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Research Article

The Extent of Implementation of Disaster Risk Reduction and Management In The Third District of Negros Oriental

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ABSTRACT

This study aimed to assess the extent of implementation of Disaster Risk Reduction Management (DRRM) and the extent of stakeholder participation in times of disaster towards the development of a comprehensive community-based Disaster Risk Reduction Management (DRRM) strategic manual. This study employed a descriptive comparative research design utilizing survey methodology. The study was conducted in the Third District of the Province of Negros Oriental. The respondents were LGU officials, PNP, DRRM Coordinators, SK officials, barangay officials, and local residents and were selected using a stratified random sampling technique. The major tool used in this study is a survey questionnaire adopted from the Provincial Disaster Risk Reduction Plan manual. Data were analysed using weighted mean and one-way analysis of Variance (ANOVA). The study found that people are more proactive in preventing disasters than recovering from them. The poor performance of respondents in Disaster Rehabilitation and Recovery (DRRM) was attributed to a lack of expertise and resources. The DRRM program's effectiveness still needs to be explored; hence, there is an urgent need for further study and evaluation to measure its impact. Communities often lack the means and capacity to respond effectively, emphasizing the need for empowering and involving local populations in disaster management. Insufficient resources, capacity, and collaboration between stakeholders hinder the implementation of disaster management programs, resulting in inadequate results and a loss of confidence in the government's ability to address disaster management needs. An internal disaster response plan should be in place in every barangay and activated during and immediately after disasters. When chaos and devastation from a disaster demand capability beyond those that barangays can afford, Local Government Units (LGUs) and the National Government are supposed to respond. Designated Barangay Disaster Response Teams and volunteers may also help.

Keywords: *Disaster Risk Reduction Management, Barangay Disaster Response Team, Comprehensive Community-Based Disaster Risk Reduction Management (DRRM) Strategic Manual, Descriptive Comparative, Negros Oriental*

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Introduction

Globally, the frequency of disasters has increased in recent years. These disasters devastate communities and often cause loss of life, infrastructure damage, and the displacement of residents. According to the "Centre for Research on the Epidemiology of Disasters" (CRED), 2021 was the fourth most disastrous year globally in the last two decades, with 432 natural hazards (excluding biological hazards), 10,492 deaths, 101.8 million people affected, and US$ 252 billion in economic losses. In particular, India is a disaster-prone country because of its location and climate. It is located in a seismically active zone, with many areas falling into zones five and four. Therefore, it is prone to earthquakes, floods, cyclones, landslides, and other natural disasters. India is also vulnerable to extreme weather events such as heat, droughts, and cold waves. Historically and collectively, these disasters have caused significant damage to life and property and reshaped many people's lives.

The phases of disaster management, including mitigation, preparedness, response, and recovery, have been successful in their respective roles. The mitigation phase, for instance, has effectively prevented the occurrence of disasters and reduced their negative impacts. In the disaster preparedness phase (DPP), communities and organizations have implemented measures that have significantly improved their readiness and capacity to manage and respond to disasters effectively. The response phase has seen immediate actions being taken to mitigate the effects of a disaster, such as successful search and rescue operations, emergency medical care, and the efficient distribution of essential supplies and resources. The final phase, recovery, has focused on recovering and rebuilding affected communities through successful debris removal, infrastructure restoration, psychosocial support, and economic revitalization.

The Philippines, ranked third in the World Risk Report for catastrophe risk, faces unique challenges in disaster risk management. With 74% of its population and over 60% of its land area vulnerable to hazards, the country's position in the global disaster risk landscape underscores the need for tailored solutions and strategies.

The increasing frequency of disaster risks due to natural hazards such as typhoons that hit the Philippines over the past years has become a significant concern of disaster risk reduction managers, especially in the Province of Albay, a typhoon highway. Local and national legislations have begun to address this issue by capacitating the local government units (LGUs) so that communities can prepare, respond, and recover (better) from the impact of disasters. The purpose of the paper of Tanvir (2015) is to examine the contribution of the government-led education program through the Climate Change Adaptation and Disaster Risk Reduction and Management Training Institute, most commonly known as the Climate Change Academy, to the overall disaster risk reduction processes for community resilience building in Albay. To be able to substantiate the Academy's contribution, this paper used the socio-ecological model of change and organizational behavior concept to evaluate the factors that contribute to behavioral changes of the staff of LGUs who underwent the training as well as changes in their workplace policies and practices as a result of the training program. Following this, these changes were explained further by looking at how the concept of education for disaster risk reduction (EDRR) was carried out in the Academy's training program to help achieve the desired results in building the LGUs' capacities. For this paper, data was collected mainly through a tracer study of 11 former participants of a particular training activity and in-depth interviews with individuals directly or indirectly related to the Academy. It was argued in his paper that capacities and skills were built and that positive changes in the participant's behavior were observed after undergoing training in the Academy and that these changes have helped reduce disaster risks in their respective communities, which in effect contributed to the community resilience building effort of the Province of Albay.

One of the critical challenges in Philippine development is the urgent need for local government units to engage in collaborative arrangements on the management of common resources in the context of disaster risk and reduction. In addition, certain constraints indicated in Philippine policies and laws, like the

Local Government Code of 1991, contribute to bridging the relationship between the local government entities. In LGC, the local autonomy specified the significance of spatial boundary, financial resource management delimitation, and political subdivision in the desire to cooperate in the administration of overlapping resources. Understanding the fact that disasters recognize no boundaries, the environmental sustainability of common pool resources is now at stake. The study takes into consideration the case of the Marikina Watershed and Marikina River. It highlights the experiences of some local government units in managing environmental degradation and the absence of effective governance of the river and watershed. The paper utilized a qualitative approach and descriptive research design. The study found that the management of common resources like the Marikina River and Watershed in the context of mitigating disasters required the urgent and collective collaboration of nearby local government units and stakeholders.

The Third District of Negros Oriental is not an exception; because the district is located in an area that is vulnerable to several different natural disasters, including landslides, earthquakes, typhoons, and flooding, it is constantly faced with challenges in reducing and managing the risks brought on by these occurrences. The district, which relies on agriculture, fishing, and tourism, faces significant risks due to rapid urbanization, environmental degradation, and climate change. However, the importance of community-based resilience cannot be overstated. It empowers residents and stakeholders, making them integral to the disaster management process and giving them a sense of control and responsibility.

Furthermore, the district has experienced devastating disasters, such as the Bohol earthquake in 2013 and the widespread flooding caused by Tropical Storm Sendong in 2011, resulting in loss of lives, infrastructure damage, community displacement, and economic disruption. The Philippine government, through the National Disaster Risk Reduction and Management Council and the Department of the Interior and Local Government, has implemented effective policies and initiatives to strengthen disaster risk reduction and management capacities at national, regional, and local levels in response to these concerns. These efforts have significantly improved resilience and lessened the adverse effects of disasters, including the formulation of the Philippine Disaster Risk Reduction and Management Act of 2010 and the development of the National Disaster Risk Reduction and Management Plan (PDRMA 2010).

Therefore, The Philippine government has created laws to mitigate the impact of natural and human-induced disasters, aiming to enhance the resilience of vulnerable communities and reduce damage and loss of lives and property. The Philippine Disaster Reduction and Management Act, also known as RA 10121, provides new policies and plans for implementing various measures in all phases of disaster risk reduction (DRRM). Enacted in May 2010, the Philippines Disaster Risk Reduction and Management (PDRRM) Act of 2010, commonly referred to as Republic Act 10121, offers a complete disaster risk management approach that is all-hazard, multi-sectoral, inter-agency, and community-based. The goal of the National Disaster Risk Management Framework is to give agencies and local government entities plans, structures, assignments, and policies for handling emergencies and catastrophes; thus, the goal of this plan is to manage disaster risk at all levels in a way that is responsive, integrated, efficient, and cohesive (Patungan et al., 2019).

Moreover, the Philippine Disaster Risk Management Act (RA 10121) aims to enhance disaster management capacities at individual, organizational, and institutional levels by mainstreaming disaster risk reduction in various sectors. It encourages participation from NGOs, private sectors, community-based organizations, and community members in disaster management. However, it hinders the full involvement of Local Government Units and communities in governance. The Act requires local governments to allocate 5% of their budgets as calamity funds, with 70% for preparedness and 30% for response and recovery (Centeno et al., 2022).

Subsequently, despite the Philippine DRRM Act of 2010, the COA (2019) report identified the areas for improvement of the country's DRRM, such as lack of capacity, systematic

distribution, and inadequately trained and equipped response teams. The assessment further unveiled the poor information management on donors, governance aspects, and analysis of government spending. Although numerous programs have been developed for disaster preparedness and damage mitigation, studies have yet to determine disaster awareness in communities, especially in localities like barangays, municipalities, or even in a district or province. There is a need to strengthen partnerships and improve working methods among stakeholders.

Disaster response is the least implemented thematic area in the DRRM program, according to LGU administrators. This is because communities' efforts to develop themselves are hindered by spending on disaster response and recovery, often only restoring pre-existing conditions that are already vulnerable. This results in communities being stalled in improving and escaping poverty (Tejero et al., 2021). Moreover, testing disaster plans—like drills—may not be conducted to evaluate their efficacy before the occurrence of threats. The Philippines does a lousy job of managing disasters, especially regarding using funds, information management, leadership, monitoring, cooperation, and coordination with other stakeholders. Its prior attempts at restoration and rehabilitation have been unsuccessful. (Office of Civil Defense [OCD] 2020).

According to Aggarwal and Dwivedi (2022), communities have a crucial role in mitigating disaster's effects since they are particularly susceptible to and susceptible to its effects. They should be included in disaster management from the start and assisted with programs to build their capacities and links so that they may aid in overcoming the catastrophe's effects because of their extensive knowledge of local geography, resources, and livelihood possibilities. They are the first to feel the effects and the first to help others who are hurt. Hence, the barangays need to be self-sufficient in their capacity to respond to emergencies and not depend on the city/municipality or province (Malahay & Estrope, 2018). Thus, the significance of responsibility does not end there; instead, it must be expanded to include all levels of government, individuals, families, the private sector, and communities to improve disaster preparedness and resiliency.

With an emphasis on bridging the gap between pre-disaster activities and post-disaster intervention and between structural/non-structural mitigation, resilience incorporates both the concepts of readiness and reaction within the dynamic systems. The ability of disaster-stricken communities to rebuild their economic foundations and instil fundamental safe behaviors among their members is at the heart of this idea. These abilities and practices can significantly enhance the community's safety and resilience, but they will only have an effect if people know their importance (Abrash et al., 2021). Disaster resilience refers to the ability of individuals, communities, organizations, and states to adapt to and recover from hazards, shocks, or stresses without compromising long-term prospects for development (Agapito, 2021). The study of Abenir et al. (2022) shows that resilience to disasters requires good disaster risk governance, often called disaster governance or adaptive governance. Managing and reducing catastrophe and climate-related risk requires coordination between governmental authorities, public workers, media, the commercial sector, and civil society at local, national, and regional levels.

However, community-based leadership is crucial in disaster administration. Still, there is a lack of research on its benefits and drawbacks, especially in the context of small island communities like those in Negros Oriental. Extreme weather events, cyclones, coastal floods, erosion, biodiversity loss in coastal ecosystems, changes in precipitation and runoff, and land subsidence all pose severe threats to small island settlements (Alimen et al., 2021). These hazards endanger the livelihoods of island residents and drive up the price of catastrophe response and rebuilding. Overall, it leads to a decrease in resistance. Improved efforts for prevention and adaptation might lessen the effects of climate-related hazards. Despite this, government agencies need more resources for preventative actions whose benefits may only become apparent temporarily. To sum up, despite the absence of obvious political rewards in the short term, robust and ethical community-based leadership is required to engage in

readiness and adaptation measures today to ensure a better tomorrow (Quileza, 2020).

On this account, the Third District of Negros Oriental is characterized by its hilly terrain, with many hills reaching the sea, causing flooding and strong waves. Most municipalities and cities are located along the sea and mountains, causing significant damage. Even the recent typhoons Oddette and Paeng devastated the majority of the district. Siaton, Sta. Catalina and Bayawan, the largest municipalities, were severely affected due to their location between mountains and seashores. Therefore, effective disaster risk reduction management (DRMM) is crucial. Additionally, a challenge usually encountered by local government units, including the local government unit, is delivering effective services; some fail to do so because of the weak capacity of its disaster risk reduction management (DRMM) officials and staff (Resuello, 2020). Besides, as reiterated by the study of Almario et al. (2022) shows that despite efforts to improve the institutional framework for disaster management, most cities and municipalities in the country continue to encounter administrative policy challenges in cooperation between LGUs and disaster risk management. In addition, Bacus (2020) pointed out that the need for a central coordinating authority is the most significant obstacle to strengthening the country's institutional structure for disaster management, a nationwide problem for most cities and municipalities.

Also, the results of the study of Baquiran et al. (2017) also display two significant voids in the localization of disaster resilience features. One area in which all LGUs collectively fell short was in meeting standards for catastrophe survivors' involvement in recovery efforts. For instance, the documents do not address participation in post-disaster planning and recovery, which stands in stark contrast to the current resilience discourse in international frameworks and disaster scholarship, both of which stress the importance of involving disaster survivors in post-disaster decision-making and recovery strategies to help ensure that communities affected by disasters not only recover but "bounce forward" in their resilient capacities. Therefore, it is essential to gain insight from the current methods in Kesennuma, Japan, where residents' active participation has facilitated restoring both human lives and physical environments. Disaster victims' agencies must be upheld, and their needs and perspectives must be prioritized in light of such experiences, which need a rethinking of the praxis of disaster recovery in local disaster management planning.

The study of Ner et al. (2022) showed that resilience was firmly integrated across the LGUs' LDRRMPs' theme areas, including governance, risk identification, financial considerations, societal capacity, infrastructure protection, and preparedness and response. However, more robust integration was found between urban development and institutional capacity, and resilience was found to need to be better integrated in the fields of ecosystem conservation and recovery. Moreover, community-based resilience and DRR efforts have been discovered in various contexts across the disaster continuum. However, there are still significant voids in both theory and application. Existing studies need several key areas, most notably a comprehensive picture of who is doing what, where, and when concerning resilience and disaster preparedness. As a result, there is no consolidated analysis of the effects of various forms of preparedness in the Philippines (Lao et al., 2022).

Therefore, the significance of implementing efficient disaster risk reduction and management (DRRM) strategies has been highlighted by the Third District of Negros Oriental's higher incidence and severity of disasters in recent times. It is still necessary to evaluate the degree to which local governments have implemented the policies and programs put in place by national and local governments to improve disaster resilience. It is essential to comprehend the Third District's current state of DRRM implementation to find potential for development and identify gaps and obstacles.

Thus, the purpose of this research is to investigate the level of DRRM implementation in Negros Oriental's Third District through an analysis of multiple DRRM dimensions, such as policy structures, organizational structures, risk evaluation, warning systems for emergencies, facility resilience, capacity development, and involvement of the community, this study

aims to offer helpful information on the efficacy of DRRM initiatives within the region. Accordingly, the study's objectives are to evaluate the extent of implementation of the Disaster Risk Reduction Management (DRRM) program in terms of disaster prevention and mitigation, disaster preparedness, disaster response, and disaster rehabilitation and recovery.

Furthermore, to identify the challenges encountered by the SK and Barangay Officials, DRRM Coordinators, LGU Officials, and PNP and Local Residents regarding implementing DRRM programs regarding human, Human resources, Budget, capacity, and mechanism. Lastly, to provide a possible avenue for enhancement through a proposed manual. Additionally, this study attempts to find possibilities and gaps for enhancing disaster resilience in the area by evaluating the Third District of Negros Oriental's DRRM implementation. The results will guide interventions and policy recommendations to strengthen DRRM procedures and the district's resilience to and recovery from disasters. Therefore, the ultimate objective is to create more resilient communities in the Third District of Negros Oriental that can manage and lower the risks of disaster-stainable development.

Lastly, this study might be significant and beneficial to the following: The findings of this study might be necessary for the PNP Chief to employ essential need approach planning that gives priority to the provision of essential services such as the security of the respondents of each covered area of responsibility before, during, and after the occurrence of the disasters.

Also, each municipality's officials and different barangay officials might use the findings to guide the formulation of policies and plans for reconstructing and improving existing policies and practices in reducing, mitigating, and responding to disaster risk in the covered areas. The same goes for the Local Government Unit, which will benefit from the findings of this study as it provides the needed materials and services to implement the DRRM Program better since many indicators will be identified as to what the LGU lacks and needs. Moreover, the community/residents will benefit from the findings of this study as it provides awareness, preparedness, response, and mitigation.

Furthermore, the study on disaster risk reduction and management (DRRM) implementation in the Third District of Negros Oriental has the potential to benefit various stakeholders involved in disaster management, community development, policymaking, and research. Lastly, the findings can inform policy formulation, resource allocation, and capacity-building efforts to enhance DRRM implementation in the Third District. Local authorities, including municipal and barangay officials, can benefit from the study's insights on the effectiveness of existing DRRM initiatives, areas for improvement, and best practices to enhance disaster resilience at the grassroots level.

This study aimed to assess the extent of implementing Disaster Risk Reduction Management (DRRM) and the extent of stakeholder participation in times of disaster towards developing a comprehensive community-based Disaster Risk Reduction Management (DRRM) strategic manual.

Specifically, the researcher aims to determine answers in the following questions:

1. What is the extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP and the Local Residents in terms of the following areas;
   1.1 Disaster Prevention and Mitigation;
   1.2 Disaster Preparedness;
   1.3 Disaster Response; and
   1.4 Disaster Rehabilitation and Recovery?
2. Is there a significant difference in the assessment of the SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP and the Local Residents as to the implementation of the DRRM program?
3. What are the challenges encountered by the SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP and the Local Residents as to the implementation of DRRM programs in terms of;
   3.1. Human resources; and
   3.2. Budgetary, capacity and mechanism?
4. Based on the results of the study, what comprehensive community-based Disaster Risk Reduction Management (DRRM) strategic manual may be proposed?

Theoretical Framework

This study was anchored on Strategic Theory by Freeman (1984)

Strategic Theory, as developed by Freeman (1984), provides a framework for recognizing how organizations effectively organize their assets and abilities to accomplish their goals and objectives. Strategic Theory can help stakeholders plan, organize, and execute actions to decrease disaster risks and improve resilience when adopting risk reduction management in Negros Occidental. Based on Freeman's (1984) Strategic Theory, stakeholders play critical roles in disaster management. Residents, groups, organizations, institutions, societies, and the environment are commonly seen as actual or potential stakeholders. This theory should consider the roles of decision-makers, their choices, and who benefits from the results of the choices made. Stakeholders are interested in an organization's actions and have the power to influence them, or they may impact them depending on whether the organization's goals—such as planning to prevent and reduce any disaster that might occur in the most vulnerable area—are thriving. Stakeholder theory is an organizational management theory used to describe the management environment for many years. According to stakeholder theory, institutions' welfare is optimized by satisfying the requirements of their primary customers. Stakeholder theory increasingly emphasizes power and legitimacy. This power has a significant impact on boosting constituent awareness in the community.

Furthermore, power and legitimacy are two distinctive stakeholder attributes in stakeholder theory. The power of stakeholders allows them to mobilize political forces and to withdraw resources from the organization. These suggest that power and legitimacy allow them to take proactive or reactive approaches in the decision-making process. Therefore, stakeholder theory could be a pivotal pillar for supporting the theoretical framework in developing a disaster response index and examining their proactive or reactive approaches against disaster. Power and legitimacy help stakeholders bring about the desired outcomes; hence, these attributes are crucial for stakeholders to take proactive approaches against disaster in the built environment. In other words, a combination of power and legitimacy can create authority for a stakeholder's firm to take proactive responses independently. However, the decision-making process definitely influences stakeholders to migrate from a proactive approach to a reactive response, or vice versa.

Through the application of strategic theory to the examination of DRRM implementation in the Third District of Negros Oriental, researchers can acquire a greater understanding of the variables impacting the degree of effective implementation of DRRM measures.

In order to increase the region's resilience to disasters, this research can help guide recommendations for strengthening leadership practices, coordination systems, resource allocation, and adaptation measures. Thus, by applying strategic theory, participants involved with risk reduction management implementation in Negros Occidental may develop a strategic perspective and approach to efficiently handle resources, establish collaborations, adapt to change, and provide strategic leadership to achieve the overarching goal of reducing disaster risks and increasing regional resilience. Strategic Theory provides stakeholders with a complete framework for strategically planning, coordinating, and executing risk reduction measures, ultimately contributing to Negros Occidental's resilience and sustainability in the face of calamity.

Meanwhile, in the study of Seng 2016, emergency and participation intersect to form the basis of Community-Based Disaster Risk Reduction and Management (CBDRRM). His article has three aims. First, it explores the criticisms of participatory development in CBDRRM. Second, it highlights how disasters provide insights into participatory development when disasters are viewed not merely as terrible events but as catalysts for social change. Third, the article contends that, despite its flaws, CBDRRM is neither hegemonic nor oppressive but can be adapted to the needs and cultures of communities. The article calls for an empathetic participation form and room for diverse partners to work together.

Methods

The study utilized a descriptive comparative research method to compare at least two macro-level cases in which one object of investigation is relevant to the field. Comparative research distinguishes itself from non-comparative work by attempting to explain differences and similarities between objects of investigation and interactions between objects against their contextual conditions. It moves beyond single-case analysis (Lopez & Azorin, 2014).

Using this design, the assessment of the LGU officials and PNP, DRRM coordinators, SK and barangay officials, and residents on implementing the disaster risk reduction management program was described, compared, and analysed. The respondents' insights regarding the same were evaluated; thus, a survey questionnaire determined the answers of the LGU officials and PNP, DRRM coordinators, SK and barangay officials, and residents to answer the study's objectives.

Research Locale

The study was conducted in the Third District of the Province of Negros Oriental. Specifically, it was conducted in the Municipality of Valencia, Municipality of Bacong, Municipality of Dauin, Municipality of Zamboanguita, Municipality of Siaton, Municipality of Santa Catalina, and Municipality of Bayawan. The province is predominantly hilly, and in many places, the hills reach the sea, thus producing precipitous cliffs. Moreover, most of the municipalities and cities that are part of this district are located along the sea and hilly mountains; thus, flooding and strong waves are experienced by the residents in any month of the year.

Hence, farming and fishing are the familiar sources of income for these communities. Thus, the DRRM program plays a pivotal role in the lives of the respondents living in this district, and it was greatly devastated since the municipalities are located between the mountains and seashores.

Population and Sampling Technique

The study used stratified random sampling. The data is divided into subgroups that share characteristics such as age, gender, sex, and education (Creswell, 2013). A sample is taken from each stratum. The characteristics of each stratum can be compared and estimated. Furthermore, the variability of systematic sampling is reduced. Moreover, the sampling concept involves collecting a percentage, analyzing the smaller group, and then generalizing the findings to the larger population from which the sample was chosen.

As a result, the research develops criteria for creating a sample size of responses by considering the whole population of respondents to the study. The criteria for choosing the respondents are residents who are residing in the Third District of the Province of Negros Oriental, who also experience the disaster, and 3 years and above of residency within the area. Therefore, the population of the study were SK and Barangay Officials, DRRM Coordinators, LGU Officials, and PNP and Local Residents.

The following data reflects the distribution of the respondents by municipality in the Third district of the Province of Negros Oriental:

Table 1. Distribution of Respondents

Municipality / City	SK and Barangay Officials	DRRM Coordinators	LGU Officials and PNP	Local Residents	TOTAL
Valencia	10	12	12	10	44
Bacong	10	12	12	10	44
Dauin	10	12	12	10	44
Zamboanguita	10	12	12	10	44
Siaton	10	12	12	10	44
Sta Catalina	10	12	12	10	44
Bayawan	10	12	12	10	44
Basay	10	12	12	10	44
TOTAL	**80**	**96**	**96**	**80**	**352**

Research Instrument

The primary tool that was used in this study is a comprehensive survey questionnaire. This questionnaire, meticulously adopted from the Provincial Disaster Risk Reduction Plan manual, was designed to leave no stone unturned in establishing the extent of DRRM implementation and the extent of stakeholders' participation. It was based on the critical indicators' checklist provided in the Disaster Risk Reduction Manual I and II framework. It was divided into three parts: the first part was about the profile of the respondents, the second part was about the extent of implementation of DRRM, and the third part was about the extent of respondents' participation in disasters.

Result and Discussion

Table 2 shows the extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by SK and barangay officials, DRRM Coordinators, LGU Officials and PNP, and Local Residents in terms of Disaster Prevention and Mitigation. The scores obtained an overall mean of 4.37, marked as highly implemented.

Table 2. Extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by LGU Officials, DRRM Coordinators, SK and Barangay Official and residents in terms of Disaster Prevention and Mitigation

Indicators	LGU Officials and PNP			DRRM Coordinators			SK and Barangay Officials			Local Residents			Overall Results		
	M	VI	R	M	VI	R	M	VI	R	Mean	VI	R	M	VI	R
1. have established a municipal/city disaster management committee in the municipality assigned.	4.57	HI	3	4.62	HI	3	4.26	HI	7	4.14	I	2	4.41	HI	3.5
2. have assessed risks, hazards, vulnerabilities, and capacities in the municipality assigned.	4.32	HI	8	4.65	HI	2	4.23	HI	8	3.95	I	5	4.28	HI	7
3. have made contingency plans to put in place appropriate measures that minimize the negative effects of disaster.	4.46	HI	4	4.54	HI	5	4.95	HI	2.5	4.08	I	3	4.50	HI	2
4. have maintained structural safety maintenance in the municipality/city infrastructures and building codes	4.41	HI	7	4.70	HI	1	4.97	HI	1	4.05	I	4	4.51	HI	1
5. have designed and implemented disaster management activities.	4.43	HI	5.5	4.49	HI	6	4.95	HI	2.5	3.49	I	9	4.34	HI	6
6. have coordinated and monitored the disaster management programs to rationalize resource utilization	4.19	I	9	4.43	HI	8	4.73	HI	4	3.76	I	7.5	4.27	HI	8
7.have improved the practice of simulation drills.	4.59	HI	1.5	4.57	HI	4	4.30	HI	6	4.19	I	1	4.41	HI	3.5
8.have undertaken mitigation training with support from the local government.	4.43	HI	5.5	4.46	HI	7	4.03	I	9	3.76	I	7.5	4.17	I	9
9.have monitored indicators for municipal/city disaster management such as the adoption of zoning and land use practices.	4.59	HI	1.5	4.38	HI	9	4.70	HI	5	3.86	I	6	4.38	HI	5
Over all weighted Mean	4.44	HI	9	4.54	HI		4.57	HI		3.92	I		4.37	HI	

Legend:

4.20-5.00 Highly Implemented (HI)
3.41-4.19 Implemented (I)
2.60-3.39 Moderately Implemented (MI)
1.80-2.59 Less Implemented (LI)
1.00-1.79 Not implemented at all (NIA)

About LGU officials and PNP, statement 7," has improved the practice of simulation drills and nine monitored indicators for municipal/city disaster management such as the adoption of zoning and land use practices," yielded the highest mean of 4.59 and was interpreted as highly implemented. It shows that the LGU officials and PNP regularly conduct simulation drills and adopt zoning and land use practices. These activities have enabled communities to prepare and respond more efficiently to disasters. Furthermore, the LGU officials and PNP have provided the necessary training and resources to ensure the communities are better equipped to handle emergencies. According to Malahay et al. (2018), simulation drills provide residents with hands-on experience following established emergency procedures. This familiarity can reduce panic and confusion during emergencies, enabling residents to respond more effectively and efficiently. Furthermore, knowledge gained from simulation drills helps residents react quickly and coordinate their actions with others during actual emergencies; therefore, this can minimize delays and improve the overall response, potentially saving lives and reducing the extent of damage.

Furthermore, it was also revealed that item 1, as rank 3, " has established a municipal/city disaster management committee in the municipality assigned," obtained a mean of 4.57 verbally interpreted as highly implemented. It shows that establishing a municipal or city disaster management committee strengthens the community's resilience to disasters by increasing local collaboration, readiness, and response skills. According to Wen, J. (2018), all government levels and sectors must be involved in disaster preparedness to ensure all groups act as one.

Statement 6 (have coordinated and monitored the disaster management programs to rationalize resource utilization) yielded the lowest mean of 4.19 with the interpretation of implemented. However, there is a need for improvement in terms of proper coordination in monitoring disaster management programs. With proper coordination, disaster management programs are likely to be successful. It is, therefore, essential that all stakeholders involved work together to implement such programs effectively. Clear communication and a unified strategy are essential for effective disaster management. As stated by the study by Galvizo (2022), disasters can have severe and widespread impacts on communities, economies, and the environment; thus, effective coordination ensures that the various components of disaster management are functioning efficiently, resources are allocated appropriately, and response efforts are well-informed and timely. It maximizes the impact of resources, enhances situational awareness, and contributes to the overall resilience of communities in the face of adversity.

As for the DRRM Coordinators, their efforts in maintaining structural safety in the municipality/city infrastructures and building codes have been highly successful. This is evident from the highest mean score of 4.70 for statement 4, indicating a very high level of implementation. The results revealed that DRRM coordinators regularly conduct and check the infrastructures and building codes to monitor progress and ensure that building practices are up to standard. This success should reassure the community about the safety of their infrastructures. As stated by Eidsvig et al. (2017), continually checking means determining the possibility of the importance of structural maintenance and guaranteeing that building procedures are according to the standard and risk issues.

Followed by item 2 as 2nd in rank, "assessed risks, hazards, vulnerabilities, and capacities in the municipality assigned" obtained a mean of 4.65, corresponding to highly implemented. It identifies essential goals and establishes measures to strengthen the municipality's resilience to disasters and emergencies, understanding the specific challenges and possibilities they face, prioritizing actions, and allocating resources efficiently to mitigate vulnerabilities and improve readiness. As stated by Eidsvig et al., 2017, evaluating risks for disaster-affected infrastructure contributes to risk control by detecting adverse events and vulnerabilities and evaluating the impact on users of the possibility of adverse occurrences).

Additionally, item 1, as third in rank, "have established a municipal/city disaster

management committee in the municipality assigned," obtained a mean of 4.62 with the verbal interpretation of highly implemented. It explained that forming a municipal or city disaster management committee aims to improve the community's resilience to calamities by strengthening local partnerships and preparedness. Islam et al. (2019) and Azad et al. (2019) state that disaster management and governance methods involve numerous efforts through collaboration, decision-making, and risk identification, including multiple national programs that strengthen disaster preparedness.

While the monitoring of indicators for municipal/city disaster management, such as the adoption of zoning and land use practices, has been highly implemented with a mean of 4.38, there is a clear need for improvement. It is crucial to ensure that these practices are properly monitored and adopted to promote sustainable development and protect the rights of people living in the area. This area of improvement should be a focus for future efforts in disaster management.

About the assessment of SK and Barangay Officials, statement 4, " have maintained structural safety maintenance in the municipality/city infrastructures and building codes, yielded the highest mean of 4.97 and was interpreted as highly implemented; this high mean score suggests that the SK and Barangay Officials consistently prioritize and carry out regular maintenance activities to ensure the structural safety of municipal/city infrastructures by established building codes. The results revealed that regular checks of the infrastructures and building codes are conducted to monitor progress and ensure building practices are up to standard. According to Eidsvig et al. (2017), continually checking means determining the importance of structural maintenance and guaranteeing that building procedures are according to the standard and risk issues.

Moreover, statement 3 "made contingency plans to put in place appropriate measures that minimize the negative effects of disasters," with a mean of 4.95, with the verbal interpretation of highly implemented ranked in the 2-second spot. It shows that an anticipatory approach to disaster preparedness seeks to reduce the adverse effects of calamities by guaranteeing adequate measures to respond to emergencies and assist recovery effectively. It is vital to note that contingency planning helps local institutions monitor actual requirements and readily accessible assets that may be needed immediately in a crisis. For example, the availability of medicines, clean drinking water, food, emergency shelter, and other necessary supplies play a crucial role in recovery and search, requiring prompt mobilization in any emergency (Jackson, 2011; Shah, 2018).

While statement 8, " have undertaken mitigation training with support from the local government," yielded the lowest mean of 4.03 with the interpretation of implementation. However, SK and Barangay Officials are requesting more mitigation training that equips them with the knowledge and skills to communicate with their constituents effectively and should teach them how to assess and manage the impacts of disasters on their communities. Torani et al. (2019) state that disaster education and training are intended to provide individuals and groups with the knowledge to take action to lessen vulnerability and disasters.

Based on the assessment of residents, statement 7 regarding the improvement of simulation drills yielded the highest mean score of 4.19. This suggests that the practice of simulation drills has been effectively implemented and is viewed positively by the residents. It shows that the residents are knowledgeable about simulation drills since most respondents could identify the correct steps to take when responding to a simulated emergency, such as correctly assessing the situation and following the appropriate safety protocols. According to Malahay et al. (2018), this familiarity can reduce panic and confusion during real emergencies, enabling residents to respond more effectively and efficiently. At the same time, knowledge gained from simulation drills helps residents react quickly and coordinate their actions with others during emergencies. This can minimize delays and improve the overall response, potentially saving lives and reducing the extent of damage.

Additionally, item 1, marked as ranked 2, "have established a municipal/city disaster management committee in the municipality

assigned," with a mean of 4.14 and interpreted as Implemented. It explained that forming a municipal or city disaster management committee aims to improve the community's resilience to calamities by strengthening local partnerships and preparedness. As D'AndreaD'Andrea et al. (2022) concluded, collaboration among stakeholders integrates actions with societal values, needs, and goals, allowing for the complete handling of emergency phases that respond, provide relief, mitigate adverse effects, and prevent future consequences.

Also, item 3 obtained the 3rd in rank, "made contingency plans to put in place appropriate measures that minimize the negative effects of disaster," with a mean of 4.08 and interpreted as Implemented. It shows that an anticipatory approach to disaster preparedness seeks to reduce the adverse effects of calamities by guaranteeing adequate measures to respond to emergencies and assist recovery effectively. As stated by Jackson (2011) and Shah et al. (2018), contingency planning is a management tool to identify problems and take proactive actions during humanitarian crises as a result of disasters.

While Statement 5, which pertains to the "design and implementation of disaster management activities", yielded the lowest mean score of 3.49. Despite being interpreted as " implemented," the lower mean score suggests that there may be room for improvement or that residents perceive the design and implementation of disaster management activities less positively than other aspects assessed. It depicts that training and education programs should be developed to further their understanding and ability to act appropriately in a crisis. Moreover, there is also a need for rigid training on implementing disaster management activities among the residents. This is because the residents are the first responders in the event of a disaster. Therefore, they must be adequately trained in disaster management activities such as evacuation, search and rescue, and first aid to be prepared to handle any potential disaster situations. As stated in the study by Shah (2018), knowledge is helpful for pre-disaster risk assessment, prevention, and preparation for successful and early disaster response and mitigation.

As to the overall assessment of the extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP, and the Local Residents in terms of Disaster Prevention and Mitigation, item 4 ranked 1st, " have maintained structural safety maintenance in the municipality/city infrastructures and building codes" with a mean of 4.51 and verbally interpreted as highly implemented. This high mean score indicates that this aspect of disaster prevention and mitigation is perceived as highly implemented by the stakeholders involved in the assessment. The results revealed that regular checks of the infrastructures and building codes are conducted to monitor progress and ensure building practices are up to standard. According to Eidsvig et al. (2017), continually checking means determining the possibility of the importance of structural maintenance and guaranteeing that building procedures are according to the standard and risk issues.

While the least in rank, "item 8, "has undertaken mitigation training with support from the local government" with a mean of 4.17 and interpreted as implemented. However, it obtained an incredibly high mean score of 4.17, suggesting that it is seen to have been executed. Despite being ranked lower than other items, this aspect of mitigation training with local government support has been acknowledged as being implemented by the stakeholders involved in the assessment, contributing to the overall mean score of 4.17 for the Disaster Risk Reduction Management (DRRM) program. It indicates that local government-supported mitigation training initiatives are executed within the municipality or city. Thus, a proactive approach to decreasing disaster risk by providing individuals and communities with the knowledge and skills required is by trough attending training to reduce the effects of disasters and build resilience against future risks (Shah et al., 2018).

Table 3 shows the extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP, and the Local Residents in terms of Disaster Preparedness. Using the scores

obtained an overall mean of 4.08 marked as implemented.

With regard to LGU officials and PNP, statement 7 "have regularly inspected and reassessed municipal/city buildings, grounds and surroundings for new vulnerabilities and potentially hazardous conditions" yielded the highest mean of 4.46 and interpretation of very high implementation, the high mean score suggests that LGU officials and the PNP are carrying this out well. The data shows that the LGU officials and PNP regularly conduct vulnerability assessments that include evaluating the extent of local government preparation and capability to respond to various types of disasters. Eidsvig et al., (2017) evaluating risks for disaster-affected infrastructure contributes to risk control by detecting adverse events and vulnerabilities and evaluating the impact on users of the possibility of adverse occurrences.

Table 3. Extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by LGU Officials, DRRM Coordinators, SK and Barangay Official and residents in terms of Disaster Preparedness

Indicators	LGU Officials and PNP			DRRM Coordinators			SK and Barangay Officials			Local Residents			Overall Results		
	M	VI	R	M	VI	R	M	VI	R	M	VI	R	M	VI	R
1. have assembled an assessment team to check all municipal/city facilities for its safety and security	3.84	I	9	4.03	I	9	3.62	I	8.5	4.00	I	10	3.87	I	10
2. have examined ways to reduce the vulnerability of existing structures	4.22	HI	6	4.30	HI	3.5	3.97	I	3.5	4.11	I	5.5	4.15	I	3
3. have organized a hazard mitigation committee and oversee its implementation.	4.32	HI	2	4.11	I	8	3.62	I	8.5	4.08	I	7	4.03	I	8
4. conducted regular meeting and monitor mitigation measures.	3.68	I	10	4.00	I	10	3.97	I	3.5	4.41	HI	1	4.01	I	9
5. have taken steps to reduce the vulnerability of natural resources	4.27	HI	4	4.41	HI	1	3.84	I	6	4.05	I	8.5	4.14	I	4
6. have seek additional sources of funding from the local government to grant mitigation programs.	4.14	HI	8	4.24	HI	5	3.86	I	5	4.05	I	8.5	4.07	I	6
7. have regularly inspected and reassessed municipal/city buildings, grounds and surroundings for new	4.46	HI	1	4.30	HI	3.5	4.03	I	1.5	4.38	HI	2	4.29	HI	1
8. have documented and tested preparedness plans for effective and efficient relief and recovery programs.	4.19	I	7	4.19	I	7	4.03	I	1.5	4.35	HI	3	4.19	I	2
9. have enhanced safety and security technologies such as alarm systems and surveillance equipment.	4.30	HI	3	4.22	HI	6	3.54	I	10	4.11	HI	5.5	4.04	I	7
10. have adopted the non-structural mitigation measures to minimize injuries and properly damage from natural disasters.	4.24	HI	5	4.32	HI	2	3.70	I	7	4.24	HI	4	4.12	I	5

Legend:

4.20-5.00	*Highly Implemented (HI)*
3.41-4.19	*Implemented (I)*
2.60-3.39	*Moderately Implemented (MI)*
1.80-2.59	*Less Implemented (LI)*
1.00-1.79	*Not implemented at all (NIA)*

Furthermore, statement 2, "have organized a hazard mitigation committee and oversee its implementation.", yielded a mean of 4.32 and was interpreted as highly implemented. This implies that a group or entity has taken the initiative to organize a committee devoted to dealing with and reducing risks and actively ensuring that the committee's plans and activities are carried out successfully and reducing potential adverse effects on the community or organization. As concluded by D'Andrea et al., (2022) collaboration among stakeholders integrates actions with societal values, needs, and goals, allowing for the complete handling of emergency phases that respond, provide relief, mitigate negative effects, and prevent future consequences.

Moreover, indicator 9, got a third rank "have enhanced safety and security technologies such as alarm systems and surveillance equipment" with a mean of 4.30 and interpreted as highly implemented. It shows that, by investing in advanced technologies such as alarm systems and surveillance equipment, the goal is to discourage potential threats, enhance emergency response times, and provide a safer environment for those in the area of concern. According to Ginige et. al, (2022), technologies are necessary to ensure the safety of people and data in public spaces, homes, and other places thus technological advancement in every aspect could help in identifying and finding high-risk areas, houses, and vulnerable parts that need repair and rebuilding that help in mitigating the high potential risk of hazards.

Consequently, statement 4 "conducted regular meetings and monitor mitigation measures) yielded the lowest mean of 3.68 with the interpretation of implemented. However, there is lacking regular meetings on monitoring mitigation measures. Despite being considered as "implemented," the evaluation suggests a lack of regular conferences dedicated to monitoring mitigating measures. It demonstrates that, despite certain components of the statement may be in place, there is still space for improvement in terms of guaranteeing regular conferences specifically dedicated to assessing mitigation efforts. Without regular meetings and updates, it is difficult to ensure that mitigation measures are being implemented in a timely and effective manner. Additionally, it is important to have regular meetings to evaluate progress and make adjustments if necessary. According to Bharwani (2020), residents need to participate and attend meetings in response efforts and support initiatives in building capacity and connections to help in addressing the problems with local authorities.

With regard to DRRM Coordinators, statement 1, "taken steps to reduce the vulnerability of natural resources" yielded the highest mean of 4.41 and was interpreted as highly implemented. This interpretation implies that DRRM Coordinators have extensively adopted steps to reduce the vulnerability of natural resources. This demonstrates a proactive attitude to protecting natural resources from future disasters or adverse effects. According to UNDRR (2017) as reiterated by Otwori & Nyandiko (2024) these efforts entail establishing programs and evaluations that focus on recovery, response, and preparedness. The approaches and methods aim to build comprehensive resiliency at the individual, community, and societal levels, thus minimizing the effect of disasters and improving the ability to adapt and thrive amid ongoing danger.

In addition, statement 10 "have adopted the non-structural mitigation measures to minimize injuries and proper damage from natural disasters "yielded a mean of 4.32 and an interpretation of highly implemented. Results revealed that DRRM Coordinators are regularly conduct non-structural mitigation measures as part of their disaster preparedness and also responsible for creating and implementing

emergency plans and protocols that are tailored to a specific community's needs. According to UNDRR (2017) as reiterated by Otwori & Nyandiko (2024) the plans and approaches centered on lowering current disaster risks through corrective disaster risk management actions, that aim or minimize disaster risks that already exist and must be handled and minimized immediately by structural or non-structural means.

Similarly, items 7 and 2 "regularly inspected and reassessed municipal/city buildings, grounds, and surroundings for new" and "have examined ways to reduce the vulnerability of existing structures" rank third respectively with a mean of 4.30 and verbal interpretation of highly implemented. The data shows that they regularly conduct vulnerability assessments that include evaluating the extent of local government preparation and capability to respond to various types of disasters. Evaluating risks for disaster-affected infrastructure contributes to risk control by detecting adverse events and vulnerabilities and evaluating the impact on users of the possibility of adverse occurrences (Eidsvig et al., 2017).

As a consequence, statement 4 "conducted regular meetings and monitor mitigation measures" yielded the lowest mean of 4.00 with the interpretation of implemented. It implies that, while the statement has been executed to some extent, there may be chances to improve the consistency or efficacy of these processes to more effectively meet the risk reduction standards. These regular meetings should be held to ensure that any identified risks are addressed and that the appropriate interventions are taken. According to Bharwani (2020), residents need to participate in response efforts and support initiatives in building capacity and connections to help address the problems with local authorities.

With regard to SK and Barangay Officials, statement 7 "have regularly inspected and reassessed municipal/city buildings, grounds, and surroundings for new vulnerabilities and potentially hazardous conditions" yielded the highest mean of 4.03 and was interpreted as high implemented. According to their viewpoint, SK and Barangay officials have taken comprehensive steps to evaluate and examine these areas for potential dangers and vulnerabilities regularly. This proactive strategy is critical for detecting and mitigating possible dangers, which improves community safety and disaster resilience. The data shows that they regularly conduct vulnerability assessments that include evaluating the extent of local government preparation and capability to respond to various types of disasters. Evaluating risks for disaster-affected infrastructure contributes to risk control by detecting adverse events and vulnerabilities and evaluating the impact on users of the possibility of adverse occurrences (Eidsvig et al., 2017).

Also, indicator 4 "conducted regular meetings and monitor mitigation measures" and item 2 "have examined ways to reduce the vulnerability of existing structures" with a mean of 3.97 and interpreted as implemented. It shows that authorities ensure that mitigation strategies are on track by holding regular meetings and monitoring, identifying any challenges or deficiencies, and adopting changes when required to improve the response and preparation for disasters. According to Bharwani (2020), residents need to participate in response efforts and support initiatives in building capacity and connections to help address the problems with local authorities.

While, statement 9 "have enhanced safety and security technologies such as alarm systems and surveillance equipment" yielded the lowest mean of 3.54 with the interpretation of implemented. For this reason, there is a need for improvement in enhanced safety and security technologies. This includes the development of surveillance systems, biometric authentication, and other security measures. Such technologies are necessary to ensure the safety of people and data in public spaces, homes, and other places. According to Ginige et. al, (2022), technological advancement is popular in every aspect that could help in identifying and finding high-risk areas, houses, and vulnerable parts that need repair and rebuilding.

About local residents, statement 4 "conducted regular meetings and monitor mitigation measures" yielded the highest mean of 4.41 and was interpreted as highly implemented. Results revealed that the residents conducted a regular meeting on monitoring of

mitigation measures. Residents were found to be moderately active in engaging in activities such as organizing meetings, discussing mitigation measures, and providing feedback to relevant authorities. These activities indicated that the residents have a moderately vested interest in monitoring the implementation of various mitigation measures. According to Bharwani (2020), residents need to participate in response efforts and support initiatives in building capacity and connections to help in addressing the problems with local authorities.

In addition, statement 7, "regularly inspected and reassessed municipal/city buildings, grounds, and surroundings for new" yielded a mean of 4.38 and was interpreted as highly implemented. This method seeks to discover new developments, changes, or potential dangers that may threaten the safety of the public, infrastructure integrity, or the sustainability of the environment. Regular inspections and reassessments of these places allow authorities to take steps to mitigate any risks, hazards, and compliance issues, maintaining the community's overall resilience and sustainability. Evaluating risks for disaster-affected infrastructure contributes to risk control by detecting adverse events and vulnerabilities and evaluating the impact on users of the possibility of adverse occurrences (Eidsvig et al., 2017).

Also, statement 8 got a third rank "have documented and tested preparedness plans for effective and efficient relief and recovery programs" acquired a mean of 4.35 and was interpreted as highly implemented. Recorded and established contingency plans for successful and effective recovery and assistance initiatives suggest that thorough plans have been made ahead of time to lead disaster or response efforts. This preparation allows for a more organized and immediate response to disasters, increasing the efficiency of assistance as well as making the recovery process easier for those affected.

Hence, statement 1 "has assembled an assessment team to check all municipal/city facilities for their safety and security" yielded the lowest mean of 4.00 and was interpreted as implemented. Moreover, there is a need for development of assessment team focusing on safety and security of facilities. This team would be able to identify potential security threats and make recommendations on how to mitigate those threats. They would also be able to audit existing safety and security measures to ensure they are up-to-date and effective. According to Abenir et. al, (2022), a well-prepared assessment team can develop and implement emergency response plans for various scenarios, including natural disasters, fires, medical emergencies, and security incidents. This preparation enhances the organization's ability to respond effectively and minimize harm. In the event of a crisis, the assessment team can play a key role in managing the situation, providing guidance, and coordinating with emergency responders. Their expertise helps ensure a coordinated and effective response.

As to the overall assessment of the extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP, and the Local Residents in terms of Disaster Preparedness. Item 2, ranked 1st "organized the external and internal rescuers group and assigned their respective tasks" obtained the highest mean of 4.32 and was interpreted as highly implemented. This anticipated method enables an integrated and effective response, with each rescue team member contributing to the overall effort based on their given responsibilities, thereby increasing the efficacy of the rescue operation. As concluded by Poterie and Baudoin (2015) as rseiterated by Otwori & Nyandiko (2024), through the effort and involvement of significant stakeholders that are well-equipped with knowledge, skills, and resources at all levels is an essential element of the effective creation of Disaster risk reduction strategies and initiatives.

While, item 3, "provided rescuer's welfare facilities" obtained the lowest mean of 3.83 and was interpreted as implemented. Despite being interpreted as "implemented," this implies that there is potential for development or that welfare facilities for rescuers could be improved. Establishing responder welfare facilities entails making sure that personnel participating in rescue operations have access to necessary assistance and services during disasters or emergencies. These facilities are intended to

fulfill the needs of rescuers, including their mental health, safety, convenience, and well-being while they do difficult and often dangerous activities. The provision of temporary shelter will assist in numerous ways linked to the restoration of disaster rescuers and survivors and can speed up rehabilitation from trauma and allow them to reflect and become more effective and resilient in facing dangers (Maynard & Parker, 2018)

Table 4 shows the extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP, and the Local Residents regarding Disaster Response. The mean scores, which range from 1 to 5, provide a clear indication of the level of implementation. Using the scores, I obtained an overall mean of 4.16, which falls within the 'implemented' range, indicating a high level of implementation.

Regarding LGU officials and PNP, statement 2, "organized the external and internal rescuers group and assigned their respective tasks," yielded the highest mean of 4.59, and the interpretation was highly implemented. This anticipated method enables an integrated and effective response, with each rescue team member contributing to the overall effort based on their given responsibilities, thereby increasing the efficacy of the rescue operation. As concluded by Poterie and Baudoin (2015), as reiterated by Otwori & Nyandiko (2024), the effort and involvement of significant stakeholders that are well-equipped with knowledge, skills, and resources at all levels is an essential element of the effective creation of Disaster risk reduction strategies and initiatives.

Table 4. Extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by LGU Officials, DRRM Coordinators, SK and Barangay Official and residents in terms Of Disaster Response

Indicators	LGU Officials and PNP			DRRM Coordinators			SK and Barangay Officials			Local Residents			Overall Results		
	M	VI	R	M	VI	R	M	VI	R	M	VI	R	M	VI	R
1. directed and regulated the activation of response mechanism by the DRRM coordination and rescuers.	4.24	HI	4.5	4.30	HI	2	4.03	I	4.5	4.30	HI	5	4.21	HI	4
2. organized the external and internal rescuers group and assigned their respective tasks	4.59	HI	1	4.64	HI	1	3.81	I	8.5	4.27	HI	6	4.32	HI	1
3.provided rescuer's welfare facilities	4.08	I	9	4.05	I	7.5	3.76	I	10	3.43	I	10	3.83	I	10
4. equipped the health rescuers with personal facilities	4.16	I	7	4.05	I	7.5	4.03	I	4.5	4.35	HI	2	4.14	I	5.5
5.provided specialized training to health care rescuers	4.43	HI	2	4.19	I	4.5	4.05	I	2.5	4.32	HI	3.5	4.24	HI	2
6. announced the basic needs of the evacuees so that the public can provide donations	4.19	HI	6	4.19	I	4.5	4.05	I	2.5	4.14	I	8	4.14	I	5.5
7. supervised the sufficiency and usability of resources before the disaster	4.05	I	10	4.00	I	10	3.81	I	8.5	4.32	HI	3.5	4.04	I	8
8. provided healthcare centers situated in strategic areas	4.24	HI	4.5	4.03	I	9	3.84	I	7	4.41	HI	1	4.13	I	7
9. coordinated with the municipality health unit for the availability of public and private ambulances	4.27	HI	3	4.19	I	4.5	4.22	HI	1	4.19	I	7	4.22	HI	3
10. activated response mechanisms for effective, timely search and rescue operations in order to save lives and minimize damage to property, in times of crisis.	4.13	I	8	4.27	HI	3	4.03	I	4.5	3.97	I	9	4.1	I	9
Composite Mean	4.23	HI		4.29	HI		3.96	I		4.17	I		4.16		

Legend:

4.20-5.00	*Highly Implemented (HI)*
3.41-4.19	*Implemented (I)*
2.60-3.39	*Moderately Implemented (MI)*
1.80-2.59	*Less Implemented (LI)*
1.00-1.79	*Not implemented at all (NIA)*

Furthermore, item 5, "provided specialized training to health care rescuers," obtained a mean of 4.43 and was interpreted as highly implemented. This training provides them with the knowledge and abilities required to respond efficiently to various kinds of medical disasters and emergencies, such as treatment, urgent care for patients in severe circumstances, prevention of infection, and coordination with other emergency responders. As stated by Alexander (2005) and Shah (2018), awareness and training are crucial attributes in dealing with disaster risks and managing them to fully utilize the institutional resources to support disaster risk management programs designed to mitigate the negative impacts of disasters.

Statement 7, "supervised the sufficiency and usability of resources before the disaster," yielded the lowest mean of 4.05 with the implemented interpretation. Emergency management agencies may more effectively prepare to prevent and respond to emergencies by ensuring these resources are suitable in quantity, quality, and appropriateness for the particular requirements of possible disaster situations.

Concerning DRRM Coordinators, statement 2, "organized the external and internal rescuers group and assigned their respective tasks," yielded the highest mean of 4.64 and was interpreted as implemented. Results revealed that both the LGU officials and PNP and DRRM Coordinators have an active external and internal rescuers group that rapidly responds to disasters, and they are well-equipped with knowledge, skills, and resources to perform their tasks. As concluded by Poterie and Baudoin (2015), as reiterated by Otwori & Nyandiko (2024), the effort and involvement of significant stakeholders that are well-equipped with knowledge, skills, and resources at all levels is an essential element of the effective creation of Disaster risk reduction strategies and initiatives.

Besides, indicator 1 ranked 2," directed and regulated the activation of response mechanism by the DRRM coordination and rescuers," obtained a mean of 4.30 and was interpreted as highly implemented. It means ensuring that response actions are organized and successful, with clear direction, duties assigned, and protocols followed. According to UNDRR (2017), as Otwori & Nyandiko (2024) reiterated, a successful DRR response provides mechanisms for managing residual risks, where all-of-society engagement is necessary through coordinated and comprehensive action to create a resilient society.

Indicator 10, ranked 3 as "activated response mechanisms for effective, timely search and rescue operations in order to save lives and minimize damage to property, in times of crisis," acquired a mean of 4.27 and was interpreted as highly implemented. This successful activation of response mechanisms reassures the audience that authorities are prepared to preserve lives, decrease injuries, and avoid damage to property during emergencies. As stated by Renn (2015) as reiterated by Otwori & Nyandiko (2024), it asserts that such a participative disaster response approach helps significantly to disaster preparedness, prevention, mitigation, and recovery; thereby, a successful DRR approach increases the targets towards risk reduction in the community.

With regard to SK and Barangay Officials, their successful coordination with the municipality health unit for the availability of public and private ambulances, as indicated by the highest mean of 4.22 and interpretation of high implementation, is a testament to their effective disaster response. This coordination ensures that medical assistance is quickly available to those in need, demonstrating their commitment to public health and safety. According to Abenir et al. (2022), in the event of a crisis, the assessment team can help and immediately manage the situation, provide guidance, and

coordinate with emergency personnel, and this strategy improves the organization's ability to respond effectively while minimizing damages.

Furthermore, indicator 6, "announced the basic needs of the evacuees so that the public can provide donations," and indicator 5, "provided specialized training to health care rescuers," obtained a mean of 4.05 and were interpreted as implemented, respectively. This notification aims to raise public knowledge of the item's evacuees might need, such as water, food, clothing, a place to live, medical supplies, hygiene products, and other necessities. This collaborative effort ensures survivors receive the aid and commodities needed to meet their basic needs and facilitate their recovery.

Statement 3, "provided rescuer's welfare facilities," yielded the lowest mean of 3.76 with the implementation interpretation. However, SK and Barangay officials revealed that rescuer welfare facilities are needed. These facilities are crucial for the well-being of rescue workers, who are exposed to a high level of risk and potential danger in their line of work. Providing proper facilities that can provide them with the care and support they need to remain healthy and safe is essential. According to Agapito (2021), this demonstrates an organization's commitment to the well-being of its rescuers, which can motivate them to stay engaged and committed to their duties and foster a sense of pride and loyalty.

With regard to local residents, the successful provision of healthcare centers situated in strategic areas, as indicated by the highest mean of 4.41 and interpretation of high implementation, ensures their immediate access to medical care. This strategic placement of healthcare centers is a crucial part of the disaster response plan, providing residents with the assurance that they will receive prompt medical attention in the event of a disaster. The location of evacuation shelters is essential for the fast response and arrival of survivors following the disaster (Xu et al., 2018).

Additionally, indicator 4, "equipped the health rescuers with personal facilities," ranked 2nd, with a mean of 4.35, and was interpreted as highly implemented. It includes the essential tools, equipment, and resources required for healthcare rescuers to properly perform their tasks during emergency response activities. According to Agapito (2021), providing welfare facilities demonstrates an organization's commitment to the well-being of its rescuers, which can motivate them to stay engaged and committed to their duties and foster a sense of pride and responsibility.

Furthermore, indicators 5 and 7 "provided specialized training to health care rescuers" and "supervised the sufficiency and usability of resources before the disaster," with a mean of 4.32 and interpreted as highly implemented. This training will provide individuals with the knowledge, skills, and competencies to respond effectively to various medical emergencies and disasters. As stated by Alexander (2005) and reiterated by Shah (2018), awareness and training are crucial attributes in dealing with disaster risks and managing them to fully utilize the institutional

resources to support disaster risk management programs designed to mitigate the negative impacts of disasters.

Consequently, statement 3, "provided rescuer's welfare facilities," yielded the lowest mean of 4.30 with the interpretation of high implementation with a composite mean of 4.19 and interpretation of high implementation. However, residents revealed that there is a need for rescuers' welfare. Rescuers are exposed to dangerous situations, yet they lack proper safety equipment and facilities to help them cope with their work's physical and psychological stress. This has led to decreased rescuers, making it difficult for them to respond quickly and efficiently to emergencies. According to Agapito (2021), providing welfare facilities demonstrates an organization's commitment to the well-being of its rescuers, which can motivate them to stay engaged and committed to their duties and foster a sense of pride and responsibility.

As to the overall assessment of the extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP, and the Local Residents regarding Disaster Response. Indicator 2, "organized the external and internal rescuers group and assigned their respective tasks," obtained the overall highest mean of 4.32 and was

interpreted as highly implemented. This intended strategy enables a coordinated and effective response, with each rescuer team concentrating on their assigned duties to successfully meet the needs of individuals affected by the disaster. As concluded by Poterie and Baudoin (2015), as reiterated by Otwori & Nyandiko (2024), the effort and involvement of significant stakeholders that are well-equipped with knowledge, skills, and resources at all levels is an essential element of the effective creation of Disaster risk reduction strategies and initiatives.

Hence, item 3, "provided rescuer's welfare facilities," yielded a mean of 3.83 and was interpreted as implemented. Consequently, there is a demand for rescuers' well-being facilities since rescuers are exposed to risky situations but have sufficient security equipment and facilities to assist them in coping with their jobs' physical and psychological stress. As stated by Bilau (2015), as reiterated by Octavia et al. (2023), welfare facilities are a key part of the recovery process after disasters as they impact their well-being.

Table 5 shows the extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP, and the Local Residents regarding Disaster Rehabilitation and Recovery. Using the scores, I obtained an overall mean of 4.09 and marked it as implemented.

Table 5. Extent of implementation of the Disaster Risk Reduction Management (DRRM) program as assessed by LGU Officials, DRRM Coordinators, SK and Barangay Official and residents in terms of Disaster Rehabilitation and Recovery

Indicators	LGU Officials and PNP			DRRM Coordinators			SK and Barangay Officials			Local Residents			Overall Results		
	M	VI	R	M	VI	R	M	VI	R	M	VI	R	M	VI	R
1. initiated and coordinated the evaluation of the disaster and relief operations and generate post disaster reports.	4.19	I	7	4.19	I	4	3.81	I	5.5	4.22	HI	7	4.10	I	4.5
2.prepared temporary toilets and sewage disposal and these were supervised	4.24	HI	3.5	4.13	I	5	4.00	I	1.5	4.24	HI	5.5	4.15	I	3
3. put in place measures to restore livelihoods and other life support systems of the affected communities	4.22	HI	6	3.95	I	9	3.87	I	4	4.24	HI	5.5	4.07	I	6
4. identified and quantified the resources needed for rehabilitation, recovery, and reconstruction.	4.13	I	8	3.89	I	10	3.95	I	3	4.16	I	8	4.03	I	7
5. prepared proper collections of waste materials	4.24	HI	3.5	4.27	HI	3	4.00	I	1.5	4.49	HI	1	4.25	HI	1
6. established capacities for using new technologies for disaster respond	4.08	I	9.5	4.02	I	7	3.43	I	10	4.14	I	9	3.91	I	10
7. initiated training in line with development programs for recovery and risk reduction based on the lessons learned.	4.24	HI	3.5	4.00	I	8	3.78	I	7	4.38	HI	4	4.1	I	8.5
8. prepared the map and the location of medical centers	4.08	I	9.5	4.08	I	6	3.81	I	5.5	4.43	HI	2	4.1	I	8.5
9. take necessary steps to ensure that recommended follow-up actions are undertaken within time framework	4.41	HI	1.5	4.43	HI	2	3.51	I	8.5	4.08	I	10	4.10	I	4.5
10. initiated counselling programs.	4.41	HI	1.5	4.62	HI	1	3.51	I	8.5	4.41	HI	3	4.23	HI	2
Over all weighted mean	4.20	HI		4.11	I		3.81	I		4.26	HI		4.09	I	

Legend:

4.20-5.00	*Highly Implemented (HI)*
3.41-4.19	*Implemented (I)*
2.60-3.39	*Moderately Implemented (MI)*
1.80-2.59	*Less Implemented (LI)*
1.00-1.79	*Not implemented at all (NIA)*

About LGU officials and PNP, statement 9, "takes necessary steps to ensure that recommended follow-up actions are undertaken within a time framework, and statement 10, "initiated counseling programs, "yielded the highest mean of 4.41 and was interpreted as highly implemented. Results revealed that LGU officials and PNP are conducting follow-up actions on disaster management and have counseling programs; these follow-up actions and counseling programs are meant to ensure that the community is better prepared for future disasters and that those affected by the disaster have the support they need to cope with the situation. As stated by Thaha and Drajat (2023), counseling programs aim to enhance the psychological well-being of survivors of disasters, reduce fear and trauma, and enhance human resources.

Additionally, indicators 2 and 7, "prepared temporary toilets and sewage disposal and these were supervised," yielded a mean of 4.24 and was interpreted as highly implemented. Authorities can help minimize the transmission of diseases, maintain sanitary standards, and protect the worth and security of affected communities during challenging times by establishing and monitoring temporary toilets and waste disposal systems. As stated by Lontoc et al. (2023), temporary storage reduces additional risks that may harm public well-being and the environment; this sought to strengthen the response to the creation of disaster waste by finding appropriate locations for temporary storage.

Statement 6, "established capacities for using new technologies for disaster response and statement 8, "prepared the map and the location of medical centers," yielded the lowest mean of 4.08 with the interpretation of highly implemented. For this reason, there is a need for improvement in enhanced safety and security technologies. This includes developing surveillance systems, biometric authentication, and other security measures. Such technologies are necessary to ensure the safety of people and data in public spaces, homes, and other places. According to Ginige et. al, (2022), technological advancement is prevalent in every aspect that could help identify and find high-risk areas, houses, and vulnerable parts that need repair and rebuilding.

About DRRM Coordinators, statement 10, "initiated counseling programs," yielded the highest mean of 4.62 and was interpreted as highly implemented. Results revealed that the DRRM Coordinators agreed on the availability of counseling programs for disaster rehabilitation and recovery. The DRRM coordinators believed counseling was necessary for individuals to effectively cope with the trauma of a disaster and gain access to the necessary resources for recovery. As stated by Thaha and Drajat (2023), counseling programs aim at enhancing the psychological well-being of survivors of disasters, reducing fear and trauma, and enhancing human resources.

Additionally, item 10, "take necessary steps to ensure that recommended follow-up actions are undertaken within a time framework," ranked second with a mean of 4.43 and was interpreted as highly implemented. Organizations guarantee that the suggested steps are carried out by immediately following up, leading to better outcomes, increased performance, and attaining desired goals and objectives. As concluded by Shah (2018), coordination is a crucial trait that requires additional efforts to develop in responding to disaster threats at various levels. Thus, an efficient coordination framework to facilitate efficient rescue and relief efforts during and after a crisis is vital.

Similarly, item 5, "prepared proper collections of waste materials," with a mean of 4.27, was interpreted as highly implemented. By organizing and carrying out adequate garbage collection systems, communities may successfully manage their waste streams, prevent

pollution, and contribute to a sustainable environment. As stated by Lontoc et al. (2023), temporary storage reduces additional risks that may harm public well-being and the environment; this sought to strengthen the response to the creation of disaster waste by finding appropriate locations for temporary storage.

Statement 4, "identified and quantified the resources needed for rehabilitation, recovery, and reconstruction," yielded the lowest mean of 3.89 when interpreted as implemented. However, DRRM Coordinators also agreed that there is a need for more resources on disaster rehabilitation and recovery. They noted that while materials are available for disaster preparedness and response, there is a lack of resources for rehabilitation and recovery, which is necessary for long-term sustainability. This is especially true for vulnerable communities with less resource access than more affluent communities. Investing in disaster risk reduction measures, both structural and non-structural, is crucial for enhancing flexibility for individuals, communities, and the environment. These initiatives are advantageous and can save lives, prevent losses, and guarantee effective recovery and rehabilitation (Shah, 2018).

About SK and Barangay Officials, statement 2, "prepared temporary toilets and sewage disposal and these were supervised, and statement 5, "prepared proper collections of waste materials," yielded the highest mean of 4.00 and was interpreted as implemented. By organizing and carrying out adequate garbage collection systems, communities may successfully manage their waste streams, prevent pollution, and contribute to a sustainable environment. As stated by Lontoc et al. (2023), temporary storage reduces additional risks that may harm public well-being and the environment; this sought to strengthen the response to the creation of disaster waste by finding appropriate locations for temporary storage.

Additionally, item 4, marked as ranked 3, "identified and quantified the resources needed for rehabilitation, recovery, and reconstruction" with a mean of 3. 95 and interpreted as implemented. Authorities and organizations can effectively plan and allocate resources, prioritize actions, organize assistance, and implement initiatives to help the recovery and reconstruction process in a timely and efficient manner by determining and assessing the needed resources. To effectively respond to an emergency, focusing on early recovery is crucial. This phase aims to effectively satisfy the basic requirements of affected individuals, including their livelihoods, and help them recover from the effects more rapidly (Khambali, 2017).

While statement 9, "take necessary steps to ensure that recommended follow-up actions are undertaken within a time framework," yielded the lowest mean of 3.51 with the implemented interpretation. However, the SK and Barangay officials agreed that regular follow-ups should exist on disaster rehabilitation and recovery. The government should have regular meetings to discuss how to help best the victims of disasters, such as providing food, shelter, medical assistance, and other necessary resources, and coordinate with local and national government agencies to ensure a smooth and effective relief effort. As concluded by Shah (2018), coordination is a crucial trait that requires additional efforts to develop in responding to disaster threats at various levels. Thus, an efficient coordination framework to facilitate efficient rescue and relief efforts during and after a crisis is vital.

About residents, statement 5, "prepared proper collections of waste materials," yielded the highest mean of 4.49 and was interpreted as implemented. By organizing and carrying out adequate garbage collection systems, communities may successfully manage their waste streams, prevent pollution, and contribute to a sustainable environment. As stated by Lontoc et al. (2023), temporary storage reduces additional risks that may harm public well-being and the environment; this sought to strengthen the response to the creation of disaster waste by finding appropriate locations for temporary storage.

Furthermore, item 8, ranked second, "prepared the map and the location of medical centers," with a mean of 4.43 and interpreted as highly implemented. This map is a vital tool for disaster mitigation and response operations because it provides critical information regarding the availability of medical services during calamities or disasters. As a result of the study

by Mitoya (2023), the map can be used to communicate information in the early stages of a disaster to locate appropriate medical facilities for critical patients and transfer them to such facilities across districts.

Lastly, indicator 10, "initiated counseling programs," ranks third, with a mean of 4.41, and is interpreted as highly implemented. Organizations and local governments may aid individuals affected by crises' mental and emotional health by initiating counseling programs, contributing to their total recovery and well-being. As stated by Thaha and Drajat (2023), counseling programs aim to enhance the psychological well-being of disaster survivors, reduce fear and trauma, and enhance human resources.

Statement 9, "take necessary steps to ensure that recommended follow-up actions are undertaken within a time framework," yielded the lowest mean of 4.08 and was interpreted as implemented. However, the government should have regular meetings to discuss how to help best the victims of disasters, such as providing food, shelter, medical assistance, and other necessary resources, also coordinate with local and national government agencies to ensure a smooth and effective relief effort. As concluded by Shah (2018), coordination is a crucial trait that requires additional efforts to develop in responding to disaster threats at various levels. Thus, an efficient coordination framework to facilitate efficient rescue and relief efforts during and after a crisis is vital.

Table 6 presents the significant difference in the stakeholders' assessment of the DRRM program's implementation. Data shows significant differences in the stakeholders' assessments regarding implementing the DRRM program in terms of disaster prevention and mitigation, disaster preparedness, disaster response, and disaster rehabilitation and recovery. Significant differences in all stakeholders' assessments of the implementation of the Disaster Risk Reduction and Management (DRRM) program across various aspects such as disaster prevention and mitigation, disaster preparedness, disaster response, and disaster rehabilitation and recovery indicate a disparity in perceptions and experiences among different groups involved in or affected by DRRM activities.

Results revealed that the stakeholders have a wide range of opinions and assessments about the efficacy of the DRRM program. There is a lack of consensus when it comes to the effectiveness of the program in terms of its ability to prevent and mitigate disasters, prepare for disasters, respond to disasters, and rehabilitate and recover from disasters. This lack of consensus could be due to the fact that the DRRM program is still relatively new, and as such, its effectiveness has yet to be fully seen and understood. The urgency and importance of further research and evaluation are paramount to accurately assess the program's impact and efficacy. The DRRM program should be further implemented and tested in different contexts to gain a better understanding of its effects. Additionally, the program should be evaluated on a regular basis to ensure it is meeting the needs of the communities it is intended to serve. Your ongoing involvement in this process is crucial to the success of the DRRM program. According to Herrera (2021), differences in assessments among stakeholders regarding the implementation of Disaster Risk Reduction and Management (DRRM) programs are common due to various factors, including differing perspectives, priorities, resources, and levels of involvement. These differences can affect how stakeholders perceive the effectiveness and outcomes of DRRM programs in different stages: disaster prevention and mitigation, disaster preparedness, disaster response, and disaster rehabilitation and recovery.

Table 6. Significant difference in the assessment of the stakeholders as to the implementation of the DRRM program

Multiple Comparisons		p-value	Interpretation	Decision
Disaster Prevention and Mitigation				
LGU Officials and PNP	DRRM Coordinators	0.008	Significant	Reject H_0
	SK and Barangay Officials	0.040	Significant	Reject H_0
	Local Residents	0.043	Significant	Reject H_0

		p-value	Interpretation	Decision
DRRM Coordinators	LGU Officials and PNP	0.011	Significant	Reject H_0
	SK and Barangay Officials	0.012	Significant	Reject H_0
	Local Residents	0.000	Significant	Reject H_0
SK and Barangay Officials	LGU Officials and PNP	0.000	Significant	Reject H_0
	DRRM Coordinators	0.021	Significant	Reject H_0
	Local Residents	0.000	Significant	Reject H_0
Local Residents	LGU Officials and PNP	0.000	Significant	Reject H_0
	SK and Barangay Officials	0.000	Significant	Reject H_0
	SK and Barangay Officials	0.000	Significant	Reject H_0
Disaster Preparedness		p-value	Interpretation	Decision
LGU Officials and PNP	DRRM Coordinators	0.004	Significant	Reject H_0
	SK and Barangay Officials	0.005	Significant	Reject H_0
	Local Residents	0.009	Significant	Reject H_0
DRRM Coordinators	LGU Officials and PNP	0.017	Significant	Reject H_0
	SK and Barangay Officials	0.217	Significant	Reject H_0
	Local Residents	0.008	Significant	Reject H_0
SK and Barangay Officials	LGU Officials and PNP	0.006	Significant	Reject H_0
	DRRM Coordinators	0.002	Significant	Reject H_0
	Local Residents	0.041	Significant	Reject H_0
Local Residents	LGU Officials and PNP	0.000	Significant	Reject H_0
	SK and Barangay Officials	0.000	Significant	Reject H_0
	DRRM Coordinators	0.000	Significant	Reject H_0
Disaster Response				
LGU Officials and PNP	DRRM Coordinators	0.018	Significant	Reject H_0
	SK and Barangay Officials	0.019	Significant	Reject H_0
	Local Residents	0.036	Significant	Reject H_0
DRRM Coordinators	LGU Officials and PNP	0.038	Significant	Reject H_0
	SK and Barangay Officials	0.043	Significant	Reject H_0
	Local Residents	0.025	Significant	Reject H_0
SK and Barangay Officials	LGU Officials and PNP	0.048	Significant	Reject H_0
	DRRM Coordinators	0.010	Significant	Reject H_0
	Local Residents	0.000	Significant	Reject H_0
Local Residents	LGU Officials and PNP	0.000	Significant	Reject H_0
	SK and Barangay Officials	0.000	Significant	Reject H_0
	DRRM Coordinators	0.000	Significant	Reject H_0
Disaster Rehabilitation and Recovery		p-value	Interpretation	Decision
LGU Officials and PNP	DRRM Coordinators	0.000	Significant	Reject H_0
	SK and Barangay Officials	0.210	Significant	Reject H_0
	Local Residents	0.000	Significant	Reject H_0
DRRM Coordinators	LGU Officials and PNP	0.00	Significant	Reject H_0
	SK and Barangay Officials	0.001	Significant	Reject H_0
	Local Residents	0.012	Significant	Reject H_0
SK and Barangay Officials	LGU Officials and PNP	0.047	Significant	Reject H_0
	DRRM Coordinators	0.031	Significant	Reject H_0
	Local Residents	0.012	Significant	Reject H_0
Local Residents	LGU Officials and PNP	0.000	Significant	Reject H_0
	SK and Barangay Officials	0.000	Significant	Reject H_0
	DRRM Coordinators	0.000	Significant	Reject H_0

Table 7 presents the challenges encountered by SK and barangay officials, DRRM Coordinators, LGU Officials and PNP, and Local Residents regarding human resources. The scores obtained a mean of 4.41 and were marked as highly serious.

Table 7. Challenges encountered by the SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP and the Local Residents as to the implementation of DRRM programs in terms of Human Resources

Indicators	M	VI	R
1. National policy and legal framework for DRR exists with decentralized responsibilities	4.42	HS	3
2. Inadequate resources are available to implement DRR plans and activities	4.52	HS	2
3. Community participation and decentralization can be seen but in minimal level	4.62	HS	1
4. A platform for DRR is not always functioning during the calamity or disaster occurrence due to power interruption	4.27	HS	4
5. Early warning systems are in place but not properly manage for all major hazards with outreach to communities	4.21	HS	5
Over all weighted me	4.41	HS	

Legend:

4.20-5.00	*Highly serious*
3.41-4.19	*Serious*
2.60-3.39	*Moderately serious*
1.80-2.59	*Less serious*
1.00-1.79	*Not a problem*

Regarding human resources, statement 3, ranked first, "community participation and decentralization can be seen but at a minimal level, "yielded the highest mean of 4.62 with the interpretation of highly serious. This shows that, while community involvement and decentralization are present in human resource management, they must be improved. The high mean score suggests that respondents view this topic as a significant concern or difficulty that needs immediate attention and improvement. Empowering local communities, improving decision-making processes, fostering inclusivity, and fostering partnerships can all contribute to a more efficient and beneficial allocation of human resources and utilization. According to Aggarwal and Dwivedi (2022), the community's participation is crucial in mitigating disaster effects. It should be involved in disaster management to build capacities and linkages, leveraging local knowledge, resources, and livelihood possibilities.

Additionally, statement 2 ranked second, "Inadequate resources are available to implement DRR plans and activities," yielded a mean of 4.52 and was interpreted as highly serious. The statement emphasizes stakeholders' concerns about needing more financial, human, material, and technological resources to implement DRR plans and operations properly. This suggests that stakeholders view resource constraints as a significant challenge toward successful disaster risk reduction. In the study of Resuello (2020), implementing Disaster Risk Reduction and Management (DRRM) programs can pose various challenges for stakeholders, particularly in human resources, budgetary constraints, capacity building, and establishing effective mechanisms.

Moreover, statement 1 ranked 3rd, "National policy and legal framework for DRR exists with decentralized responsibilities," yielded a mean of 4.42 and was interpreted as highly serious. Considering the existence of a national policy and legal framework, the relatively high mean score of 4.42 indicates that stakeholders see significant gaps, problems, or deficiencies in its implementation or effectiveness. This suggests that there may be concerns with the alignment, enforcement, or clarity of

the policy and legal framework at the decentralized level. Based on UNISDR (2007), as reiterated by Otwori & Nyandiko (2024,) the inconsistencies in interpretation, insufficient enforcement measures, and a lack of clarity on roles and responsibilities at the local level to successfully execute and adhere to national guidelines are all potential concerns.

Statement 5, "Early warning systems are in place but not properly managed for all major hazards with outreach to communities," yielded the lowest mean of 4.21 with severe interpretation. This shows that, while early warning systems exist, they need to be better managed and fully functional for all critical hazards, and community outreach is lacking. The low mean score suggests that respondents consider that a significant concern or problem in the present disaster risk management framework. Improving early warning system management and community outreach may require addressing technological advancement shortages, enhancing communication channels, raising community awareness and readiness, and enhancing collaboration among the appropriate stakeholders to guarantee timely and efficient dissemination of notifications and response actions. According to Wen (2018), to increase the potential of the response phases, new techniques and technologies must be.

Table 8 presents the challenges encountered by SK and barangay officials, DRRM Coordinators, LGU Officials and PNP, and Local Residents regarding human resources. The scores obtained an overall mean of 4.41 and were marked as highly serious.

In terms of statement budgetary, capacities, and mechanism, statement 4, ranked first, "Procedures are not properly and strategically in place to exchange relevant information during hazard events and disasters and to undertake post-event reviews," yielded the highest mean of 4.41 with the interpretation of severe. The statement emphasizes the need for immediate and effective communication and information exchange during disaster incidents and emergencies viewed as insufficient or lacking in strategic planning. Sarmiento (2023) states that effective communication requires coordinating response efforts to limit secondary problems and morbidity immediately following disasters.

Similarly, statement 1, "Strong policy, technical, and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective, are not properly disseminated and in place," yielded a mean of 4.29 and was verbally interpreted as highly serious. The statement emphasizes the need for solid legislative frameworks, technical skills, and institutional capacities in disaster risk management, which are critical for lowering risks and increasing resilience.

Table 8. Challenges encountered by the SK and Barangay Officials, DRRM Coordinators, LGU Officials and PNP and the Local Residents as to the implementation of DRRM programs in terms of budgetary, capacities and mechanism

	Indicators	M	VI	R
1.	Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are not properly disseminated and in place	4.29	HS	2
2.	Disaster preparedness plans and contingency plans are in place at all administrative levels only.	4.24	HS	3
3.	Financial reserves and contingency mechanisms are not properly in place to support effective response and recovery when required	4.22	HS	5
4.	Procedures are not properly and strategically in place to exchange relevant information during hazard events and disasters and to undertake post event reviews	4.41	HS	1
5.	Relevant information on disasters is not always available and accessible to all stakeholders	4.23	HS	4
	Over all weighted mean	4.28	HS	

Legend:

4.20-5.00	*Highly serious (HS)*
3.41-4.19	*Serious (S)*
2.60-3.39	*Moderately Serious (MS)*
1.80-2.59	*Less Serious (LS)*
1.00-1.79	*Not a Problem (NAP)*

Furthermore, statement 3, "Disaster preparedness plans and contingency plans are in place at all administrative levels only," yielded a mean of 4.24 and was verbally interpreted as highly serious. Indicates that stakeholders are concerned about the implementation or efficacy of disaster planning and contingency strategies. This shows that, while plans may exist, they may not be adequate to satisfy the different demands and concerns of all disaster management stakeholders. According to See-Sew (2019), a global study of the current conditions of institutional systems and risk reduction management shows that the government adopts plans and contingency plans that may result in unsatisfying the demands of stakeholders.

Statement 3, "Financial reserves and contingency mechanisms are not properly in place to support effective response and recovery when required," yielded the lowest mean of 4.22 with the severe interpretation. It implies that stakeholders recognize the possible effects of insufficient financial reserves and contingency plans, such as reaction delays, limited capacity to address immediate requirements, and difficulties aiding recovery and reconstruction activities. As cited by Otwori and Nyandiko (2024), disaster preparedness necessitates adequate funding under numerous categories, and these resources are critical to strengthening the capacity of local disaster management institutions as they respond, recover, and reconstruct the significant needs of the residents.

Conclusion

The following are the conclusions of the study based from the findings:

1. People are typically more proactive about preventing disasters than about recovering from them. According to additional analysis, the respondents' poor performance in Disaster Rehabilitation and Recovery was attributed to a lack of expertise and resources to deal with the aftermath of a disaster. This demonstrates the importance of enhancing knowledge and allocating resources to disaster management.
2. Concerning the efficacy of the DRRM program, stakeholders have a variety of viewpoints and assessments. There is no unanimity concerning the program's success in preventing and mitigating catastrophes, preparing for disasters, responding to disasters, and rehabilitating and recovering from disasters. This lack of agreement may be attributable to the fact that the DRRM program is still relatively young, and as such, its effectiveness has yet to be thoroughly observed and comprehended. Additional study and evaluation are required to measure the program's impact and efficacy. The DRRM program should be deployed and evaluated in additional scenarios to understand its effects better. Additionally, the program should be assessed frequently to verify that it addresses the designated communities' needs.
3. Communities are frequently excluded from the decision-making process and need more means and capacity to respond rapidly and effectively in the case of a natural disaster. As a result, they can only partially benefit from the disaster management program. This emphasizes the necessity of empowering and involving local populations in disaster management. This necessitates the creation of initiatives to enhance community capacity building and equip local governments to respond to disasters. More resources and capacity to implement successful methods were also cited as significant obstacles. In addition, a lack of comprehension of the magnitude of the crisis and a lack of collaboration between various stakeholders were recognized as additional obstacles. These obstacles impeded the implementation of disaster management

programs, resulting in inadequate results. This circumstance hurt the disaster-affected communities. It also contributed to losing confidence in the government's capacity to address disaster management requirements.

4. The establishment of an Internal Disaster Response Plan in every barangay is a crucial step towards disaster preparedness. This plan, to be activated during and immediately after disasters, provides a sense of security and preparedness. When the chaos and devastation of a disaster exceed the capabilities of barangays, the plan ensures that Local Government Units (LGUs) and the National Government can respond effectively. The involvement of designated Barangay Disaster Response Teams and volunteers further strengthens the preparedness and response.

The paper of Follosco-Aspiras (2015) explains how an integrated disaster risk reduction and management (DRRM) may be realized through a case study assessment of the municipality of Hagonoy in the Province of Bulacan, Philippines. Towards this, it looked into Hagonoy's DRRM experience regarding participation, policies, and capacity-building efforts. Specifically, the study identified all the participants and their roles or involvement in the DRRM efforts of Hagonoy, Bulacan. It further established how the various policies about DRRM were harmonized. Moreover, the article determined the different capacity-building efforts of the many stakeholders in Hagonoy. In light of these, multiple pieces of literature were reviewed, key informants were interviewed at both provincial and municipal levels of government, and a focus group discussion was conducted at the barangay level.

The assessment results point to adopting a convergent approach, wherein efforts from all stakeholders at national, regional, provincial, municipal, barangay, and individual levels in terms of participation, policies, and capacity building come together to affect an integrated DRRM system or mechanism.

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