). Natural disaster risk management in the Philippines : Enhancing poverty alleviation through disaster reduction. Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/8748>
- [10] Kapucu, N. (2008). Lessons of disaster: Policy change after catastrophic events. *Public Management Review*, 10(1), 153-155. doi: 10.1080/14719030701783672.
- [11] Shesh, Z. M. (2006). Community-based Disaster Risk Management For Local Authorities: Participant's workbook. Bangkok, Thailand: Asian Disaster Preparedness Center
- [12] Seeger, M. W. (2006). Best practices in crisis communication: An expert panel process. *Journal of Applied Communication Research*, 34(3), 232-244. Alcantara, L. (2002). 2002. Geomorphology, natural hazards, vulnerability and prevention of natural disasters in developing countries. *Geomorphology*, 47(2-4):107–124, 1 Oct.