

Disaster Risk Reduction Management Services in the Municipality of Santa Cruz, Province of Laguna: Input to SUC's Extension Program on DRRMS Education

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ABSTRACT

A research involving the Assessment of the Implementation of Disaster Risk Reduction Management (DRRM) functions and services provided by the council of Santa Cruz, Laguna is described in this paper.

The descriptive method of research was employed in this study to gather the necessary data and information on the disaster risk reduction management and services.

Input variables on the functions included are as follows: Research and Planning, Administration and Training, Operation and Warning. While on the service being offered by Local Government Units (LGU) was Early Warning System, Search and Rescue, Relief Operation, Evacuation, Health Services, Transportation Services, Security Services, Emergency Management, and Fire Protection.

The goal of the researcher that the determining disaster implementation and the level of perception of the community of Santa Cruz, Laguna on the functions and responsibilities of LGU are approaches that help to attain the goal and objectives indicated in R. A. 10121, and lead to the, 1.) Development of policies and plans of Provincial Disaster Risk Reduction and Management Office (PDRRMO) of Laguna. 2.) Creation of extension programs by the State University and Colleges that greatly help the community before, during and after disaster, since the role and importance of education and school in DRRM in promoting and enabling DRRM has already been identified. State Colleges and Universities involvement in DRRM aims to raised advocacy and public information, education and training, emergency health and medical services, and alternative learning to the victims after humanitarian crises by uplifting the morale and addressing the community issues and needs in holistic manner.

The community is the end- beneficiary of this assessment in as much as they are the recipients of possible extension program by the SUC. Furthermore, through this study, the community able to know what is currently being undertaken in their respective locality.

Keywords

INTRODUCTION

The typhoons that hit the country in recent years have become stronger in intensity and caused far greater damages than past weather disturbances. Typhoon "Yolanda" last 2013 and "Glenda" which battered Luzon and Metro Manila last August 2014 brought heavy rains which submerged several cities, causing countless deaths and several hundred million pesos in damage to property (NDRRM, 2011).

The municipality of Santa Cruz is situated on the banks of Santa Cruz River which flows into the eastern part of Laguna de Bay in the North, by Lumban and Pagsanjan towns in the East. It is approximately 87 kilometers from Manila via Calamba and 105 kilometers via Pililla, in the province of Rizal. It is accessible by land from the nearby 28 municipalities and by water through Laguna de Bay from Manila and some Rizal towns. According to 2010 census, it has a total population of 110,943 people. It is presently classified as a first class municipality in Laguna.

The municipality is prone to typhoon and flash floods because of its tail leading to Laguna de Bay passing the different barangay of Santa Cruz. In anticipation of any form of natural and manmade calamities, Santa Cruz plan a program of action that will be effectively enforced when calamities occur. The program thrust is to pursue the full implementation of the plan, hand-in hand with all government unit to be ready to serve and provide support to the community.

In year 2009, typhoon Santi brought casualties of one (1) death and damages of 4,288 houses while typhoon Ondoy brought casualties of one (1) injured and 3 deaths and damages of 4,137 houses wherein Santi and Ondoy brought damages to infrastructures with a total amount of P 72,000,000.00 and in agriculture amounting of P 16,100,000.00. So, with typhoon Glenda brought casualties of fourteen (14) injured and two (2) deaths and damages of 3,678 houses and in agriculture with a total cost of P 276,905,419.571. (PDRMO, Santa Cruz, Laguna).

Disaster Risk Reduction Management and Services (DRRMS), State Universities and Colleges in Laguna, Extension Training and Services, DRRMS Education

RESULTS AND FINDINGS

Perception on Disaster Risk Reduction and Management Council Functions

Indicator	Mean	Std. Deviation	Interpretation
Research and Planning	3.795	0.643	Agree
Administration and Training	3.866	0.636	Agree
Operation and Warning	3.739	0.632	Agree
Overall Mean	3.800	0.637	Agree

The respondents' perception on DRRM Council functions have an overall mean of 3.800 (SD=0.637) which indicates that DRRM Council was very good, as agreed by the respondents, in facilitating and implementing their functions in terms of research and planning, administration and training, as well as operation and warning.

According to Medury (2001), research and planning in view of risk reduction management involves a multi-disciplinary team expert or people knowledgeable about a diversity relating to disaster risk management. This requires defining the boundaries of what they will strive to achieve, how they will function, clarification of their roles and responsibilities, logistical arrangements and resource needs, meeting procedures, and broader network and communication links for a better planning parameters.

Chatterjee, et.al. (2010) found out on their study that proper administration, training and coordination may influence a variety of external factors as well as those inherent to the coordination system such as governance structure, local capacities for response, funding, timeliness of coordination efforts, stakeholder partnership, composition of coordination mechanism and information management systems.

The activities that are commonly associated with disaster is operation and warning or preparedness which include developing and planning processes to ensure readiness, formulating disaster plans, stockpiling resources necessary for effective response, and developing skills and competencies to ensure effective performance of disaster related tasks.

According to McLuckie, (2008), operation and warning is one of the most important type of disaster communication, allowing the recipients to avoid the threat altogether or to significantly lessen its effect.

Extent of Implementation of DRRM Council Services

Indicator	Mean	Std. Deviation	Interpretation
Early Warning System	3.787	0.674	Implemented to a great extent

Search and Rescue	3.787	0.665	Implemented to a great extent
Relief Operation	3.975	0.666	Implemented to a great extent
Evacuation	3.806	0.700	Implemented to a great extent
Health and Services	3.578	0.626	Implemented to a great extent
Transportation Services	3.474	0.640	Implemented to a great extent
Security Services	3.516	0.614	Implemented to a great extent
Emergency Management	3.517	0.652	Implemented to a great extent
Fire Protection	3.404	0.663	Implemented to a great extent
Overall	3.649	0.652	Implemented to a great extent

The extent of implementation of DRRM Council Services in terms of Early Warning System was 3.787 (SD=0.674); Search and Rescue 3.787 (SD=0.665); Relief Operation, 3.975 (SD=0.666); Evacuation 3.806 (SD=0.700); Health and Services 3.578 (SD=0.626); Transportation Services 3.474 (SD=0.640); Security Services 3.516 (SD=0.614); Emergency Management 3.517 (SD=0.652); and Fire Protection, 3.404 (SD=0.663).

The overall mean rating of 3.649 manifest respondents' agreement that the extent of implementation of DRRM Services was found out to be in a great extent. The responses appear to be homogeneous as shown by the small values of standard deviations.

The findings confirm Balita (2012) in his study that the Bureau of Fire Protection responded to any form of disaster including earthquake-induced collapsed structure incidents. The level of expectations of the public that we serve however fall short because of the current situation and the predicament of the office in terms of quantity or manpower strength, quality of manpower in terms of training; the available tools and equipment, supplies and materials are inadequate.

Relationship of DRRM Functions to the Extent of Implementation of DRRM Council Services

Indicator	Research and Planning	Administration and Training	Operation and Warning	Significance	Strength of Relationship
Early Warning System	0.598**	0.648**	0.578**	0.000	moderate
Search and Rescue	0.682**	0.682**	0.548**	0.000	moderate
Relief Operation	0.613**	0.627**	0.514**	0.000	moderate
Evacuation	0.628**	0.581**	0.534**	0.000	moderate
Health and Services	0.594**	0.644**	0.551**	0.000	moderate
Transportation	0.575**	0.589**	0.508**	0.000	moderate

n Services					
Security Services	0.620**	0.574**	0.506**	0.000	moderate
Emergency Management	0.533**	0.566**	0.509**	0.000	moderate
Fire Protection	0.566**	0.608**	0.557**	0.000	moderate

Sig.(2-tailed)*0.05 **0.01

Research and Planning provides a moderate relationship on the extent of implementation of DRRM services as indicated by the r values: early warning system= 0.598, search and rescue=0.62, relief operations= 0.613, evacuation = 0.628, health and services= 0.594, transportation services= 0.575, security services= 0.620, emergency management= 0.533 and fire protection= 0.566. They are all significant at 0.01 (Sig=0.000).

Administration and Planning provides a moderate direct relationship on the extent of implementation of DRRM services as indicated by r values: early warning system= 0.648, search and rescue= 0.682, relief operations= 0.627, evacuation = 0.581, health and services= 0.644, transportation services= 0.589, security services= 0.574, emergency management= 0.566, and fire protection= 0.608. . They are all significant at 0.01 (Sig=0.000).

Operation and Warning also provides a moderate direct relationship on the extent of implementation of DRRM services as indicated by the r values: early warning system= 0.578, search and rescue= 0.548, relief operations= 0.514, evacuation = 0.534, health and services= 0. 551, transportation services= 0.508, security services= 0.506, emergency management= 0.509, and fire protection 0.557. They are all significant at 0.01 (Sig=0.000).

In regards to this, Abarquez (2011) stated that visioning as one of the participatory variable in research and planning, training and operation and warning, as function of the local officials and, by facilitating a community session on visioning. Team facilitators ask the community members to dream about the kind of “safe community “they want to attain in relation to disaster risk they identified. This is the time when the local authorities, community members and other stakeholders can have a thorough discussion on what they want to achieve in the disaster risk reduction process.

Test of Difference in the respondents rating along DRRM Functions

Area	X1	X2	Mean Difference	t	Sig.	Interpretation
Research and Planning	3.922	3.304	7.618	-5.691	0.000	Significant
Administration and Training	3.850	3.292	7.558	-5.151	0.000	Significant

Operation and Warning	3.734	3.268	7.466	-4.324	0.000	Significant
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Level of Significance = 0.05

It appears that the DRRM Functions along with the three (3) areas namely: Research and Planning, Administration and Training, and Operation and Warning differ significantly as perceived by both respondents from the Local Government Unit (LGU) and the community as indicated by the computed T-value as follows: Research and Planning, t=-5.691(Sig.=0.000), Administration and Training, t=-5.151(Sig.=0.000) and Operation and Warning, t=-4.324 (Sig.=0.000).

This further explains that respondents perceived differently on the DRRM function along research and planning try develop and their strengthen mechanisms for partnership or net working with private sector, NGO and volunteer groups.

According to Gaviola (2010), differences really appeared on the study of the communities responses when it comes to DRRM functions because of the different local expertise, experiences, and knowledge that should be the starting point when conducting planning. The study showed that needs and vulnerabilities are the main focus in the local government units’ research and planning procedure and strategies

Seemingly, Green (2011), asserted a bottom-up approach to program design will involve the community themselves in planning and implementation of DRRM activities and projects. This involves further that when the local people take part in the activities, the better results of the implementation may achieved.

Test of Difference on the respondents rating along DRMM Services

Area	X1	X2	Mean Difference	t	Sig.	Interpretation
Early warning System	3.689	3.331	7.358	-3.029	0.000	Significant
Search and Rescue	3.833	3.267	7.566	-4.978	0.000	Significant
Relief Operation	3.800	3.254	7.546	-4.537	0.000	Significant
Evacuation	3.833	3.252	7.531	-5.464	0.000	Significant
Health Services	3.783	3.258	7.525	-4.794		Significant
Transportation Services	3.800	3.326	7.474	-4.490	0.000	Significant
Security Services	3.600	3.317	7.283	-2.473	0.000	Significant
Emergency Management	3.772	3.245	7.527	-4.635	0.000	Significant
Fire Protection	3.756	3.212	7.544	-4.773	0.000	Significant

It appears that the DRRM Services along the nine (9) areas namely: Early warning System, Search and Rescue, Relief Operation, Evacuation, Health Services, Transportation Services, Security Services, Emergency Management and Fire Protection differ significantly as perceived by both respondents from the Local Government Unit (LGU) and the community as indicated by the T-value as follows: Early warning System, $t=-3.029$ (Sig.0.000), Search and Rescue, $t=-4.978$ (Sig.0.000), Relief Operation, $t=-4.537$ (Sig.=0.000), Evacuation, $t=-5.464$ (Sig.0.000) Health Services, $t=-4.794$ (Sig.0.000), Transportation Services, $t=-4.490$ (Sig.0.000), Security Services, $t=-2.473$ (Sig.0.000), Emergency Management, $t=-4.635$ (Sig.0.000) and Fire Protection, $t=-4.773$ (Sig.0.000).

It further explains that the DRMM Services such as manage to give adequate and prompt assessment of needs and damages at all levels. Integrate and coordinate search, rescue and retrieval or in the same sense, coordinated and integrated system for early recovery implemented of the disaster victims were delivered as implemented differently as perceived by the two groups of respondents. The difference may be explained by the fact that both came from social units.

Hagman (2010), recommended that community should know the meaning of actions to be taken when disaster hits the place. Or recommended action should be specific like: pack-up things, proceed to pick-up point or proceed to evacuation site. In these cases, the community can help themselves as well as the Local Government Unit lessen burden when before and after the disaster happens to the place.

Petal (2012), pointed out that the effectiveness of DRRM Services in one area is highly depends on peoples' perception of coming danger, level of understanding and hazard type acceptance of warning issued to them. Equally important is the credibility of the agency, whose reliability in alerting the public is measured according to its track record in prediction and warning.

CONCLUSION

On the basis of findings and analysis of the study, the following conclusions were drawn:

1. The respondents' perception on DRRM Council functions concluded that DRRM Council was very good, as agreed by the respondents, in facilitating and implementing their functions in terms of research and planning, administration and training, as well as operation and warning.
2. The extent of implementation of DRRM Council Services in terms of Early Warning System, Search and Rescue, Relief Operation, Evacuation, Health and Services, Transportation Services, Security Service, Emergency Management, and Fire Protection concluded to be implemented into a great extent as perceived by the respondents.
3. The respondents' perception has significant relationship to the functions and services of DRRM Council in

terms of Early warning System, Search and Rescue, Relief Operation, Evacuation, Health Services, Transportation Services, Security Services, Emergency Management and Fire Protection.

4. There is a significant difference on the respondents' rating along the independent variable namely: DRRM council functions and DRRM council services.
5. The proposed plan for Risk Reduction Management Services in Santa Cruz, Laguna, serves as guide in identifying the different key area thrusts of SUC's extension program.

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