

## DISASTER PREPAREDNESS IN SAGAY CITY

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### **Abstract:**

*This study utilized a descriptive - correlational research design which examined the extent of implementation of disaster preparedness in Sagay City. The two hundred seventy-four (274) respondents of the study were composed of members of the Local Disaster Risk Reduction and Management Council, Barangay Officials, and Barangay Disaster Risk Reduction and Management Council. The research instrument was adopted from the study of Mabag (2012) which examine the extent of implementation of disaster preparedness of Sagay City as a whole and in terms of mitigation and adaptation, preparedness, response, and recovery and rehabilitation. The finding of the study revealed that the Sagay City has a highly effective extent of implementation of disaster preparedness in all areas mentioned. Further, it revealed that even though there was no significant difference in four areas when grouped according to category. The significant difference in the extent of implementation of disaster preparedness in Sagay City rejected the null hypothesis as there was a significant difference among four areas when grouped according to educational attainment and geographical location. The result of the study is the basis for formulating the proposed enhancement program in strengthening LGU institutional capacity for disaster preparedness.*

**Keywords:** (Mitigation and Adaptation, Preparedness, Response, and Recovery and Rehabilitation)

### **Introduction**

Disaster preparedness is in a state of willingness to contain the effects of a forecasted unfortunate event to minimize the loss of life, reduce the number of injuries, and lessen the extent of damages to properties. It can give rescue, relief, rehabilitation, and other services in consequence of the disaster, and has the capability and resources to continue to sustain its essential functions without being overwhelmed by the demand placed on them (Coppola, 2006).

In the Philippines, disaster risk reduction management gained legal and institutional foundation with the passage of Republic Act No. 10121. The law provided for the development of policies, plans and the implementation of actions and measures about all aspect of disaster risk reduction

and management, including good governance, risk assessment and early warning, knowledge building, and awareness raising, reducing underlying risk factors, and preparedness for effective response and rapid recovery (Philippines, D. R. R. N., 2011).

Ensuring successful outcomes from implementing natural disaster management projects could result in reducing the risks from natural disasters and minimizing the negative impacts on human, social and economic environments. Effectively measuring performance in each of the phases in a project life cycle is necessary to examine the current status and to find out problem areas that require further improvement (Lin Moe et al., 2007).

Emergency and disaster preparedness take effect if an individual is aware of the occurrence of a calamity. It must be known how and what to do in times of occurrence of catastrophes. When a disaster occurs, it must be able to do what to be done to meet the needs of the people such as the basic needs by storing as well as the specific disability-related needs by storing sufficient oxygen, medications and power sources for survival (Blaikie et al., 2014).

Based on experience as a citizen of the country which natural disasters usually happen it is essential to prepare your-self before the onset of a disaster. I remember when a typhoon hit my community, the wall of our house collapse due to the strong gust wind which almost hit my entire family.

The research study has been conceptualized to determine and evaluate the readiness capability and functionality of the Local Government and every Barangay in a disaster preparedness program. It is undoubtedly urgent to see the perspective of emergency preparedness of the City of Sagay, recommend measures, innovations, and strategies to improve the weaknesses, strengthen their capabilities and make every community, people, and resources working in making the City safe and resilient in worst case scenario. This study aims to determine the extent of implementation of the disaster preparedness program of the City of Sagay.

Specifically, this study answers the following questions:

1. What is the extent of implementation of the disaster preparedness program of Sagay City as a whole and regarding mitigation and adaptation, preparedness, response and, recovery and rehabilitation when the participants grouped according to:
  - a. Educational attainment
  - b. Geographical location
  - c. LDRRMC Category

2. Is there a significant difference in the extent of implementation of the disaster preparedness program of the City of Sagay among the four areas when participants grouped according to educational attainment, geographical location, and category?
3. What are the disaster-related cases in the City of Sagay for the past three years?

There were no significant differences on the level of implementation of the disaster preparedness program in the City of Sagay among the four areas when participants are grouped according to educational attainment, geographical location, and category.

This study anchored to the Emergency Management study of Jensen (2010) which explain how people and their organizations collaborate and adapt to dangers, vulnerabilities, and coming about occasions (like emergencies, disasters, catastrophes, and complex humanitarian crises), particularly through activities related to preparedness, response, recovery, and mitigation". Further, Normative Theory explains the framework that regarding specific actions that emergency managers ought to take. It expected that their viability would upgrade on the off chance that they maintain these prescriptive lessons. Most vital among these is the gathering of thoughts usually alluded to as "comprehensive emergency management" (National Governor's Association, 1978). Disasters are particular danger occasions in which a natural wonder or a blend of natural occurrences such as tremors, mass movements, floods, volcanic eruptions, tsunamis, etc., can cause much loss of lives and damage to the property. Almost no part of the earth's surface is free from the impact of natural hazards. Though it may not be feasible to control nature and to stop the progress of natural phenomena, the endeavors could be made to dodge disasters and alleviate their effects on human lives, infrastructure, and property. It is almost impossible to prevent the occurrence of natural disasters and their damages. However, it is possible to reduce the impact of disasters by adopting suitable disaster mitigation strategies. (Feizizadeh et al., 2011).

Disasters are a consequence of perils that affect human and constructed situations, hence recommending that nature, individuals, structures and framework interface in confused ways. Disasters are therefore serious problems as they create devastating short-term and long-term impacts on a group, country, or area. These occasions influence human lives, property, business, framework, and condition (Seneviratne et al. 2010).

Bradley (2010) averred that a successful disaster preparedness program needs to advance the limit of a group to react to the outcomes of an unfavorable occasion by having support systems in place so that people would know what to do and where to go if there is a disaster or a calamity. This outcome can accomplish through the advancement of projects on mitigation and adaptation, disaster preparedness, response readiness, and recovery rehabilitation activities that

would increase the resilience of communities, reduce economic losses, and shorten recovery periods for accident damage.

At the local level, the law stipulates that there shall be an established. Local Disaster Risk and Reduction Management Office in every province, city, and municipality, and a Barangay Disaster Risk Reduction and Management Committee in every barangay which shall be responsible for setting the direction, development, implementation and coordination of disaster risk management programs within their territorial jurisdiction. Buchanan (2006) emphasized that preparedness as a process requires constant and sustained vigilance. Developing a readiness capability is only the first step. Once the basic preparedness activities outlined have been undertaken, it is critical that human and other assets are allotted to keep up and refresh the system and lessons learned in the wake of hazards events, be used to strengthen preparedness in the future. Community planning to prepare for disasters can reduce vulnerability and minimize potential damages. Disaster preparedness and disaster response require collaborative efforts of multi-sectorial organizations to enable a comprehensive approach, addressing needs and providing services (Keeney, 2004)..

England (2008) stated that impact of a future disaster could reduce by incorporating mitigation measures into disaster recovery efforts. By taking the time to identify appropriate ways to reduce future risks, communities could develop greater disaster resilience. Structural mitigation includes the built environment such as levees, dams, and safe rooms, and high buildings, hurricane clamps on roofs, retrofitted interiors and hardened exteriors. Klein, (2005) as cited by Keys et al., (2006) said that Communities are increasingly studying opportunities to enhance adaptive and mitigative capacity, as this would increase the efficiency and effectiveness of adaptation and mitigation measures. Adaptive and mitigative capacity are believed to have significant similarities and be determined by the same set of factors, including economic wealth, technology and infrastructure, information, knowledge and skills, institutions, equity and social capital.

The Philippines now have a stable lawful and institutional stage to successfully deal with the twin issues of disaster risk management and climate change. The passage of the Disaster Risk Management Act and the Climate Change Act, which builds up the Climate Change Commission, is a remarkable accomplishment. These laws herald a paradigm shift away from an emphasis on disaster response to actively reducing flood risks, within the context of adapting to the challenges of climate change (Goddard, 2010). There is tremendous untapped potential and readiness within such organizations, and they should be considered as main partners in disaster preparedness (although they will require investment and internal capacity building to fulfill this role). These practical issues could easily address in emergency planning, relief, and recovery, and there is an increasing range of available guidance from dedicated disability projects. Linking this more efficiently into general disaster preparedness would assist in ensuring that disabled

people are not ignored. However, recovery and planning initiatives must move beyond individual and therapeutic interventions to consider disability regarding of human rights and fundamental exclusion (Priestley & Hemingway, 2007).

## Methodology

This study utilized a descriptive - correlational research design which examined the extent of implementation of disaster preparedness in Sagay City. The respondents of the study were the two hundred seventy-four (274) implementers of LDRRM, comprising the twenty-four (24) members of the Local Disaster Risk Reduction and Management Council, the two hundred twenty five (225) Barangay Officials, and twenty five (25) Barangay Disaster Risk Reduction and Management Council. Participants came from the twenty-five (25) Barangays of Sagay City. The research instrument to be used in this study is adopted from the study of Mabag (2012), to determine the extent of disaster preparedness in Sagay City. The survey questionnaire is composed of two (2) parts. Part 1 deals with the demographic profile of the respondent, Part II will be the review proper utilizing a 5-point Likert-type statement that will measure the extent of implementation of preparedness in the area of mitigation and adaptation, response, recovery, and rehabilitation. At the end of the report, a number from 1 to 5 will be indicated for the participants to check the one that best represents their assessment on the issue that rises. The following scale and oral interpretation used: 5 = disaster preparedness is very highly effective; 4 = disaster preparedness is highly effective; 3 = disaster preparedness is moderately effective; 2 = disaster preparedness is low effective; 1 = disaster preparedness is not effective.

The adopted research survey questionnaire subjected to content and face validity testing by expert composing the panel of jurors who are seasoned implementers of disaster risk reduction and management. Evaluators consist of three (3) experts in emergency management from the City of Cadiz, Municipality of Toboso, and Municipality of Calatrava. The survey questionnaire was validated using the guides set forth by Carter V. Good and Douglas B. Scates, the responses have been analyze and interpreted using the weighted mean and subjected to Cronbach's Alpha Internal Validity Test and alpha value of 4.44 alpha. The reliability coefficient of the instrument was measured using Cronbach's Alpha Internal Reliability Test and alpha value of .787 making the survey questionnaire/instrument "*reliable*".

After validity and reliability establish, the letter was sent, asking approval to conduct the survey questionnaire to the Local Chief Executive and Local Disaster Risk Reduction Management Council (LDRRMC) Chairman before the holding of the study. Upon verbal and written

approval of the request, the researcher gives notice to all concerned agency, and Barangay Captain to inform them of the study to be conducted and to ensure the submission of needed documents. In the conduct of survey questionnaire the researcher personally guided the respondents who were elementary and high school graduate through interpreting it in a local dialect that they could understand. The researcher asked the assistance of the Local Disaster Risk Reduction Management Council (LDRRMC) support staff and volunteers who served as enumerators in gathering data from the target participant. For documentary analysis, records from the LDRRM office and other relevant reports/documents from other agencies are collected and analyzed. These data grouped according to the respective indicators of the different performance areas for the period. Results tabulated analyzed and presented graphically. An interview conducted to those who directly involved in the program to pursue detailed findings. Finally, discussion will be made to validate the gathered data to generate an in-depth analysis further to come up with more factual findings.

The quantitative approach applied in this study. After the data had gathered, the data tabulated and processed electronically and which followed by analysis and discussion of the results, and interpretation.

For problem 1 to determine the extent of implementation of the disaster preparedness program in general and according to their educational attainment, geographical location and LDRRMC category, the descriptive analysis was used.

For problem 2, to determine if there is a significant difference on the extent of implementation of the disaster preparedness program among the four areas when participants grouped according to educational attainment, geographical location and category, comparative analytical scheme was used.

For problem 3 to know the disaster-related cases in City of Sagay for the past years, a documentary analysis used.

In treating the data, the following statistical tools applied:

To determine the extent of implementation of disaster preparedness in Sagay City when taken as a whole and in term of mitigation and adaptation, preparedness, response, and recovery and rehabilitation when participants are grouped according to educational attainment, geographical location and category the mean was used. The mean was chosen to answer problem 1 over the measure of central tendency because the sample mean is “the measure of central tendency that most accurately reflects the population” (Salkind, 2011).

To determine the significant difference in the extent of implementation of disaster preparedness in Sagay City among the four areas when the participants are grouped according to educational attainment, geographical location, and category, for problem 2 analysis of variance (ANOVA) was employed since the variable are grouped into more than two categories. Additionally, a Post Hoc test using Turkey's HSD was used to determine which group created the difference. To determine the related disaster cases in Sagay City for the past three years, a documentary analysis was used for problem 3.

### Results, Discussion, and Implications

The extent of implementation of the disaster preparedness in Sagay City as a whole is highly effective. When the disaster preparedness is group according to educational attainment, college graduate (M=3.91, SD=0.59), college level (M=3.69, SD=0.72), high school graduate (M=3.98, SD=0.68) and elementary graduate (M=3.82, SD=0.68) all have a highly effective implementation. In terms of geographical location, inland (M=3.86, SD=0.70), coastal (M=3.69, SD=0.64), and upland (M=4.00, SD=0.62) all have highly effective implementation; With respect to category, LDRRMC (M=3.95, SD=0.30), Brgy. Official (M=3.88, SD=0.69) and BDRRMC (M=3.75, SD=0.71) all have a highly effective implementation of disaster preparedness.

Kapucu (2005) supported this finding which according to him Fruitful cooperation in pre-disaster, consensus-building emergency planning processes can lead to strengthened organizational connections that enhance the viability of reaction operations and group coordination. The significant capacity of team coordination at this stage is to convey messages identified with open readiness and in addition to teach individuals from the general population in viable arrangements for a potential debacle and to urge them to participate. Such people group preparation can assume a part in the reaction arrange for early cautioning, clearing arrangements, and systems, and nitty gritty circumstance reports on ongoing disasters.

Although there is no significant difference in the extent of implementation disaster preparedness of Sagay City in terms mitigation and adaptation, preparedness, response, and recovery and rehabilitation when grouped according to the category. A significant difference was found the extent of implementation of disaster preparedness in case of college level mitigation and adaptation to college graduate, high school level mitigation, and adaptation high school graduate, college level preparedness to high school graduate, college level as a whole to high school graduate. Coastal preparedness to upland, inland response to upland, coastal response to upland, coastal recovery to upland, and coastal as a whole to upland.

When it comes to educational attainment, the higher the educational level a person attained means, the more knowledgeable he is in disaster preparedness. Although they are not the same when it comes to disaster preparedness knowledge, what matter most is their basic knowledge and skills they have acquired during orientation or basic training that they have attended coupled with their commitment to saving lives and properties of powerful families in times of disasters and calamities.

Analysis of variance (ANOVA) was used to determine the significant difference in the extent of implementation of disaster preparedness in Sagay City as a whole when grouped according to educational attainment, geographical location, and category. There was no significant difference in the extent of implementation of disaster preparedness in Sagay City as a whole when grouped according to category [ $F(2,271)=0.595$ ,  $p=0.552$ ] the null hypothesis was accepted. Meanwhile, there was a significant difference in the extent of implementation of disaster preparedness in Sagay City regarding response when grouped according to educational attainment [ $F(3,270)=2.535$ ,  $p=0.057$ ], geographical location [ $F(2,271)=4.207$ ,  $p=0.016$ ] the null hypothesis was rejected.

The rejection of hypothesis find support to the study of Feizizadeh et al. (2011) stated that disasters are particular danger occasions in which a natural wonder or a blend of natural occurrences such as tremors, mass movements, floods, volcanic eruptions, tsunamis, etc., can cause much loss of lives and damage to the property. Almost no part of the earth's surface is free from the impact of natural hazards. Though it may not be feasible to control nature and to stop the progress of natural phenomena, the endeavors could be made to dodge disasters and alleviate their effects on human lives, infrastructure, and property. It is almost impossible to prevent the occurrence of natural disasters and their damages. However, it is possible to reduce the impact of disasters by adopting suitable disaster mitigation strategies.

Seneviratne et al. (2010) support the significant result which explains that disasters are a consequence of perils that affect human and constructed situations, hence recommending that nature, individuals, structures and framework interface in confused ways. Disasters are therefore serious problems as they create devastating short-term and long-term impacts on a group, country, or area. These occasions influence human lives, property, business, framework, and condition.

Furthermore, the post Hoc Analysis revealed that college level extent of implementation of disaster preparedness is significantly different to the high school graduate extent of implementation of disaster preparedness; additionally, a coastal extent of implementation of

disaster preparedness is significantly different to the upland extent of implementation of disaster preparedness as a whole. Therefore, the null hypothesis is rejected.

Jensen (2010) on his study explain how people and their organizations collaborate and adapt to dangers, vulnerabilities, and coming about occasions (like emergencies, disasters, catastrophes, and complex humanitarian crises), particularly through activities related to preparedness, response, recovery, and mitigation”.

The disaster-related cases in the City of Sagay for the past three years is high especially in the area of human-made disaster where in cases of fire and bush fire get the highest total number of occurrence followed by vehicular accident. When it comes to natural disaster cases of typhoon and flood, get the highest total number of the event followed by earthquake and aftershock, storm surge, whirlwind/tornado and El Niño. A natural disaster happens due to climate change brought by global warming and natural hazards. Human made disaster occurs due to human induce activities. The most significant intervention made was institutionalizing in the system of the Local Government Unit the Disaster Risk Reduction Management Program and making it sustainable for the resiliency of the community. The modernization effort and improved communication nets, any disaster-related cases that may happen in the City of Sagay could be mitigated to minimize, if not eliminate, the loss of life and property.

Although there is no significant difference in the extent of implementation disaster preparedness in Sagay City in terms mitigation and adaptation, preparedness, response, and recovery and rehabilitation when grouped according to the category. A significant difference was found the extent of implementation of disaster preparedness in case of college level mitigation and adaptation to college graduate, high school level mitigation, and adaptation high school graduate, college level preparedness to high school graduate, college level as a whole to high school graduate. Coastal preparedness to upland, inland response to upland, coastal response to upland, coastal recovery to upland, and coastal as a whole to upland.

When it comes to educational attainment, the higher the educational level a person attained means, the more knowledgeable he is in disaster preparedness. Although they are not the same when it comes to disaster preparedness knowledge, what matter most is their basic knowledge and skills they have acquired during orientation or basic training that they have attended coupled with their commitment to saving lives and properties of powerful families in times of disasters and calamities.

Crises preparedness needs community – based strategies to successfully avoid hazards during a crisis. This is by utilizing problem-solving approach. Research – based practices suggest that the

most promising prevention and intervention strategies involve all participants in the community who contribute to plans, strategies, collaboration, and personal preparedness.

Recent local and national attention on sudden unexpected phenomena of natural and human – induced crisis weather this become a primary focus for a community to avoid property damages and deaths. The extent to which LRDDMC are prepared to control such circumstances is an immediate challenge and presents opportunities to coordinate an effort to plan for such event. Being well prepared for a personal crisis or a disaster will raise the level of public confidence in the ability of the LDRRMC to manage such development effectively. Such planning may even a lessen the probability that destruction of lives will occur if steps are taken to (1) identify and implement program and practices designed to avoid a crisis, and (2) develop a disaster plan to facilitate rapid and appropriate response when emergency occur.

### **Conclusions and Recommendations**

Based on the result, the conclusion was as follows:

The highly effective extent of implementation of the disaster preparedness in Sagay City could attribute to the collaboration effort of the local government officials, the Local Disaster Risk Reduction and Management Council, the Barangay Officials, the Barangay Disaster Risk Reduction and Management Council, the community, and the partner agencies. With the kind of partnership, saving lives and properties as well as protecting the community environment will be assured, despite all the odds brought about by the disaster related incidents in the area of jurisdiction of the City. With these, the local government and its stakeholders have shown their initiatives and pro-active action to reduce disaster risk and vulnerability of the City of Sagay.

The Sagay City has the primary responsibility for implementing measures to reduce disaster risk. However, the local government unit cannot do the job alone because effective disaster risk reduction relies on the concerted effort of many different stakeholders.

Despite institutionalization effort of DRRM, the traditional type of leadership by the incumbent political leaders had shown a lack of genuine interest in involving themselves in the management aspect of DRRM, making the program idle for some time and taking advantage of it for other political agenda to their gain and popularity.

Limit advancement is a focal methodology for diminishing risk. Capacity development is needed to build and maintain the ability of people, organization, and societies to manage their risk successfully themselves. This medium preparing and real specific help, as well as the strengthening.

## Recommendations

The following recommendations are formulated based on the findings of the study:

1. Disaster risk diminishment should be a fundamental part of the investment in the sustainable development of the City of Sagay because they have the power as well as the responsibility to protect their constituents by reducing the losses from disasters. Enhancing the capacities of the local government in implementing emergency preparedness program is a must that includes the hiring of additional human resources.
2. Civil society and community members should actively participate in the process of developing, monitoring and evaluating the local disaster preparedness activities which could heighten their commitment and responses by having a stake in the operations of the program.
3. Distinguish and utilize sexual orientation separation data, to guarantee that hazard diminishment procedures are accurately focused and no more helpless and are viable actualized through the parts of both ladies and men.
4. A multi-hazard approach is needed to improve effectiveness. Proposals should involve translating and linking knowledge of a full range of hazards into disaster and risk management. It will work not only at natural disasters, but also factors including political strategies, technical analysis, and operational capabilities and public understanding. This approach will ultimately lead a greater effectiveness and cost-efficiency.
5. Production and distribution of disaster-related paraphernalia are as part of advocacy campaign and should be print in a local dialect.
6. Increasing the degree of accountability of using the resources solely intended for DRRM programs and projects with strict adherence to the policies and guidelines prescribed by the Office of the Civil Defense (OCD), DBM, DILG, and COA. Straightforward physical and financial auditing on the utilization of LDRRM fund, and prescribing administrative sanctions and charges under the laws and regulation on government expenditures.
7. Approval of the Proposed Enhancement Programs by the local authorities to strengthen the LGU institutional capacity for disaster preparedness.

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