Community-based Disaster Preparedness and Challenges in Catubig, Northern Samar: Basis for Communication in Disasters Plan

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Abstract: *Disaster preparedness is pivotal in a country like the Philippines which has never been exempted from natural and man-made disasters. Hence, there is a need to study community-based disaster preparedness. It turned out in this study, that Catubig, Northern Samar was "well prepared" on the aspect of community-based disaster preparedness. However, it still had its fair share of challenges, which ranged from communication in disasters needs to disaster literacy, poor mobilization of the civil society toward participation, state of governance, and economic stability. Banking on these challenges, the researchers designed a community-based communication in disasters plan, which highlighted a fair play between objectives, audience, strategy, and tools/activities.*

Keywords: community-based disaster preparedness, challenges, communication in disasters plan

1. Introduction

Disasters, natural or man-made, post threats to human lives and properties. Hence, these call for careful and deliberate actions between and among the local government units (LGU), the private sector, and other stakeholders. There is a need to understand the costs and benefits of managing disasters as it will become a key tool for future success. This basically means understanding and measuring the trade-offs implicit in decisions; their benefits in terms of reduced poverty and inequality, environmental sustainability, economic development, and social progress; and who retains the risks, who bears the costs and who reaps the benefits (UNISDR, 2015).

Disasters are not new phenomena specific for an era of technological development and surely they are not just hydro-meteorological, geophysical, and biological hazards which occurrence is usually connected with a climate change. Time and time again, epidemics and pandemics have resulted in sizable reductions of the world's population. In the fourteenth century, the Bubonic plague (Black Plague) has decreased as much as 50 percent of a population across Europe. Many theoreticians suggest that some of history's greatest civilizations, including the Mayans, the Norse, the Minoans, and the Old Egyptian Empire, had disappeared under the effects of floods, famines, earthquakes, tsunamis, El Niño events, and other widespread disasters. Nowadays, there is a standing that a worldwide drought in the eighth and ninth centuries caused the fall of the Mayan Empire in Mexico and the Tang Dynasty in China (Fagan, 2009).

Every LGU should carry a unit which primary duty is to ensure disaster preparedness to reduce the risk that calamities may cause. Talking about disaster preparedness, this refers to arrangements aimed at ensuring that a country or a community is aware of and prepared for any disaster and that should a disaster occur, all resources and services which are needed to cope with the situation are efficiently and timely mobilized and deployed. This objective is achievable only if there is an effective planning, resource management and co-ordination of stakeholders responsible for disaster management (Gyawu, Haridu, & Blako, 2018).

The Philippines, due to its geographic location, is exposed to high incidents of hazards such as tropical storms, tsunamis, earthquakes, volcanic eruptions, landslides and droughts. The country is also situated along a highly seismic area lying along the Pacific Ring of Fire where two (2) major tectonic plates (Philippine Sea and Eurasian) meet and is highly prone to earthquakes and volcanic eruptions (Doroteo, 2015). The colossal nature of these disasters has given rise to the realization that disaster communication and management strategies need to be more concerted and effective (Moorthy, Benny, & Gill, 2018).

As in the case of the Northern Samar, the third poorest province in the Philippines (Data Journ Ph, 2018), is always within the path of typhoons coming from the Pacific Ocean. Disaster brought about by these natural phenomena have become on a regular basis. The denudation of almost 50 percent of the province's vast forest risks the people to flash floods and erosions. The municipality of Catubig, Northern Samar, once known as the "rice granary" of Northern Samar had suffered much from these catastrophes. In 2015, typhoon "Nona" hit hard the province and worst, the town of Catubig, leaving most of the barangays severely damaged, thousands of families affected and almost all the rice fields were washed out.

From the various sectors of the society, questions have been raised regarding the community-based preparedness, that comes along with a communication in disasters plan, to deal with the long-term effects of the devastating natural hazards. The scenario cited is the main reason why the researchers found the interest to go into this study, considering that the University of Eastern Philippines (UEP), the work station of the researchers, is a partner of the LGU in promoting growth and development in the province.

2. Objectives

This study shed light on the hereto enumerated objectives:
1) Determine the community-based disaster preparedness in Catubig, Northern Samar;
2) Find out the challenges encountered; and
3) Design community-based communication in disasters plan.

3. Review of Literature

Disasters are events, concentrated in time and space, in which a community experiences severe danger and disruption of its essential functions, accompanied by widespread human, material or environmental losses, which often exceed the ability of the community to cope without external assistance. Disasters may be activated from seemingly unexpected occurrence of earthquakes, to a more predictable seasonal floods and periodic storms. Unfortunately unsustainable practices of governments, industries, firms and individuals contribute immensely to this unfortunate occurrence (Smith, 2004).

Disaster preparedness is typically understood as consisting of measures that enable different units of analysis to respond effectively and recover more quickly when disasters strike. These units include individuals, households, institutions, organizations, communities, and societies. Preparedness efforts also aim at ensuring that the resources necessary for responding effectively in the event of a disaster are in place and that those faced with having to respond know how to use those resources (Wanjala & Onyango, 2018).

Pre-disaster planning is one important factor. SA and Syed (2015) stated that it begins with the identification, understanding and analysis of the natural and other hazards in the area. The analysis will make it possible to establish priorities and to decide on the steps to be taken to reduce the risk. The aim of which is to reduce vulnerability of people and communities in a territory to damage, injury and loss of life and property resulting from natural or man-made catastrophes; to prepare for prompt and efficient rescue, care and treatment of victims; to authorize and provide cooperation in disaster prevention, response and recovery; and to provide a disaster management system that embodies all aspects of pre-disaster preparedness and post-disaster response.

In the course of preparing to reduce the risks of disasters, the power of communication should never be compromised. NDMICS (2011) stressed that communication is critical at all phases of disaster management as during emergencies it incorporates a wide range of measures to manage risks to communities and the environment. Having a dependable and accessible communication and information systems are vital to a community's resilience (The Associated Press-NORC Center for Public Affairs Research, 2013). This importance was clearly highlighted in disasters such as Hurricane Katrina and the 9/11 terrorist attacks (Dwyer, 2006; Lueck 2005; Thompson 2005).

4. Methodology

This study was conducted in the *barangays* of Catubig, Northern Samar in the Philippines between 2018 and 2019. It made use of descriptive research design and employed survey questionnaire and personal interviews as research tools. The results of the findings were used as the basis of the communication in disasters plan, which template was anchored on PAHO (2009), particulary on planning communication and information management.

The research participants were composed of 91 constituents, identified through purposive sampling, and supplied the data for the first two (2) objectives. They were residents in the seven (7) disaster-prone *barangays* near the *poblacion* (central) area. These *barangays* include Calingnan, Canuctan, Opong, Lenoyahan, D. Mercader, Guibuangan, and Sagudsuon. In addition, they resided in light material-made houses and had the experience of staying in the evacuation facility in times of disaster.

5. Results and Discussion

Table 1: Community-based Disaster Preparedness of Catubig, Northern Samar

Disaster Preparedness	Mean	Interpretation
I keep important papers in one place, preferably in a plastic bag so that they are protected and can be collected quickly if evacuation is necessary.	4.40	Very Well Prepared
I pull down and close shutters or draw curtains, as protection from flying glass especially for windows that are near the bed in the event of an earthquake occurring at night and people are asleep.	4.40	Very Well Prepared
I always inform my family about plans for typhoons, making sure everyone knows - what is in the emergency kit and where it is kept.	4.30	Very Well Prepared
I brace overhead light fixtures to prevent them from falling during the earthquake.	4.24	Very Well Prepared
I check the house for weak points - loose or damage wooden frame or wall cladding loose or missing nails, termite or moisture damage to wooden structure - particularly the house corners and bracing.	4.20	Very Well Prepared
I have ready candles and water-proof matches.	4.13	Well Prepared
I do not throw anything like cigarette butts, wrappers especially those made of plastic or non-biodegradable objects, anywhere which may clog or block the drainage system.	4.08	Well Prepared
I do not throw trash in rivers or canals	4.06	Well Prepared

When there is news about incoming storm, I see to it that I have reasonable stocks of drinking water, canned food, and food items such as instant noodles.	4.05	Well Prepared
I find out about the typhoon warning system, particularly where warnings can be obtained.	4.03	Well Prepared
In times of adverse weather conditions, I always listen to the official warnings issued by local authorities and news reports on the local radio or television.	4.03	Well Prepared
I understand the flood warning messages, what will be the impacts of flooding to my area, and what are the areas vulnerable to different degrees of flooding.	4.03	Well Prepared
I understand the risks when disaster occurs.	4.03	Well Prepared
More number of lives can be saved during the first few hours after disaster has occurred through local response teams before help arrives from elsewhere.	4.01	Well Prepared
I have access to safe water and foods if disaster strikes.	3.97	Well Prepared
I have safe storage of essential items like food, medicine, etc.	3.97	Well Prepared
I know how to apply first aid in cases of burns, wounds, etc.	3.97	Well Prepared
I store all flammables or hazardous liquids outside the house, in their proper containers, away from structures since earthquakes may trigger fires or explosions within the building.	3.95	Well Prepared
I have rope/string hammer and nails to tie things down during storms.	3.93	Well Prepared
The numerous numbers of survival and health resulting from a disaster are dealt with more efficiently if the community is prepared, active, and well organized.	3.90	Well Prepared
I have an evaluation plan in case of emergency.	3.88	Well Prepared
I always have in hand emergency contact numbers and addresses (whom I should inform in case of emergency).	3.87	Well Prepared
In preparation for flood, I have a supply of essential medicine for cold, cough, diarrhea, headache, fever and other common illness etc.	3.87	Well Prepared
I have extra radio batteries that can be used in case of power losses.	3.85	Well Prepared
I have portable radio and torch with fresh batteries.	3.82	Well Prepared
I have prepared a flood emergency kit.	3.81	Well Prepared
I know where to get information about the hazards.	3.79	Well Prepared
I have followed flood resistant construction design and materials in the making of my house.	3.74	Well Prepared
Weighted Mean Average	4.01	Well Prepared

Table 1 presents the data on the community-based disaster preparedness (CBDP) of Catubig, Northern Samar. It can be observed that the CBDP was "very well prepared" on some aspects like, keeping important papers in one place, preferably in a plastic bag so that they are protected and can be collected quickly if evacuation is necessary (4.40); pulling down and closing shutters or draw curtains, as protection from flying glass especially for windows that are near the bed in the event of an earthquake occurring at night and people are asleep (4.40); always informing their family about plan for typhoons, making sure everyone knows - what is in the emergency kit and where it is kept (4.30). It can be inferred from the data that the officials manning the community-based disaster preparedness councils have pre-existing knowledge on disaster preparedness.

On one hand, the community-based disaster preparedness was "well prepared" on preparing a flood emergency kit (3.81); knowing where to get information about the hazards (3.79); and following flood resistant construction design and materials in the making of their houses (3.74). It was highlighted in one study, that there is also the need to develop and implement an effective communication strategy that provides information and enhances public warning of disasters (Gyawu, Haridu, & Blako, 2018).

With a weighted mean average of 4.01, the CBDP of Catubig, Northern Samar was "well prepared". This data, however, go against the findings in the study of Wanjala and Onyango (2018) where they rated their officials adequately not prepared.

Table 2: Community-based Disaster Preparedness Challenges in Catubig, Northern Samar

Challenges	Frequency	Rank
Residents are un-informed, hence, they are not prepared for disasters	84	1
Misinformation due to fake news and unreliable sources of information	74	2
Limited access to disaster-related information	68	3
Poor disaster literacy	60	4
Misrepresentation of residents in the disaster preparations of the *barangay* council	52	5
Absence of socially-relevant campaigns on tree planting and proper waste disposal	45	6
Inadequate disaster related-trainings for people's organizations and residents	40	7
Snail-like government assistance	38	8
Lack of support to agricultural productivity	30	9

Although Catubig, Northern Samar is well-prepared on community-based disaster preparedness, it still has its fair share of challenges. Hence, Table 2 presents the ranking, based on the frequency counts, of these challenges.

On top of the list, residents are un-informed, hence, they are not prepared for disasters, 84; followed by misinformation due to fake news and unreliable sources of information, 74; and limited access to disaster-related information, 68. These findings can be attributed to the literatures of Austin et al. (2012) and Johnson (2007) suggests that community members lack the mechanism to aggregate and authenticate information, thus such communication cannot be automatically recognized as formal.

On the other hand, the bottom three (3) challenges include inadequate disaster-related trainings for people's organizations and residents, 40; snail-like government assistance, 39; and, lack of support to agricultural

productivity, 30. It can be inferred from these data that the residents long for disaster preparedness-related trainings, they held the government accountable, and they value the stability of agriculture as it is the prime source of their living.

Over-all, these data are in parallel with the specific challenges and priorities for action in the five (5) main areas, i.e. governance; risk reduction, assessment, monitoring and early warning; knowledge management and education; reducing underlying risk factors; and preparedness for effective response and recovery as cited in the study of Schryen and Wex (2015).

Table 3: Community-based Communication in Disasters Plan

Objectives	Audience	Strategy	Activities/Tools
Guarantee that situation reports on the development of the disaster are regularly produced and distributed	*Barangay* Council; representatives from the LGU, MDRRMO, and MSWDO; *purok* leaders; people's organizations; stakeholders; benefactors; and local media professionals	Organize a community-based information and communication management workforce to set-up mechanisms in the collection, analysis, and tailored-fit indigenized production and dissemination of technical information	Identify relevant and accurate sources of information; produce daily indigenized technical reports; systematically distribute daily reports to an approved list of contacts, i.e. *purok* leaders and local media outfits, among others; publish reports on the barangay's facebook page (if available), bulletin boards, cellular phone texts, leaflets, radio announcements, and *bandilyo* (use of megaphone)
Set the seal on communication agenda that includes information geared at reducing disaster risks	Affected households; LGU, BFP, MDRRMO, and MSWDO representatives; local media; and community-based communication planners	Fortify linkages with local media partners to facilitate timely dissemination of information to its target audience	Prepare press releases, organize workshops, conduct field interviews, distribute press kits, and visit affected areas; and establish working groups with local broadcasters and journalists to ensure commitment in popularizing measures to reduce disaster risks. Raise their awareness also on these measures
Strengthen civil society participation and organization to reduce disaster risks	Affected community, *purok* leaders, people's organizations' representatives, and partner schools and local NGOs	Social organization; educational communication; partnerships with allied government agencies and private organizations	Train trainers, facilitators, and lecturers in community-based communication plan in disasters; raise awareness of the elected *barangay* council officers, *tanods* (local police), and health workers (BHW) who will address the emergency including the church leaders and local artists and encourage them to address risk reduction measures during their respective religious services and artwork exhibits; produce advocacy relevant videos which can be uploaded on social media, infomercial plugs which can be played in a local radio, and handy print materials, i.e. leaflets and posters; and involve the residents in campaigns, i.e. drills and pre-and-post clean-up drives;
Safeguard adequate knowledge on the application of standards and guidelines in evacuation banks.	Disaster response personnel, i.e. barangay council officers, *tanods*, and BHWs, including the representatives from the AFP, BFP, LGU, MDRRMO, MSWDO, PNP, and coast guards, among others	Sectoral/by-cluster educational communication training	Hold periodic assemblies to distribute guidelines on the best practices in evacuation banks; have these best practices popularized through the production of IEC materials (print and broadcast) for distribution in evacuation banks and for mass consumption.

Legend: *Armed Forces of the Philippines (AFP); Bureau of Fire and Protection (BFP); Local Government Unit (LGU); Philippine National Police (PNP); Municipal Disaster Risk and Reduction Management Office (MDRRMO); Municipal Social Welfare and Development Office (MSWDO)*

Table 3 considers the value of the communication component in a community-based disaster preparedness plan. As in the words of SA and Syed (2015) communication should be an integral part of pre-disasters plan. The plan also speaks of the concept of PAHO (2009), which concluded that planning clarifies, in an ordered and sequential way, the context of what has to be communicated, how it will be communicated, through what media, what people and resources can be counted on, and the audience for the messages.

The inclusion of a bigger audience corresponds to the critical importance of a system designed to enhance open and rapid communication and sharing of information among number of teams including first aid, fire fighter, emergency services for medical, food, security, so that effective

assistance to the affected people is provided (Ali, Nguyen, Vien, & Shah, 2015).

6. Conclusions

This study revealed that Catubig, Northern Samar was "well prepared" on the aspect of community-based disaster preparedness. However, it still had its fair share of challenges, which ranged from communication in disasters needs to disaster literacy, poor mobilization of the civil society toward participation, state of governance, and economic stability. Banking on these challenges and employing the key factors, i.e. objectives, audience, strategy, and tools/activities, a community-based communication in disasters plan was designed.

7. Recommendations

In the light of the conclusions of this study, the recommendations below are hereby forwarded.

1) Uphold the community-based disaster preparedness.
2) Devise concrete plans, immediate mechanisms, and appropriate actions to counter the challenges.
3) Never disregard the power of communication, more especially in times of disasters. Consider the designed communication in disasters plan in the community-based disaster-preparedness agenda.

References

[1] Ali, K., Nguyen, H.X., Vien, Q.T., & Shah, P. (2015). *Disaster Management Communication Networks: Challenges and Architecture Design.* School of Science and Technology, Middlesex University, The Burroughs, London, United Kingdom.

[2] Doroteo, H. J. E. (2015). *Disaster Risk Profile and Disaster Risk Management Framework of the Philippines: Natural Disasters.* Conference Paper. United States Agency for International Development (USAID).

[3] Dwyer, J. (2006, April 1). The calls: 911 tapes echo grim struggle in towers. *New York Times*.

[4] Gyawu, M. A., Osman, H. and Brako, S. *Effective Disaster Preparedness Strategies; A Supply Chain Perspective.* International Journal of Advanced Research · January 2019.

[5] Johnson, C. (2007). Social capital and the search for information: Examining the role of social capital in information seeking behavior in Mongolia. *Journal of the American Society for Information Science & Technology*, 58(6), 883-894.

[6] Lueck, T. J. (2005, September 19). Grant to help city broaden radio network. *New York Times.*

[7] Moorthy, R., Benny, G., & Gill, S.S. (2018). Disaster Communication in Managing Vulnerabilities. Jurnal Komunikasi *Malaysian Journal of Communication* Jilid 34(2) 2018: 51-66 E-ISSN: 2289-1528

[8] Pan American Health Organization (2009). *Information management and communication in emergencies and disasters* Manual for Disaster Response Teams. Regional Office of the World Health Organization. Emergency Preparedness and Disaster Relief, Washington D.C., USA.

[9] National Disaster Management Information and Communication System (2011). National Disaster Management Guidelines (NDMICS), New Delhi, India.

[10] SA, T. and Syed, N. (2015*).* Disaster Preparedness: Current Trends and Future Directions. *International Journal of Science and Research (IJSR) ISSN (Online): 2319-7064. Volume 4 Issue 6.*

[11] Schryen, G. & Wex, F. (2015). *Risk Reduction in Natural Disaster Management Through Information Systems: A Literature review and an IS design science research agenda*. Information Systems Research, University of Regensburg and University of Freiburg, Germany

[12] Smith K (2004). *Environmental hazards: assessing risk and reducing disaster*, 4th Edition, New York, Routledge.

[13] Stikova, E. (2016). *Disaster Preparedness*. Special Volume:A Global Public Health Curriculum; 2nd Edition.

[14] The Associated Press-NORC Center for Public Affairs Research. (2013). *Communication during disaster response and recovery*. Retrieved from: http://www.apnorc.org/PDFs/Resilience%20in%20Superstorm%20Sandy/Communications_Final.pdf

[15] Thompson, C. (2005, September 18). Talking in the dark. *New York Times Magazine.*

[16] UNISDR (2015). *Making Development Sustainable: The Future of Disaster Risk Management.* Global Assessment Report on Disaster Risk Reduction. Geneva, Switzerland: United Nations Office for Disaster Risk Reduction (UNISDR).

[17] Wanjala, G. and Onyango, M.A. (2018). *Disaster Awareness and Preparedness of Secondary Schools in Homa Bay County, Kenya*