

# Disaster Preparedness And Risk Management Strategies Of The Local Government Unit In Rosario, Northern Samar, Philippines

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## ABSTRACT

This project study aimed to assess the disaster risk reduction management (DRRM) strategies and disaster preparedness of barangay officials in Rosario, Northern Samar. Through a descriptive approach, the research revealed that the barangay officials are adequately "managed" in terms of risk reduction management strategies and are "much prepared" for disaster preparedness. However, the study identified 29 challenges hindering the full implementation of DRRM, ranging from the lack of essential equipment and machinery for risk reduction to the neglect of gender and social-responsive needs of victims and evacuees, as well as the limited participation of residents in disaster drills. As a result, the study suggests the consideration and review of an intervention program design to address the identified issues and enhance the effectiveness of DRRM efforts in the barangay.

Keywords: Disaster risk reduction management, Disaster preparedness, Barangay officials, Rosario Northern Samar, Intervention program design.

## INTRODUCTION

Northern Samar 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 town of Allen had suffered much from these catastrophes. The Provincial Disaster Risk and Reduction Management Office of Northern Samar have also identified that there is a fault line along these Balicuatro area

municipalities, which might threaten lives and properties during earthquakes.

In 2015, typhoon “Nona” hit hard the province of Northern Samar leaving most of the barangays severe damages in Victoria, where thousands of families were affected and almost all the rice fields and fish ponds were washed out. Same situation happened when typhoon Tisoy hit the area on December 3, 2019. According to the Northern Samar’s Provincial Disaster Risk Reduction and Management Council (PDRRMC), the rapid damage assessment and needs analysis consolidated showed that the typhoon damaged 28, 577 houses and washed out 3,774 more and affected 224,171 individuals or more than a fifth of the population of the province (Philippine News Agency, 2019).

From the many sectors of the society, questions have been raised regarding the municipal preparedness plans to deal with the long-term effects of the devastating natural hazards.

The scenario cited is the main reason why the researchers are interested to go into this study, considering that the University of Eastern Philippines, being the lone comprehensive state university in the province, is a constant partner of local government units in promoting growth and development in Northern Samar.

Hence this papers seeks to find out the disaster risk reduction management strategies of the barangay officials in the towns of Rosario in Northern Samar. Determine the disaster preparedness scale of these barangay officials. Find out the problems encountered by the barangay officials in the disaster risk reduction management, and prepare intervention program design based on the findings of the study.

## **METHODOLOGY**

This study was conducted in among the barangay officials (elected and ex-officio members) in the barangay units of Rosario, Northern Samar. Complete enumeration was considered in the town given that there are only 11 barangays. However, of the supposed 110 total respondents, only 90 questionnaires were retrieved. The study made use of descriptive research design and employed survey questionnaire and interviews. The interview questionnaire was patterned from a related local study conducted in Catubig, Northern Samar in 2018. The findings of the study served as baseline data of the proposed intervention program design.

## RESULTS AND DISCUSSION

Table 1 shows the data on the risk reduction management strategies of the barangay officials in the town of Rosario, Northern Samar. As gleaned, the barangay officials are “much managed” on local doctors, nurses and other medical personnel are trained for disasters (3.36) and disaster reduction and response policies are in place (3.35). On the other hand, they are “managed” on local authorities who have provided information to communities in relation to hazards, vulnerabilities, risks, capacities and preparedness action, (3.30); the local barangay unit has enough employees trained in disaster management, (3.27); the barangay has ensured that all communities and family members living in flood prone areas understand the dangers properly, (3.27); the barangay has built an evacuation center for the community, (3.26); and the barangay has disaster preparedness plans, (3.25). Lastly, they are “slightly managed” on training of swimming for men, women, and kids conducted to save themselves during floods (2.45) and the barangay has constructed a place of evacuation for animals (2.26).

As a whole, with a general weighted mean of 2.83, the barangay officials are “managed” as regards risk reduction management strategies.

As gleaned from the data, the barangay officials give priority on the health concerns of the residents in times of disaster. PAHO (2019) puts premium on the multidisciplinary team with health and disaster specialists who need necessary experience and training to collaborate in emergency and disaster response. However, it can be noted that the barangays do not have evacuation facility for animals. In a more humane society, pet disaster preparedness is also of prime importance.

**Table 1. Risk Reduction Management Strategies of the Barangay Officials**

Statements	Weighted Mean	Interpretation
Local doctors, nurses, and other medical personnel are trained for disasters	3.36	Much managed
Disaster reduction and response policies are in place	3.35	Much managed
Local authorities have provided information to communities in relation to hazards, vulnerabilities, risks, capacities and preparedness action	3.30	Managed

The Local barangay unit has enough employees trained in disaster management	3.27	Managed
The barangay has ensured that all communities and family members living in flood prone areas understand the dangers properly.	3.27	Managed
The barangay has built an evacuation center for the community	3.26	Managed
The barangay has disaster preparedness plans	3.25	Managed
The numbers of survival and health resulting from a disaster are dealt with more efficiently	3.22	Managed
Barangay officials have established community and local level information centers to disseminate information about disaster risk reduction management	3.22	Managed
There are local organizations working on disaster reduction	3.17	Managed
There were orientations conducted about disaster risk reduction	3.16	Managed
The barangay officials see to it that the community is prepared, active, and well organized.	3.15	Managed
The barangay officials have utilized multiple communication systems: e.g. radios, TV, public address systems, mobile phones, internet, newspapers, posters, exhibitions, and rallies to ensure they reach the at-risk communities and groups.	3.14	Managed
More number of lives are saved during the first few hours after disaster has occurred through local response teams before help arrives from elsewhere	3.11	Managed
Evacuation plans have been made in advance by the local authorities. Each member of the family is given specific instruction and responsibilities in case of evacuation	3.09	Managed
Information boards are placed in important places like church, schools, stores, and transportation facilities.	3.08	Managed
There is availability of micro-finance services for disaster reduction	3.07	Managed
Equipment and machinery are available for disaster reduction	3.06	Managed
Barangay officials have organized a search and rescue (S&R) team and identify the areas which will be isolated in case of flooding and prepare a plan for the S&R team.	3.06	Managed
Funds are available for disaster reduction and preparedness	3.05	Managed
The barangay has conducted community based-based programs on disaster reduction	3.05	Managed
Hazard specific response drills and simulation exercises and trainings for structural mitigation were conducted in the local barangay	3.02	Managed
There is technical expertise of the barangay officials for disaster reduction	3.00	Managed
Barangay officials have organized a first aid team and ensure it has proper first aid equipment and emergency medicine kit.	2.90	Managed
Barangay officials have explained the actions that individuals, households, and community groups can undertake to prepare for	2.86	Managed

impending disasters, respond to them and recover from their impacts.		
The community has the trained masons who know how to construct typhoon safer house	2.85	Managed
Trainings for food storage to avoid loss during flood were conducted among households	2.85	Managed
Local carpenters have trained for construction of boats for evacuation	2.76	Managed
Individual actions training were conducted to avoid injury and casualty in an emergency	2.71	Managed
Barangay officials have conducted trainings to households and community groups on how to minimize the risk from floods, typhoons, drought, and fire.	2.66	Managed
The barangay have organized study visits for community groups to show model hazard mitigation projects in the community	2.65	Managed
Training of swimming for men, women, and kids were conducted to save themselves during floods during floods	2.45	Slightly managed
The barangay has constructed a place of evacuation for animals	2.26	Slightly managed
<b>General Weighted Mean</b>	<b>2.83</b>	<b>Managed</b>

Table 2 shows the data on the disaster preparedness of the barangay officials in Rosario, Northern Samar. It can be deduced from the table that the barangay officials are “very much prepared” on 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 (4.35). They are however, “much prepared” on always listening to the official warnings issued by local authorities and news reports on the local radio or television in times of adverse weather conditions, (4.18); not throwing anything like cigarette butts, wrappers especially those made of plastic or non-biodegradable objects, anywhere which may clog or block the drainage system, (4.12); not throwing trash in rivers or canals, (4.11); always informing family about plan for typhoons, making sure everyone knows - what is in the emergency kit and where it is kept, (4.09); and seeing to it that I have reasonable stocks of drinking water, canned food and other food items such as instant noodles when there is news about incoming storm, (4.07). On the other hand, they are “prepared” on following flood resistant construction design and materials in the making of their house (3.13).

With a weighted mean of 3.73, the disaster preparedness of the barangay officials is “much prepared.”

The barangay officials are highly knowledgeable on the threats post by the disaster that they make some preparations like securing their essential paper documents. On the other hand, although still “prepared” but they put lesser value on building flood resistant houses.

**Table 2. Disaster Preparedness of the Barangay Officials**

Statements	Weighted 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	4.35	Very much 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.	4.18	Much 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	4.12	Much prepared
I do not throw trash in rivers or canals.	4.11	Much prepared
I always inform my family about plan for typhoons, making sure everyone knows - what is in the emergency kit and where it is kept.	4.09	Much prepared
When there is news about incoming storm, I see to it that I have reasonable stocks of drinking water, canned food and other food items such as instant noodles.	4.07	Much 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.	4.04	Much prepared
I understand the risks when disaster occurs.	4.01	Much prepared
I have ready candles and water-proof matches.	3.84	Much prepared
I find out about the typhoon warning system, particularly where warnings can be obtained.	3.79	Much prepared
I know where to get information about the hazards.	3.76	Much prepared
In preparation for flood, I have a supply of essential medicine for cold, cough, diarrhea, headache, fever and other common illness etc.	3.73	Much prepared
I always have in hand emergency contact numbers and addresses (whom I should inform in case of emergency)	3.71	Much 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.	3.69	Much 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.	3.60	Much prepared
I have access to safe water and foods if disaster strikes	3.58	Much 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.	3.58	Much prepared
I have rope/string hammer and nails to tie things down during storms.	3.58	Much prepared
I have safe storage of essential items like food, medicine, etc.	3.48	Much prepared
I know how to apply first aid in cases of burns, wounds, etc.	3.46	Much prepared
I have portable radio and torch with fresh batteries	3.43	Much prepared
I brace overhead light fixtures to prevent them from falling during the earthquake	3.43	Much prepared
I have an evaluation plan in case of emergency.	3.42	Much prepared
I have prepared a flood emergency kit.	3.42	Much prepared
I have extra radio batteries that can be used in case of power losses.	3.40	Much prepared
I have followed flood resistant construction design and materials in the making of my house.	3.13	Prepared
<b>General Weighted Mean</b>	<b>3.73</b>	<b>Much Prepared</b>

Table 3 presents the problems encountered by the barangay officials in full implementation of the DRRM. Of the 29 problems, the lack of equipment/machinery for risk reduction ranks first, (65). It is followed by people are not serious about disaster drills (for typhoons and earthquakes); they think that drills are jokes, (55); then by poor awareness of barangay officials on their responsibility in times of disaster, (55); no breastfeeding rooms for mothers in the evacuation area/center, (51); and no sanitary napkins and hygiene kits are provided in the evacuation area/center, (47) and lack of facilities which will cater to the various needs of the elderly and persons with disability (PWD), like wheelchair, (47).

Although still considered as problems encountered, however, these did not matter to the majority - misrepresentation of residents in the disaster preparations of the barangay council; slow local government intervention; and poor information dissemination on the updates of incoming disasters, which all incur the same frequency of 26; along with fake news/misinformation about the disasters, (22); no evacuation area/center and residents are un-informed, hence, they are not

prepared for disasters which both have 18 respondents; communication channels like radio, TV, posters, and social media are not used for information warnings on the disaster, (16); and the LGU discourages barangay officials to participate in DRRM, (6).

While the barangay officials can manage the risk reduction measures and are much prepared for the disaster, they still lack equipment/machinery for risk reduction. This means that with the availability of such, then their management and preparedness level could also be upgraded.

**Table 3. Problems Encountered by the Barangay Officials in the DRRM Implementation**

Problems Encountered	Frequency	Rank
Lack of equipment/machinery for risk reduction.	65	1
People are not serious about disaster drills (for typhoons and earthquakes). They think that drills are jokes	56	2
Poor awareness of barangay officials on their responsibility in times of disaster	55	3
No breastfeeding rooms for mothers in the evacuation area/center	51	4
No sanitary napkins and hygiene kits are provided in the evacuation area/center	47	5.5
Lack of facilities which will cater to the various needs of the elderly and persons with disability (PWD), like wheelchair	47	5.5
Delayed relief operations	46	7
Lack of knowledge and skills in DRRM.	43	8
Lack of time preparation for disaster.	42	9.5
Slow coordination among barangay officials.	42	9.5
Insufficient fund for DRRM-related trainings of barangay officials.	41	11
Not all households receive relief goods	39	12
Lack of support of other barangay officials on DRRM activities.	32	14
No separate rooms and toilets for women in the evacuation area/center	32	14
No monitoring or tracking is conducted to identify the affected households and damage to properties	32	14
The evacuation area/center has no enough space	31	17
Inadequate disaster related-trainings for people's organizations and residents	30	18
Lack of support from the community/civic society.	29	19
No disaster drill (for typhoons and earthquakes) is conducted.	27	20.5
Poor accountability from the LGU	27	20.5
Misrepresentation of residents in the disaster preparations of the barangay council	26	23
Slow local government intervention	26	23
Poor information dissemination on the updates of incoming disasters	26	23



Fake news/misinformation about the disasters	22	25
No evacuation area/center	18	26.5
Residents are un-informed, hence, they are not prepared for disasters	18	26.5
Communication channels likes radio, TV, posters, and social media are not used for information warnings on the disaster	16	28
The LGU discourages barangay officials to participate in DRRM.	6	29

\*multiple responses

Table 4 shows that the barangay officials in Rosario, Northern Samar should give priority in the purchase of equipment/machinery for risk reduction; to influence the target adopters for full participation during the conduct of disaster drills; to strengthen the capacity of the barangay officials by raising awareness on their responsibility in times of disaster, to allocate meaningful funding for the trainings of the barangay officials, and to encourage them to be supportive on DRRM-related activities; and to provide the needs of the most vulnerable sectors, i.e. gender-sensitive rooms for breastfeeding and gender-sensitive kits, inclusive of sanitary napkin and hygiene at the evacuation facility, and construction of facilities to cater to the needs of the persons with disability. Disaster education, which includes education on disaster risks, mitigation and preparedness strategies, is one approach to reducing the negative consequences of disasters (Smith 1993; Mulyasari et.al. 2011)

The realization of the abovementioned intervention lies on the actual purchase of needed equipment and technology, holding of disaster literacy and other related trainings, strict simulation drills, construction of gender-responsive facility, provision of gender-sensitive kits and the needs of the PWDs at the evacuation center, and through close partnership and coordination with the aligned offices, the local government, MDRRMO, and the private sector. MCDEM (2005) suggests that disaster management participants such as people who provide emergency services, welfare agencies, lifeline utility providers, researchers, volunteer groups, community groups and all other key stakeholders to disaster management must well coordinate individuals at regional, local and agency levels.

**Table 4. Intervention Program Design**

Concern	Intervention Outcomes	Mechanisms	Partners
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Lack of equipment/ machinery for risk reduction	<ul style="list-style-type: none"> <li>Provision of DRRM materials/ machinery</li> </ul>	<ul style="list-style-type: none"> <li>Purchase of DRRM materials/ equipment/ machinery</li> </ul>	<ul style="list-style-type: none"> <li>LGU, MDRRMO</li> <li>Private sector</li> </ul>
People are not serious about disaster drills (for typhoons and earthquakes). They think that drills are jokes	<ul style="list-style-type: none"> <li>Raise awareness on the importance of drills</li> </ul>	<ul style="list-style-type: none"> <li>Disaster risk literacy and strict actual simulation</li> </ul>	<ul style="list-style-type: none"> <li>LGU, MDRRMO</li> </ul>
Poor awareness of barangay officials on their responsibility in times of disaster and lack of knowledge and skills in DRRM	<ul style="list-style-type: none"> <li>Highly knowledgeable and skillful barangay officials on DRRM.</li> </ul>	<ul style="list-style-type: none"> <li>Info-drive campaigns through orientation and seminar-workshops on DRRM</li> </ul>	<ul style="list-style-type: none"> <li>LGU, MDRRMO</li> </ul>
No breastfeeding rooms for mothers in the evacuation area/center	<ul style="list-style-type: none"> <li>Make breastfeeding rooms in evacuation centers a priority</li> </ul>	<ul style="list-style-type: none"> <li>Construction of breastfeeding rooms</li> </ul>	<ul style="list-style-type: none"> <li>LGU, MDRRMO</li> </ul>
No sanitary napkins and hygiene kits are provided in the evacuation area/center	<ul style="list-style-type: none"> <li>Inclusion of gender-responsive needs in the relief distribution</li> </ul>	<ul style="list-style-type: none"> <li>Purchase of sanitary napkins and hygiene kits</li> </ul>	<ul style="list-style-type: none"> <li>LGU, MDRRMO</li> </ul>
Lack of facilities which will cater to the various needs of the elderly and persons with disability (PWD), like wheelchair	<ul style="list-style-type: none"> <li>Provision of socially-responsive needs of the elderly and PWDs</li> </ul>	<ul style="list-style-type: none"> <li>Fund allocation for the purpose and lobbying with governmental and private agencies for support</li> </ul>	<ul style="list-style-type: none"> <li>LGU, MDRRMO, MSWDO</li> <li>Private sector</li> </ul>
Insufficient fund to facilitate trainings of barangay officials.	<ul style="list-style-type: none"> <li>Meaningful fund to support the trainings for barangay officials</li> </ul>	<ul style="list-style-type: none"> <li>Increase fund allocation for the trainings of barangay officials</li> </ul>	<ul style="list-style-type: none"> <li>LGU, Barangay Council</li> </ul>
Lack of support of other barangay officials on DRRM activities.	<ul style="list-style-type: none"> <li>Highly supportive barangay officials on DRRM activities</li> </ul>	<ul style="list-style-type: none"> <li>Timely monitoring on the participation of the barangay officials on DRRM activities.</li> <li>Requiring the barangay officials to submit timely accomplishment reports</li> </ul>	<ul style="list-style-type: none"> <li>Barangay Council</li> </ul>

## CONCLUSION

Using descriptive approach, the project study was conducted to determine the disaster risk reduction management strategies and disaster preparedness of the barangay officials in Rosario, Northern Samar. The findings reveal that the barangay officials are “managed” as regards risk reduction management strategies and “much prepared” on disaster preparedness. There are 29 problems encountered by the barangay officials in full implementation of the DRRM which range from lack of equipment and machinery for risk reduction and no provision of gender and social responsive needs of the victims and evacuees to poor participation of the residents in the drills. Hence, it is recommended that the intervention program design be considered and or reviewed.

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