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Preparedness and Challenges Across Geographies: Comparing Coastal and Inland Barangay Disaster Risk Reduction Committees

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Abstract

This study assessed and compared the disaster preparedness of the Barangay Disaster Risk Reduction and Management Committees (BDRRMCs) in the coastal and inland barangays of Gonzaga, Cagayan, examined their experiences and challenges in performing their mandated functions, and developed a proposed capability enhancement program. It employed a descriptive-comparative research design using an explanatory-sequential mixed-methods approach. Quantitative data were initially collected through a researcher-made questionnaire with established content validity and acceptable reliability, followed by qualitative data gathered through key informant interviews to explain and provide deeper insights into the quantitative findings. Descriptive statistics, an independent-samples t-test, and thematic analysis were utilized to analyze the data. During qualitative analysis, repetitive responses from informants were excluded to avoid redundancy and ensure that the themes represented distinct and relevant insights. The findings revealed that coastal BDRRMCs were Highly Prepared ($M = 3.44$, $SD = 0.73$), whereas inland BDRRMCs were Prepared ($M = 3.22$, $SD = 0.76$). A statistically significant difference was established between their preparedness levels, $t(76) = 8.165$, $p < .001$. Among the thirteen mandated DRRM functions, only Monitoring and Emergency Response remained statistically significant after the Bonferroni adjustment. Furthermore, qualitative findings generated eight themes encompassing preparedness, emergency response, information dissemination, training, resource constraints, inadequate equipment and transportation, limited community participation, and resistance to evacuation directives. The study concluded that both groups demonstrated preparedness but encountered varying operational challenges in performing their responsibilities. Consequently, PROJECT H.A.N.D.A. (Holistic Advancement for Nurturing Disaster-Ready Actions) was developed to address identified gaps, strengthen BDRRMC capabilities, enhance disaster preparedness, and promote community resilience.

Keywords: Disaster Preparedness, Barangay Disaster Risk Reduction and Management Committees, Coastal Barangays, Inland Barangays, Disaster Risk Reduction and Management

INTRODUCTION

The geographic location of the Philippines was known to be near the Pacific Ring of Fire and along the typhoon belt which makes the country suffer from different calamities like typhoons, floods, landslides, and etc. The different disasters cause a massive impact to the livelihoods of the people, create damages to

the infrastructures and most of them devastate lives. Thus, in response to these emerging hazards, the Philippine government enacted a law particularly Philippine Disaster Risk Reduction and Management Act of 2010 (Republic Act 10121) which created the existence of Barangay Disaster Risk Reduction Management Committees (BDRRMCs) to oversee the community-based disaster risk reduction programs designed for local needs.

However, even though there are legislative frameworks, there is empirical evidence that shows gaps in disaster governance at the barangay level in terms of preparedness, resources, and capacity of the community. In the study of Lumabi et al. (2025) conducted at Rizal Kalinga, they have found out that there is still room for improvement when it comes to resource utilization and capacity building even though they met an overall compliance with disaster preparedness. They also emphasized that there are still limitations in the BDRRMC specially when it comes to funding, technical training and emergency supplies. Thus, all of these areas still need improvement.

Meanwhile, in the study of Nacaya et al. (2023), he found out that the disaster response of BDRRMCs in river basin barangays was only partially accomplished which raises concerns about the effectiveness of current practices in high-risk inland settings. On the other hand, the study of Valenzuela (2021) emphasizes that there should be a need for stronger cooperation from the stakeholder and to elevate community engagement to improve resilience on coastal disaster risk governance.

In the study of Guingab et al. (2025), they presented that flood-prone barangays in the Northern Philippines depend on the different levels of community vulnerability and preparedness; this suggests that geographic context influences how communities understand, prepare for, and respond to hazards.

These studies demonstrate that although having a BDRRMCs is an institutional requirement, their actual performance, as well as their capability in disaster preparedness and response are inconsistent and it is influenced by resource constraints, training gaps, and community involvement issues. By just comparing coastal and inland barangays through surveys and interviews, this research will give an evidence-based insight into how geographic differences shape the preparedness levels and operational challenges of BDRRMCs, which could give an important information to strengthen local disaster risk reduction strategies, informing policy, and enhancing community resilience across geographies.

Theoretical and Conceptual Framework

This study was anchored on Ludwig von Bertalanffy's Systems Theory (1968), which emphasizes that an organization consists of interconnected components that work together to achieve a common goal. The theory explains that the overall performance of a system depends on the coordination and interaction of its individual components.

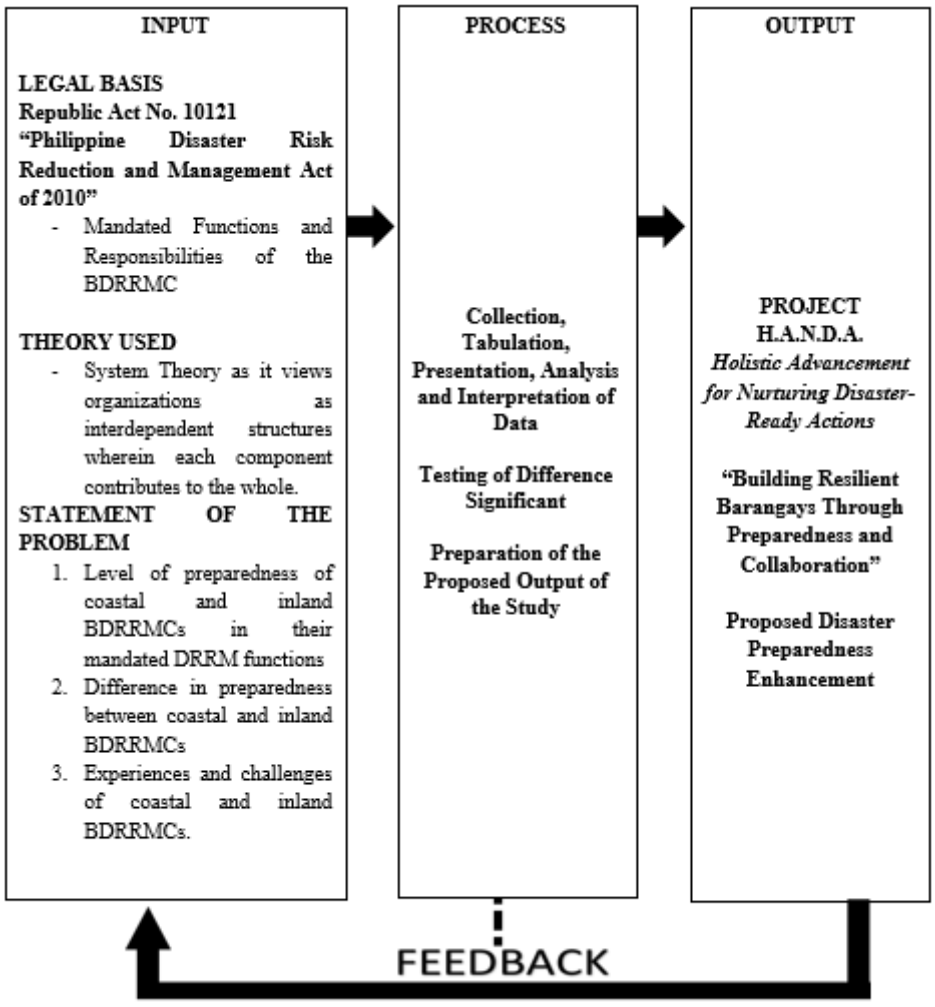
In this study, the Barangay Disaster Risk Reduction and Management Committees (BDRRMCs) were viewed as systems composed of interconnected disaster preparedness functions, including planning, risk assessment, information management, training, early warning, budgeting, and emergency response. The coordination of these functions contributed to the overall preparedness of the committees in addressing disaster risks in coastal and inland barangays. The study also recognized that geographical location influenced the types of hazards encountered by communities, with coastal barangays being more exposed to typhoons, storm surges, and flooding, while inland barangays faced risks such as landslides, flash floods, drought, and other location-specific hazards. These differences highlighted the importance of location-responsive disaster risk reduction and management strategies.

The framework was further supported by Republic Act No. 10121, or the Philippine Disaster Risk Reduction and Management Act of 2010, which mandates the establishment of local DRRM structures

and programs; the Sendai Framework for Disaster Risk Reduction (2015–2030), which emphasizes disaster risk understanding and strengthened disaster governance; and the Philippine Disaster Risk Reduction and Management Framework (2020–2030), which promotes community resilience and risk-sensitive approaches.

Guided by these foundations, the study adopted the Input-Process-Output (IPO) model to illustrate the flow of the research. The inputs included the legal and theoretical foundations, statement of the problem, research instrument, and statistical tools. The process involved data gathering, tabulation, presentation, analysis, and interpretation, including the comparison of preparedness levels and examination of the experiences and challenges encountered by coastal and inland BDRRMCs. The findings served as the basis for developing the output, PROJECT H.A.N.D.A. (Holistic Advancement for Nurturing Disaster-Ready Actions), with the theme "Building Resilient Barangays Through Preparedness and Collaboration." The proposed program aimed to address identified gaps, strengthen BDRRMC capabilities, and improve disaster preparedness and response. Furthermore, the feedback mechanism provided an opportunity to use the study's findings and proposed interventions to enhance future disaster preparedness initiatives.

The Paradigm of the Study



Significance of the Study

The findings of this study may benefit the following individuals and institutions:

Community Members. This study may help households, fisherfolk, farmers, women, children, senior citizens, and persons with disabilities (PWDs) become more aware of disaster risks and encourage their participation in community preparedness activities.

Barangay Disaster Risk Reduction and Management Committees (BDRRMCs). The findings may help BDRRMCs understand their preparedness levels and the challenges they encounter in performing their mandated functions. These may also guide them in improving their disaster preparedness activities.

Grassroots Stakeholders. Barangay DRRM volunteers, Community Emergency Response Teams (CERTs), purok leaders, youth organizations, and civil society organizations may use the findings to improve community participation and coordination in disaster preparedness.

Local Government Units (LGUs). The findings may provide useful information for planning, budgeting, and developing DRRM programs suited to the needs and hazards of coastal and inland barangays.

Legislative Bodies. This study may help legislators identify areas in existing DRRM policies that need improvement and provide a basis for creating ordinances and allocating funds for disaster preparedness.

National Agencies. Agencies such as the NDRRMC, DOST-PAGASA, DENR, and DSWD may use the findings as additional reference in developing programs and interventions that address the disaster preparedness needs of local communities.

Future Researchers. This study may serve as a reference for future research on disaster preparedness, particularly studies comparing coastal and inland communities and the challenges experienced by their BDRRMCs.

Objective of the Study

This study aimed to compare the level of preparedness and the challenges encountered by coastal and inland Barangay Disaster Risk Reduction and Management Committees (BDRRMCs) in carrying out their mandated disaster preparedness and management functions.

Specifically, it sought to answer the following questions:

1. What was the level of preparedness of coastal and inland BDRRMCs in performing their mandated Disaster Risk Reduction and Management (DRRM) functions in terms of:

1.1. Planning and coordinating DRRM programs;
1.2. Conducting risk assessments and preparing contingency plans;
1.3. Consolidating and maintaining hazard and risk information;
1.4. Conducting DRRM trainings and orientations;
1.5. Establishing and maintaining multi-hazard early warning systems;
1.6. Preparing and managing DRRM plans and budgets;
1.7. Monitoring hazards and responding to emergencies;
1.8. Disseminating information and raising public awareness;
1.9. Identifying and implementing cost-effective disaster risk reduction measures;
1.10. Maintaining a DRRM database and inventory;
1.11. Coordinating and mobilizing stakeholders and volunteers;
1.12. Organizing, training, and supervising emergency response teams; and
1.13. Establishing and maintaining a DRRM Operations Center?

2. Was there a significant difference in the level of preparedness between coastal and inland BDRRMCs in carrying out their mandated DRRM functions?

3. What experiences and challenges were encountered by coastal and inland BDRRMCs in fulfilling their mandated disaster preparedness and management functions?
4. Based on the findings of the study, what disaster preparedness and management program could be proposed to enhance the capabilities of coastal and inland BDRRMCs?

Research Hypothesis

The study tested the following null hypothesis:

H_0: There was no significant difference in the level of preparedness between coastal and inland BDRRMCs in carrying out their mandated Disaster Risk Reduction and Management functions.

METHODOLOGY

Research Design

This study used a descriptive-comparative research design with an explanatory-sequential mixed-methods approach. The quantitative phase was conducted first to determine and compare the preparedness levels of coastal and inland BDRRMCs. Afterward, interviews were conducted to better understand the results and the challenges experienced by the committees.

Research Method

The study used both quantitative and qualitative methods. Survey questionnaires were given to BDRRMC members to determine their level of preparedness, while Key Informant Interviews (KIIs) were conducted with selected members to learn more about their experiences and the challenges they encountered in carrying out their duties.

Population of the Study

The study covered ten (10) barangays in Gonzaga, Cagayan, consisting of five coastal barangays (Caroan, Minanga, Batangan, Baua, and Casitan) and five inland barangays (San Jose, Sta. Maria, Magrafil, Isca, and Pateng). A total of 210 BDRRMC members participated in the survey through total enumeration, while 100 selected members participated in the interviews. Participants were chosen based on their membership and involvement in barangay disaster risk reduction and management activities.

Locale of the Study

The study was conducted in selected coastal and inland barangays of Gonzaga, Cagayan. The ten barangays were selected based on their geographical locations and exposure to different hazards, as identified in the municipality's Comprehensive Land Use Plan (CLUP). These locations provided an opportunity to compare the preparedness and challenges of BDRRMCs in different geographical settings.

Scope and Limitation of the Study

This study focused on the preparedness and challenges of BDRRMCs in ten selected barangays of Gonzaga, Cagayan, during 2025. It covered their disaster preparedness functions and the differences between coastal and inland barangays. However, the study did not include other barangays or examine the long-term effectiveness of DRRM programs and disaster recovery outcomes.

Data Gathering Tools

The main instrument used in this study was a researcher-made questionnaire based on Republic Act No. 10121 and other relevant DRRM guidelines. Key Informant Interviews were also conducted with selected BDRRMC members to gather further information about their experiences and the challenges they encountered.

Content Validation.

The questionnaire was reviewed by three experts to check whether the questions were clear and relevant

to the study. All ten validation criteria received an I-CVI of 1.00, which indicated excellent content validity.

Pilot Testing and Reliability.

The questionnaire was pilot-tested among 30 participants from Barangay Simpatuyo, Sta. Teresita, and Barangay Progressive, Gonzaga, who were not part of the actual study. The 39-item questionnaire obtained a Cronbach's Alpha of 0.770, indicating acceptable reliability.

Data Gathering Procedure

Before conducting the study, permission was obtained from the concerned municipal and barangay authorities. The researcher personally distributed the questionnaires to BDRRMC members and conducted interviews with selected participants. After collecting the responses, the data were organized and prepared for analysis.

Treatment of the Data

The quantitative data were analyzed using the mean and standard deviation to determine the preparedness levels of the BDRRMCs. The Shapiro-Wilk test was used to check the normality of the data, while an independent-samples t-test was used to determine whether there was a significant difference between coastal and inland BDRRMCs. For the qualitative data, Braun and Clarke's six-phase thematic analysis was used to identify common themes from the interviews. Similar and repetitive responses were grouped together to avoid presenting the same answers repeatedly while retaining the important ideas shared by the informants.

Ethical Considerations

The researcher secured the informed consent of the participants before conducting the surveys and interviews. Participation was voluntary, and respondents were free to decline or withdraw from the study at any time. Their identities and responses were kept confidential, and the information gathered was used only for academic purposes.

RESULTS AND DISCUSSION

3.1 What is the level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions in terms of:

Since the data were gathered using a four-point Likert scale, a test of normality was first conducted to determine the appropriate measure of central tendency for the preparedness scores. Specifically, the Shapiro–Wilk test was used to assess whether the data followed a normal distribution. This was done to provide statistical justification for the use of the mean rather than the median in describing the level of preparedness. A significance level of 0.05 was used, wherein a p-value greater than 0.05 indicates that the assumption of normality is satisfied.

Table No. 1. Tests of Normality of Coastal and Inland BDRRMC Preparedness Scores

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	**Df**	**Sig.**	**Statistic**	**df**	**Sig.**
Coastal	.085	39	.200*	.968	39	.318
Inland	.090	39	.200*	.960	39	.172

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The Shapiro–Wilk test showed that both the coastal and inland BDRRMC preparedness scores were normally distributed. For the coastal BDRRMCs, the test yielded W (39) = .968, p = .318, while for the inland BDRRMCs, the result was W (39) = .960, p = .172. Both p-values were greater than the 0.05 level of significance, indicating that the assumption of normality was satisfied. Based on this result, the data were treated as parametric, supporting the use of the mean as the measure of central tendency in describing the level of preparedness. The standard deviation was likewise used to describe the variability of the scores.

Table No. 2. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on Planning & Coordinating DRRM Programs

Indicators	**Coastal**		**Inland**	
	Mean	**Descriptive Equivalent**	**Mean**	**Descriptive Equivalent**
1.1 Planning & Coordinating DRRM Programs				
1. The BDRRMC regularly prepares DRRM plans aligned with LGU plans.	3.61	Highly Prepared	3.44	Highly Prepared
2. The committee coordinates DRRM activities with agencies.	3.51	Highly Prepared	3.35	Highly Prepared
3. DRRM programs are implemented according to plan.	3.45	Highly Prepared	3.31	Highly Prepared
Overall Mean	**3.52**	**Highly Prepared**	**3.37**	**Highly Prepared**

As shown in Table 2, coastal BDRRMCs obtained an overall mean of 3.52, while inland BDRRMCs obtained 3.37, both interpreted as Highly Prepared. The coastal BDRRMCs had a slightly higher mean, indicating a relatively higher level of preparedness in planning and coordinating DRRM programs. Nevertheless, both groups demonstrated high preparedness in this mandated function. Similarly, Ramlee et al. (2026) emphasized the importance of advance planning and good governance in strengthening disaster preparedness.

The highest-rated indicator for both groups was “The BDRRMC regularly prepares DRRM plans aligned with LGU plans,” with means of 3.61 for coastal and 3.44 for inland BDRRMCs. This suggests that both groups prioritize aligning their DRRMr plans with local government plans. In the study of Gabriel et al. (2021) he supported this by highlighting the importance of integrating disaster risk reduction into development planning.

Conversely, the lowest-rated indicator was “DRRM programs are implemented according to plan,” with means of 3.45 for coastal and 3.31 for inland BDRRMCs. Although both remained Highly Prepared, the results indicate that implementation was comparatively less highly rated than plan preparation. This

indicates that having DRRM plans is not enough unless they are properly carried out. Similarly, Necosia (2025) highlighted the importance of adequate DRRM funding in strengthening the ability of local governments to prepare for and manage disaster risks.

The qualitative findings support these results. Participants described preparedness practices, including advance announcements and hazard monitoring. For example, P18 stated, "Even before a typhoon arrived, we already made preparations so that we would not have to rush once the disaster struck." However, resource limitations were also reported, as P9 shared, "Sometimes, the budget was not enough to purchase all the equipment we needed." These responses provide context for the high preparedness ratings while highlighting challenges that may affect the implementation of DRRM plans. Consistent with Systems Theory (von Bertalanffy, 1968), the findings suggest that effective planning and implementation depend on the coordination of people, resources, and activities within the disaster management system.

Table No. 3. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on Risk Assessment and Contingency Planning

Indicators	**Coastal**		**Inland**	
	Mean	**Descriptive Equivalent**	**Mean**	**Descriptive Equivalent**
1.2 Risk Assessment and Contingency Planning				
1. Risk assessments are regularly conducted.	3.45	Highly Prepared	3.20	Prepared
2. Contingency plans are prepared for disasters	3.41	Highly Prepared	3.42	Highly Prepared
3. Risk results are used in planning.	3.53	Highly Prepared	3.14	Prepared
Overall Mean	**3.46**	**Highly Prepared**	**3.25**	**Prepared**

As presented in Table 3, coastal BDRRMCs obtained an overall mean of 3.46, interpreted as Highly Prepared, while inland BDRRMCs obtained 3.25, interpreted as Prepared. The results indicate that coastal BDRRMCs demonstrated a higher descriptive level of preparedness in risk assessment and contingency planning than inland BDRRMCs. This indicates that coastal BDRRMCs showed greater preparedness in recognizing possible hazards and using risk information when planning their disaster-related activities. Similarly, Ramlee et al. (2026) highlighted the importance of preparing ahead of time to improve community readiness for potential disasters.

The highest-rated indicator for coastal BDRRMCs was the use of risk assessment results in planning, with a mean of 3.53, while inland BDRRMCs obtained their highest mean of 3.42 in preparing contingency plans for disasters. This suggests that coastal committees placed greater emphasis on using risk information in planning, whereas inland committees were relatively stronger in preparing contingency plans. These results emphasize the need to consider local hazards when preparing for disasters. Similarly,

Ravago et al. (2020) highlighted the importance of using location-specific risk assessments and preparedness strategies to help local governments respond to potential hazards.

Meanwhile, the lowest-rated indicator for coastal BDRRMCs was the preparation of contingency plans, with a mean of 3.41, while inland BDRRMCs obtained their lowest mean in using risk assessment results in planning, with 3.14. This indicates that coastal committees may further strengthen their contingency planning, while inland committees may need to improve the use of risk assessment results in developing their plans. This is consistent with Imperiale and Vanclay (2021), who emphasized the importance of understanding local vulnerabilities, community needs, and social dimensions of disaster risk in strengthening disaster risk reduction and community resilience.

The qualitative findings provide further context for these results. The theme Continuous Monitoring and Hazard Preparedness reflects the importance of identifying and preparing for possible hazards, as one participant stated, “As a member of the BDRRMC, we constantly monitored our surroundings for signs of an approaching disaster.” (P7). This supports the preparedness practices reflected in the coastal and inland results. However, the challenges under Financial and Resource Constraints and Inadequate Emergency Equipment and Transportation suggest that limited resources may affect the committees' ability to conduct risk assessments and prepare for different disaster scenarios. These findings highlight, consistent with Systems Theory (von Bertalanffy, 1968), that risk assessment and contingency planning require coordination among committee members, available resources, and other components of the disaster management system.

Table No. 4. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on Hazard and Risk Information Management

Indicators	**Coastal**		**Inland**	
	Mean	**Descriptive Equivalent**	**Mean**	**Descriptive Equivalent**
1.3 Hazard and Risk Information Management				
1. Hazard-prone areas are identified and recorded.	3.45	Highly Prepared	3.36	Highly Prepared
2. Risk information is organized and accessible.	3.52	Highly Prepared	3.25	Prepared
3. Hazard data is updated regularly.	3.42	Highly Prepared	3.26	Highly Prepared
Overall Mean	**3.46**	**Highly Prepared**	**3.29**	**Highly Prepared**

As presented in Table 4, coastal BDRRMCs obtained an overall mean of 3.46, while inland BDRRMCs obtained 3.29, both interpreted as Highly Prepared. The results indicate that both groups demonstrated a high level of preparedness in hazard and risk information management. However, coastal BDRRMCs obtained a slightly higher mean than inland BDRRMCs. This suggests that both groups generally practiced identifying, organizing, and updating hazard-related information, although coastal BDRRMCs received a

higher overall assessment. This finding is supported by Santoso et al. (2021), who highlighted the importance of integrating information from different stakeholders into a disaster management information system to improve coordination and support disaster preparedness and response.

The highest-rated indicator for coastal BDRRMCs was "Risk information is organized and accessible," with a mean of 3.52. The same indicator was also the highest for inland BDRRMCs, with a mean of 3.25, although it was rated Prepared. This indicates that organizing and providing access to risk information was the strongest area for both groups, with coastal BDRRMCs obtaining a higher rating. This highlights the importance of accessible disaster-related information in supporting preparedness decisions.

Meanwhile, the lowest-rated indicator for coastal BDRRMCs was "Hazard data is updated regularly," with a mean of 3.42, while inland BDRRMCs obtained their lowest mean of 3.25 for "Risk information is organized and accessible." These results indicate that coastal BDRRMCs may need to give more attention to updating hazard data, while inland BDRRMCs may focus on improving how risk information is organized and accessed. This is supported by Asuncion et al. (2025), who discussed the difficulties faced by local disaster risk reduction offices in managing data due to limitations in institutional capacity and data management practices. Similarly, the National Disaster Risk Reduction and Management Plan (NDRRMP) 2020–2030 highlights the need for updated and accessible risk information to guide local disaster preparedness and planning.

The qualitative findings support these results through the theme Continuous Monitoring and Hazard Preparedness. One participant stated, "Even before a typhoon arrived, we already made preparations so that we would not have to rush once the disaster struck." (P18), reflecting the importance of remaining alert to possible hazards. However, the challenges involving limited resources may also affect the committees' ability to regularly collect, organize, and update hazard information. These findings emphasize, consistent with Systems Theory (von Bertalanffy, 1968), that effective information management requires coordination, continuous monitoring, and adequate resources within the disaster management system.

Table No. 5. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on DRRM Trainings and Orientations

Indicators	**Coastal**		**Inland**	
	Mean	**Descriptive Equivalent**	**Mean**	**Descriptive Equivalent**
1.4 DRRM Trainings and Orientations				
1. DRRM training is conducted regularly.	3.44	Highly Prepared	3.18	Prepared
2. Community orientations are conducted.	3.50	Highly Prepared	3.65	Highly Prepared
3. Training is relevant to risks.	3.64	Highly Prepared	3.20	Prepared
Overall Mean	**3.52**	**Highly Prepared**	**3.35**	**Highly Prepared**

As presented in Table 5, coastal BDRRMCs obtained an overall mean of 3.52, while inland BDRRMCs obtained 3.35, both interpreted as Highly Prepared. The results indicate that both groups demonstrated a high level of preparedness in conducting DRRM training and orientations. However, coastal BDRRMCs obtained a slightly higher mean than inland BDRRMCs. This suggests that both groups recognized the importance of training and community awareness in preparing for disasters. This is supported by Asio (2021), who identified the need for disaster-related training among community members to improve their preparedness and response. Similarly, Gatchalian-Garingan (2021) emphasized the value of disaster education and information dissemination in developing community knowledge and preparedness.

The highest-rated indicator for coastal BDRRMCs was "Training is relevant to risks," with a mean of 3.64, while inland BDRRMCs obtained their highest mean in "Community orientations are conducted," with 3.65. Both were interpreted as Highly Prepared. This indicates that coastal BDRRMCs placed greater emphasis on providing risk-relevant training, whereas inland BDRRMCs showed stronger ratings in conducting community orientations. Asih et al. (2023) similarly emphasized that public education can give improvement to the disaster preparedness of the community.

Meanwhile, the lowest-rated indicator for coastal BDRRMCs was "Community orientations are conducted," with a mean of 3.50, while inland BDRRMCs obtained their lowest mean in "DRRM training is conducted regularly," with 3.18. These results suggest that coastal BDRRMCs may further strengthen their community orientations, while inland BDRRMCs may focus on conducting more regular DRRM training. Both activities remain important in sustaining community preparedness. This finding is supported by Gundran et al. (2023), who identified insufficient capacity-building activities and gaps in disaster simulation training as challenges affecting disaster preparedness among government agencies in the Philippines.

The qualitative findings support these results through the theme Community-Based Disaster Preparedness Training and Drills. One participant shared, "We conducted training activities such as earthquake drills and fire drills so that residents would know how to respond when a disaster occurred." (P73). This response reflects the conduct of preparedness activities and drills, supporting the high ratings obtained by both groups. The findings indicate that training and orientations contribute to community readiness, consistent with Systems Theory (von Bertalanffy, 1968), which emphasizes the coordination of different components of a system toward a common objective.

Table No. 6. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on Early Warning Systems

Indicators	Coastal		Inland	
	Mean	Descriptive Equivalent	Mean	Descriptive Equivalent
1.5 Early Warning Systems				
1. Early warning systems are established.	3.37	Highly Prepared	3.18	Prepared
2. Warning systems are tested and maintained.	3.34	Highly Prepared	3.16	Prepared

3. The community understands warning signals.	3.39	Highly Prepared	3.04	Prepared
Overall Mean	**3.37**	**Highly Prepared**	**3.13**	**Prepared**

As presented in Table 6, coastal BDRRMCs obtained an overall mean of 3.37, interpreted as Highly Prepared, while inland BDRRMCs obtained 3.13, interpreted as Prepared. The results indicate that coastal BDRRMCs demonstrated a higher descriptive level of preparedness in early warning systems than inland BDRRMCs. This suggests that coastal committees were relatively more prepared in establishing, maintaining, and communicating early warning systems. This finding is supported by Islam et al. (2025), who emphasized that effective early warning systems provide timely information that enables communities to prepare for impending disasters and reduce their potential impacts.

The highest-rated indicator for coastal BDRRMCs was "The community understands warning signals," with a mean of 3.39, while inland BDRRMCs obtained their highest mean in "Early warning systems are established," with 3.18. This indicates that coastal committees had a relatively higher rating in community understanding of warning signals, whereas inland committees were relatively stronger in establishing warning systems.

Meanwhile, the lowest-rated indicator for both coastal and inland BDRRMCs was "Warning systems are tested and maintained," with means of 3.34 and 3.16, respectively. Although coastal BDRRMCs obtained a higher mean, the findings suggest that both groups still need to improve the regular testing and maintenance of their warning systems. This is supported by Pelone and Cajano (2025), who identified weak communication systems and limited access to localized risk information as challenges that may delay the dissemination of warnings and disaster response.

The qualitative findings support these results through the theme Disaster Information Dissemination and Early Warning. One participant stated, "We issued warnings to the people so they would know what to do when a disaster occurred." (P97), while another shared,"We issued advisories to the residents whenever a typhoon was approaching so they could prepare ahead of time." (P11). These responses demonstrate the practice of providing advance warnings to residents. However, the lower ratings of inland BDRRMCs indicate that early warning systems may require further strengthening, particularly in testing, maintenance, and community awareness. Consistent with Systems Theory (von Bertalanffy, 1968), effective early warning requires coordination among the BDRRMC, communication mechanisms, and community members.

Table No. 7. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on DRRM Plans and Budgeting

Indicators	**Coastal**		**Inland**	
	Mean	**Descriptive Equivalent**	**Mean**	**Descriptive Equivalent**
1.6 DRRM Plans and Budgeting				
1. DRRM plans and budgets are prepared annually.	3.56	Highly Prepared	3.13	Prepared

2. Funds are properly allocated and used.	3.45	Highly Prepared	3.13	Prepared
3. Resources are sufficient.	3.28	Highly Prepared	3.13	Prepared
Overall Mean	**3.43**	**Highly Prepared**	**3.13**	**Prepared**

As presented in Table 7, coastal BDRRMCs obtained an overall mean of 3.43, interpreted as Highly Prepared, while inland BDRRMCs obtained 3.13, interpreted as Prepared. The results indicate that coastal BDRRMCs demonstrated a higher descriptive level of preparedness in DRRM planning and budgeting than inland BDRRMCs. This suggests that coastal committees showed stronger preparedness in developing disaster plans and identifying financial resources for DRRM activities. This finding is supported by Necosia et al. (2025), who found a significant positive relationship between DRRM fund allocation and local government resilience, highlighting the importance of sustained financial investment in strengthening disaster preparedness.

The highest-rated indicator for coastal BDRRMCs was "DRRM plans and budgets are prepared annually," with a mean of 3.56. All three indicators for inland BDRRMCs obtained the same mean of 3.13, indicating that their preparedness ratings were equal across the areas assessed. These results suggest that annual planning and budgeting were relatively stronger among coastal BDRRMCs, while inland BDRRMCs demonstrated similar levels of preparedness in all three indicators.

Meanwhile, the lowest-rated indicator for coastal BDRRMCs was "Resources are sufficient," with a mean of 3.28, while all three indicators for inland BDRRMCs shared the lowest mean of 3.13. These results indicate that both coastal and inland BDRRMCs still need to improve their available resources, with inland committees showing a greater need for improvement. This is consistent with Lumabi et al. (2025), who identified limitations in funding, emergency supplies, and other essential resources among BDRRMCs in Rizal, Kalinga.

The qualitative findings support these results through the theme Financial and Resource Constraints. One participant stated, "One of our main problems was the lack of funds for the needs of the BDRRMC." (P62), while another shared, "Our resources were limited, so we had to make do with whatever was available in the barangay." (P31). These responses reflect the resource limitations experienced by BDRRMCs and provide context for the relatively lower ratings in resource sufficiency. Consistent with Systems Theory (von Bertalanffy, 1968), the findings emphasize that the performance of disaster management functions depends partly on the availability and proper allocation of resources.

Table No. 8. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on Monitoring and Emergency Response

Indicators	**Coastal**		**Inland**	
	Mean	**Descriptive Equivalent**	**Mean**	**Descriptive Equivalent**
1.7 Monitoring and Emergency Response				

1. Hazards are regularly monitored.	3.61	Highly Prepared	3.19	Prepared
2. Response procedures are clear.	3.55	Highly Prepared	3.25	Prepared
3. Emergency response is timely.	3.46	Highly Prepared	3.23	Prepared
Overall Mean	**3.54**	**Highly Prepared**	**3.23**	**Prepared**

As presented in Table 8, coastal BDRRMCs obtained an overall mean of 3.54, interpreted as Highly Prepared, while inland BDRRMCs obtained 3.23, interpreted as Prepared. The findings show that coastal BDRRMCs obtained higher preparedness ratings in monitoring and emergency response compared with inland BDRRMCs. This indicates that coastal committees had a relatively greater level of readiness in tracking possible hazards and implementing response measures during emergencies. In relation to this, Jose (2025) discussed the implementation of local DRRM strategies and identified limitations in equipment and facilities that may affect disaster management efforts.

The highest-rated indicator for both coastal and inland BDRRMCs was "Hazards are regularly monitored," with means of 3.61 and 3.19, respectively. This indicates that regular hazard monitoring was the strongest area for both groups, although coastal BDRRMCs obtained a higher mean. The findings highlight the importance of continuous monitoring in identifying potential threats and preparing for possible emergencies.

Meanwhile, the lowest-rated indicator for coastal BDRRMCs was "Emergency response is timely," with a mean of 3.46, while inland BDRRMCs obtained their lowest mean in "Hazards are regularly monitored," with 3.19. These findings reveal that the two groups have different areas requiring further improvement. Coastal committees may focus on improving the speed and coordination of their emergency response, while inland committees may strengthen their routine monitoring of potential hazards. Sun et al. (2024) emphasized that effective coordination among organizations and the proper flow of emergency resources contribute to improved disaster response performance. Meanwhile, Islam et al. (2025) highlighted the importance of continuous monitoring and timely warnings in helping communities prepare for impending hazards.

The qualitative findings support these results through the theme Commitment to Emergency Response and Community Safety. One participant stated, "Whenever there was an emergency, we responded immediately to ensure the safety of the people." (P78), reflecting the readiness of BDRRMC members to respond to emergencies. However, the themes Inadequate Emergency Equipment and Transportation and Financial and Resource Constraints reveal challenges that may affect response operations. These findings provide context for the differences in preparedness ratings between coastal and inland BDRRMCs. Consistent with Systems Theory (von Bertalanffy, 1968), effective monitoring and emergency response require coordination among personnel, resources, and response procedures

Table No. 9. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on Information Dissemination and Awareness

Indicators	Coastal		Inland	
	Mean	Descriptive Equivalent	Mean	Descriptive Equivalent
1.8 Information Dissemination and Awareness				
1. Hazards are regularly monitored.	3.40	Highly Prepared	3.31	Highly Prepared
2. Response procedures are clear.	3.36	Highly Prepared	3.32	Highly Prepared
3. Emergency response is timely.	3.48	Highly Prepared	3.29	Highly Prepared
Overall Mean	**3.41**	**Highly Prepared**	**3.31**	**Highly Prepared**

As presented in Table 9, coastal BDRRMCs obtained an overall mean of 3.41, while inland BDRRMCs obtained 3.31, both interpreted as Highly Prepared. The results indicate that both groups demonstrated a high level of preparedness in information dissemination and awareness. However, coastal BDRRMCs obtained a slightly higher mean than inland BDRRMCs. This suggests that both groups generally carried out activities related to hazard information and community awareness, with coastal BDRRMCs receiving a slightly higher assessment.

The highest-rated indicator for coastal BDRRMCs was “Emergency response is timely,” with a mean of 3.48, while inland BDRRMCs obtained their highest mean in “Response procedures are clear,” with 3.32. This suggests that coastal committees demonstrated greater readiness in carrying out prompt emergency actions, while inland committees showed better preparation in establishing clear guidelines for responding to emergencies. These findings are consistent with Galorio et al. (2025), who highlighted the importance of clear evacuation procedures, inter-agency coordination, and resource sharing in promoting faster and more organized disaster response.

Meanwhile, the lowest-rated indicator for coastal BDRRMCs was “Response procedures are clear,” with a mean of 3.36, while inland BDRRMCs obtained their lowest mean in “Emergency response is timely,” with 3.29. Although both indicators were still classified as Highly Prepared, the results point to areas that require further improvement. Coastal committees may benefit from establishing clearer response guidelines, while inland committees may focus on improving the speed of their emergency actions. In support of these findings, Pelone and Cajano (2025) identified communication difficulties and limited access to localized disaster information as factors that can delay emergency response in geographically isolated communities.

The qualitative findings support these results through the theme Disaster Information Dissemination and Early Warning. One participant stated,“We provided information to the residents early whenever a typhoon was approaching so they could prepare in advance.” (P36), demonstrating the practice of informing residents about impending hazards. This supports the high preparedness ratings of both groups

in information dissemination and awareness. However, the qualitative findings also emphasize the importance of effective communication and community cooperation in ensuring that disaster-related information reaches and is understood by residents. Consistent with Systems Theory (von Bertalanffy, 1968), information dissemination requires coordination between the BDRRMC and the community to achieve effective disaster preparedness.

Table No. 10. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on Cost-effective DRR Measures

Indicators	**Coastal**		**Inland**	
	Mean	**Descriptive Equivalent**	**Mean**	**Descriptive Equivalent**
1.9 Cost-effective DRR Measures				
1. Cost-effective DRR measures are identified.	3.18	Prepared	3.08	Prepared
2. Practical solutions are implemented.	3.38	Highly Prepared	3.14	Prepared
3. Resources are efficiently used.	3.50	Highly Prepared	3.31	Highly Prepared
Overall Mean	**3.35**	**Highly Prepared**	**3.17**	**Prepared**

As presented in Table 10, coastal BDRRMCs obtained an overall mean of 3.35, interpreted as Highly Prepared, while inland BDRRMCs obtained 3.17, interpreted as Prepared. These results show that both groups demonstrated preparedness in applying cost-effective disaster risk reduction measures, although coastal committees received a higher rating. The findings also emphasize the need to maximize available resources when implementing DRRM activities. Ramlee and Knight (2025) highlighted the challenges posed by limited resources and inconsistent implementation in disaster risk management. Similarly, Lumabi et al. (2025) reported difficulties in securing sufficient funding and maintaining emergency supplies among barangay disaster management committees, emphasizing the need for better resource utilization.

In terms of the highest-rated indicator, both coastal and inland BDRRMCs obtained their highest mean in "Resources are efficiently used," with 3.50 and 3.31, respectively. This suggests that both groups demonstrated preparedness in maximizing their available resources. Although both groups were classified as Prepared, the findings indicate that identifying affordable and practical DRR interventions remains an area for improvement. Domingo and Manejar (2021) also identified gaps in DRRM fund allocation and utilization, highlighting the need for better financial management and monitoring of disaster-related expenditures.

Regarding the lowest-rated indicator, both coastal and inland BDRRMCs obtained their lowest mean in "Cost-effective DRR measures are identified," with 3.18 and 3.08, respectively, both interpreted as Prepared. Although the results indicate that both groups demonstrated preparedness, the relatively lower ratings suggest that identifying and prioritizing practical interventions based on their costs and expected

benefits remained an area for improvement. In support of this finding, Mechler (2016) emphasized the importance of economic assessment tools, such as cost-benefit and cost-effectiveness analysis, in determining which disaster risk reduction measures provide greater benefits relative to their costs. This highlights the value of evaluating available options before implementing DRR activities to ensure that limited resources are directed toward appropriate and beneficial interventions.

The qualitative findings support the quantitative results through the theme Financial and Resource Constraints. Participant 62 stated, "One of our main problems was the lack of funds for the needs of the BDRRMC." while Participant 31 shared, "Our resources were limited, so we had to make do with whatever was available in the barangay." These responses highlight the challenges encountered by BDRRMCs in managing limited resources and identifying cost-effective measures. In relation to Systems Theory, the findings emphasize the importance of properly utilizing available resources to ensure the coordinated functioning of the disaster preparedness system.

Table No. 11. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on DRRM Database and Inventory

Indicators	**Coastal**		**Inland**	
	Mean	**Descriptive Equivalent**	**Mean**	**Descriptive Equivalent**
1.10 DRRM Database and Inventory				
1. Inventory of resources is updated.	3.40	Highly Prepared	3.23	Prepared
2. DRRM data is recorded properly.	3.49	Highly Prepared	3.39	Highly Prepared
3. Database is used in planning.	3.42	Highly Prepared	3.21	Prepared
Overall Mean	**3.43**	**Highly Prepared**	**3.28**	**Highly Prepared**

As presented in Table 11, coastal BDRRMCs obtained an overall mean of 3.43, interpreted as Highly Prepared, while inland BDRRMCs obtained 3.28, also interpreted as Highly Prepared. This indicates that both groups demonstrated a high level of preparedness in managing their DRRM databases and inventories, although coastal BDRRMCs obtained a slightly higher mean. This finding is supported by Asuncion et al. (2025), who emphasized that effective local disaster risk reduction requires reliable data management, standardized information systems, and regularly updated disaster-related records. They also identified fragmented databases and difficulties in maintaining updated information as continuing

challenges among local government units. These findings highlight the importance of maintaining accurate and accessible DRRM databases to support informed planning and decision-making.

In terms of the highest-rated indicator, both coastal and inland BDRRMCs obtained their highest mean in "DRRM data is recorded properly," with 3.49 and 3.39, respectively. This suggests that both groups demonstrated preparedness in documenting disaster-related information. Proper recording of DRRM data provides an important basis for organizing information and supporting disaster-related decisions. This finding is consistent with Dariagan et al. (2021), who identified poor database management as a challenge in local disaster preparedness and emphasized the need to develop an organized disaster information management system.

On the other hand, the lowest-rated indicator among coastal BDRRMCs was "Inventory of resources is updated," with a mean of 3.40, while inland BDRRMCs obtained their lowest mean in "Database is used in planning," with 3.21. Although these indicators were still rated Highly Prepared for coastal BDRRMCs and Prepared for inland BDRRMCs, respectively, the results suggest that regular updating of resource inventories and the use of database information in planning may still be strengthened. The finding is supported by Goh et al. (2019), who emphasized the importance of an organized disaster risk reduction and management information system in consolidating community-level disaster data, monitoring affected populations, and providing relevant information for disaster preparedness and decision-making.

The qualitative findings provide additional context through the theme Financial and Resource Constraints. Participant 84 stated, "Our funds were insufficient, especially when there were numerous needs to address before an approaching disaster." while Participant 31 shared, "Our resources were limited, so we had to make do with whatever was available in the barangay." These responses highlight the challenges that may affect the maintenance of updated resource inventories and the availability of reliable information for planning. In relation to Systems Theory, the findings emphasize that accurate records and updated inventories are important components of a coordinated disaster preparedness system.

Table No. 12. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on Stakeholder and Volunteer Coordination

Indicators	Coastal		Inland	
	Mean	Descriptive Equivalent	Mean	Descriptive Equivalent
1.11 Stakeholder and Volunteer Coordination				
1. Stakeholders are involved.	3.20	Prepared	2.97	Prepared
2. Volunteers are mobilized.	3.63	Highly Prepared	3.27	Highly Prepared
3. Partnerships are maintained.	3.51	Highly Prepared	3.25	Prepared

Overall Mean	**3.44**	**Highly Prepared**	**3.17**	**Prepared**

As presented in Table 12, coastal BDRRMCs obtained an overall mean of 3.44, interpreted as Highly Prepared, while inland BDRRMCs obtained 3.17, interpreted as Prepared. This indicates that coastal BDRRMCs demonstrated a higher level of preparedness in coordinating with stakeholders and volunteers compared with inland BDRRMCs. The findings highlight the importance of collaboration and community participation in disaster risk reduction. Mishra and Dahal (2024) emphasized that inter-agency coordination and stakeholder collaboration contribute to improved disaster preparedness and response. Similarly, Alampay et al. (2019) emphasized the importance of establishing coordination mechanisms between local governments, volunteer groups, and civil society organizations. Their study demonstrated how volunteer participation in preparedness, response, and recovery activities can strengthen community involvement in disaster risk management.

In terms of the highest-rated indicator, both coastal and inland BDRRMCs obtained their highest mean in "Volunteers are mobilized," with 3.63 and 3.27, respectively. This suggests that both groups demonstrated preparedness in mobilizing volunteers to support disaster-related activities. The active involvement of volunteers provides additional support in carrying out preparedness and response activities at the community level. This finding is consistent with Ngulube et al. (2025), who emphasized that sustained community participation strengthens disaster risk reduction initiatives and contributes to long-term community resilience. Similarly, Alampay et al. (2019) emphasized the importance of institutionalizing volunteer participation in local disaster risk reduction and management. Their findings highlighted how collaboration between local government units and volunteers can strengthen community involvement and improve local disaster management efforts.

On the other hand, the lowest-rated indicator for both coastal and inland BDRRMCs was "Stakeholders are involved," with means of 3.20 and 2.97, respectively. Although both groups were rated Prepared, the results suggest that involving stakeholders in DRRM activities remains an area that needs further improvement, particularly among inland BDRRMCs. This supports the findings of Mishra and Dahal (2024), who highlighted the importance of strengthening coordination and collaboration among agencies and stakeholders in disaster preparedness.

The qualitative findings provide further context through the theme Limited Community Cooperation and Participation. Participant 5 stated, "Some people did not listen to our reminders because they thought they would not be affected anyway." while Participant 39 shared, "There were really some residents who did not cooperate even though we repeatedly reminded them." These responses reflect the challenges BDRRMCs encounter in encouraging community participation and cooperation. In relation to Systems Theory, the findings emphasize that effective disaster preparedness requires the active participation and coordination of the different individuals and groups within the community.

Table No. 13. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on Emergency Response Teams

Indicators	Coastal		Inland	
	Mean	Descriptive Equivalent	Mean	Descriptive Equivalent
1.12 Emergency Response Teams				
1. Response teams are organized.	3.38	Highly Prepared	3.21	Prepared
2. Members are trained regularly.	3.48	Highly Prepared	2.97	Prepared
3. Team performance is supervised.	3.54	Highly Prepared	3.06	Prepared
Overall Mean	**3.47**	**Highly Prepared**	**3.08**	**Prepared**

As presented in Table 13, coastal BDRRMCs obtained an overall mean of 3.47, interpreted as Highly Prepared, while inland BDRRMCs obtained 3.08, interpreted as Prepared. This indicates that coastal BDRRMCs demonstrated a higher level of preparedness in organizing and managing their emergency response teams compared with inland BDRRMCs. This highlights the importance of establishing clear responsibilities, maintaining capable personnel, and ensuring that response teams are ready to perform their duties during emergencies. In relation to this, Jose (2025) reported that although DRRM strategies were generally implemented at a high level in LGU San Jose, challenges involving manpower, equipment, and facilities remained. These findings emphasize the need to continuously strengthen the resources and organizational capacity needed for effective disaster response.

In terms of the highest-rated indicator, coastal BDRRMCs obtained their highest mean in "Team performance is supervised," with 3.54. Similarly, inland BDRRMCs obtained their highest mean in the same indicator, with 3.06. This suggests that both groups recognized the importance of supervising emergency response teams to ensure that their duties are properly carried out. Proper supervision helps ensure that assigned duties are carried out and that team members remain guided in performing their responsibilities. This is consistent with Mishra and Dahal (2024), whose proposed framework emphasized the importance of clearly shared responsibilities and coordination among organizations involved in disaster relief. Their work highlights how coordinated efforts can help improve the management of disaster-related activities.

On the other hand, the lowest-rated indicator for coastal BDRRMCs was "Response teams are organized," with a mean of 3.38, while inland BDRRMCs obtained their lowest mean in "Members are trained regularly," with 2.97. Although both groups were rated Prepared or Highly Prepared in these areas, the results suggest that the organization of response teams and the regular training of their members require continued attention, particularly among inland BDRRMCs. This is particularly relevant to inland BDRRMCs, whose lower rating in regular training suggests a need for more consistent capacity-building opportunities. Supporting this, Lumabi et al. (2025) identified limitations in technical training and capacity-building among barangay disaster management committees. Their findings reinforce the

importance of continuous training in developing the knowledge and skills required for disaster preparedness and response.

The qualitative findings provide further context through the themes Financial and Resource Constraints and Inadequate Emergency Equipment and Transportation. Participant 21 stated, "Sometimes, we had difficulty responding because we did not have enough equipment." while Participant 99 shared, "We had a severe shortage of vehicles that we could use, especially when there were residents who needed to be rescued." These responses highlight the limitations that may affect the readiness and performance of emergency response teams. In relation to Systems Theory, the findings emphasize that organized and capable response teams require adequate resources, proper coordination, and continuous development to function effectively as part of the disaster preparedness system.

Table No. 14. Level of preparedness of coastal and inland BDRRMCs in relation to their mandated functions on DRRM Operations Center

Indicators	**Coastal**		**Inland**	
	Mean	**Descriptive Equivalent**	**Mean**	**Descriptive Equivalent**
1.13 DRRM Operations Center				
1. A DRRM Operations Center is established.	3.46	Highly Prepared	3.20	Prepared
2. The center is properly equipped.	3.35	Highly Prepared	3.13	Prepared
3. The center is functional during emergencies.	3.23	Prepared	3.12	Prepared
Overall Mean	**3.35**	**Highly Prepared**	**3.15**	**Prepared**

As presented in Table 14, coastal BDRRMCs obtained an overall mean of 3.35, interpreted as Highly Prepared, while inland BDRRMCs obtained 3.15, interpreted as Prepared. This indicates that coastal BDRRMCs demonstrated a slightly higher level of preparedness in establishing and maintaining DRRM operations centers. The findings highlight the importance of having functional facilities that support coordination and emergency response. Jose (2025) emphasized that effective DRRM implementation depends on proper coordination, leadership, and consistency in carrying out disaster-related activities.

In terms of the highest-rated indicator, both coastal and inland BDRRMCs obtained their highest mean in "A DRRM Operations Center is established," with 3.46 and 3.20, respectively. This suggests that both groups have established operations centers that can serve as focal points for disaster-related coordination. The presence of such facilities supports the organization of local disaster preparedness and response activities.

On the other hand, the lowest-rated indicator for both coastal and inland BDRRMCs was "The center is functional during emergencies," with means of 3.23 and 3.12, respectively. These results suggest that despite the establishment of operations centers, their functionality during actual emergencies remains an

area that needs further attention. This is consistent with Lumabi et al. (2025), who identified gaps in emergency supplies and facilities among BDRRMCs.

The qualitative findings provide further context through the themes Financial and Resource Constraints. Participant 12 stated, "We really lacked facilities and equipment such as first aid kits, communication equipment, and evacuation facilities." This response highlights the limitations in facilities and equipment that may affect the functionality of DRRM operations centers during emergencies. In relation to Systems Theory, the findings emphasize that an operations center must have adequate facilities, equipment, and resources to function effectively as part of the overall disaster preparedness system.

Table No. 15. Summary of the Comparative Level of Preparedness of Coastal and Inland BDRRMCs

Indicators	**Coastal**		**Inland**	
	Mean	**Descriptive Equivalent**	**Mean**	**Descriptive Equivalent**
1.1 Planning and Coordinating DRRM Programs	3.52	Highly Prepared	3.37	Highly Prepared
1.2 Risk Assessment and Contingency Planning	3.46	Highly Prepared	3.25	Prepared
1.3 Hazard and Risk Information Management	3.46	Highly Prepared	3.29	Highly Prepared
1.4 DRRM Trainings and Orientations	3.52	Highly Prepared	3.35	Highly Prepared
1.5 Early Warning Systems	3.37	Highly Prepared	3.13	Prepared
1.6 DRRM Plans and Budgeting	3.43	Highly Prepared	3.13	Prepared
1.7 Monitoring and Emergency Response	3.54	Highly Prepared	3.23	Prepared
1.8 Information Dissemination and Awareness	3.41	Highly Prepared	3.31	Highly Prepared
1.9 Cost-effective DRR Measures	3.35	Highly Prepared	3.17	Prepared
1.10 DRRM Database and Inventory	3.43	Highly Prepared	3.28	Highly Prepared
1.11 Stakeholder and Volunteer Coordination	3.44	Highly Prepared	3.17	Prepared
1.12 Emergency Response Teams	3.47	Highly Prepared	3.08	Prepared
1.13 DRRM Operations Center	3.35	Highly Prepared	3.15	Prepared
Overall Mean	**3.44**	**Highly Prepared**	**3.22**	**Prepared**

The table shows that coastal BDRRMCs were generally Highly Prepared, with an overall mean of 3.44, while inland BDRRMCs were Prepared, with an overall mean of 3.22. The findings emphasize that having an established facility is only one aspect of preparedness, as the center must also be equipped and capable of supporting coordination and response activities when emergencies occur. In this regard, Jose (2025) identified challenges involving equipment, facilities, and other operational resources in local DRRM implementation, highlighting the need to strengthen the capacity of local disaster management facilities.

In terms of the highest-rated indicator, both coastal and inland BDRRMCs obtained their highest mean in "A DRRM Operations Center is established," with 3.46 and 3.20, respectively. This indicates that establishing an operations center was a recognized component of preparedness among both groups. Such facilities can provide a designated location for coordinating disaster-related information, organizing response activities, and communicating with concerned personnel during emergencies. Their establishment provides an important foundation for local DRRM operations.

On the other hand, the lowest-rated indicator for both coastal and inland BDRRMCs was "The center is functional during emergencies," with means of 3.23 and 3.12, respectively, both interpreted as Prepared. Although both groups demonstrated preparedness, the lower ratings suggest that ensuring the continuous functionality of operations centers during emergencies remained an area for improvement. This includes maintaining adequate equipment, supplies, communication facilities, and other operational requirements. In support of this, Lumabi et al. (2025) identified resource-related difficulties among barangay disaster management committees, particularly in securing emergency supplies and necessary facilities. Their findings highlight the importance of providing adequate resources to sustain local disaster management operations.

The quantitative findings are supported by the qualitative results, particularly the themes on Commitment to Emergency Response and Community Safety, Disaster Information Dissemination and Early Warning, Community-Based Disaster Preparedness Training and Drills, and Financial and Resource Constraints. Participants' accounts of preparedness activities, emergency response efforts, warnings, and community drills help explain the relatively high ratings in these functions. On the other hand, reported limitations in funding, equipment, transportation, and operational resources provide context for the lower ratings in resource-related functions, particularly Emergency Response Teams among inland BDRRMCs. These findings demonstrate that while both coastal and inland BDRRMCs show commitment to disaster preparedness, strengthening resources, operational capacity, and institutional support remains important in addressing their identified areas for improvement.

3.2 Is there a significant difference in the level of preparedness between coastal and inland BDRRMCs in carrying out their mandated Disaster Risk Reduction and Management (DRRM) functions?

	Mean	**SD**	**t-value**	**p-value**	**Interpretation**
Coastal	3.44	0.108	8.165*	0.000	Significant
Inland	3.22	0.131			

*There is a significant difference between … having a p-value of 0.000.

This table presents the comparison of the overall level of preparedness between coastal and inland Barangay Disaster Risk Reduction and Management Committees (BDRRMCs). The findings revealed that the coastal BDRRMCs obtained a higher mean score (M = 3.44, SD = 0.108) than the inland BDRRMCs (M = 3.22, SD = 0.131). The computed t-value of 8.165 and p-value of < .001 indicate a statistically

significant difference in the level of preparedness between the two groups. Since the p-value is lower than the 0.05 level of significance, the null hypothesis stating that there is no significant difference in the level of preparedness between coastal and inland BDRRMCs is rejected.

The findings indicate that coastal BDRRMCs demonstrate a significantly higher level of preparedness than inland BDRRMCs. This difference may be associated with the greater exposure of coastal barangays to hazards such as typhoons, storm surges, and coastal flooding, which may require more frequent preparedness activities, training, monitoring, and coordination. As a result, coastal BDRRMCs may have developed stronger preparedness practices in response to the hazards commonly experienced in their communities. Overall, the findings suggest that geographic conditions may influence BDRRMC preparedness and highlight the importance of strengthening disaster preparedness strategies according to the specific risks and needs of each locality.

The findings support Contingency Theory, particularly the idea that organizational practices and leadership approaches should be appropriate to the conditions in which an organization operates. In disaster risk reduction, this means that preparedness strategies should consider the hazards and risks present in each community. The higher preparedness rating obtained by coastal BDRRMCs suggests that their DRRM practices may have been shaped by the specific demands associated with their geographical location and exposure to coastal hazards. This finding is consistent with Dariagan et al. (2021), who reported that coastal local government units in Panay Island demonstrated higher preparedness levels than other geographical profiles. Their findings highlight the importance of considering geographical conditions when developing and implementing local disaster preparedness strategies. Although the overall comparison showed a statistically significant difference between coastal and inland BDRRMCs, a follow-up analysis was conducted to determine which specific mandated DRRM functions contributed to the observed difference. Since the study involved only two groups, coastal and inland BDRRMCs, an independent-samples t-test was conducted for each of the 13 mandated DRRM preparedness sub-categories. Because multiple comparisons were performed, the Bonferroni adjustment was applied to control the overall Type I error. The adjusted significance level was calculated as $\alpha = .05/13 = .00385$. Thus, only p-values below .00385 were considered statistically significant in the follow-up analysis.

This follow-up analysis helps identify the specific DRRM function where the significant difference between coastal and inland BDRRMCs lies, rather than concluding only from the overall preparedness score.

Sub-category	**Coastal Mean**	**Inland Mean**	**t- value**	**p-value**	**Interpretation Using α=0.05**	**Interpretation Using adjusted α=0.00385**
1.1 Planning	3.52	3.37	2.591	0.061	Not significant	Not significant
1.2 Risk Assessment	3.46	3.25	2.279	0.085	Not significant	Not significant
1.3 Hazard Information	3.46	3.29	3.772	0.020	Significant	Not significant
1.4 Training	3.52	3.35	1.115	0.327	Not significant	Not significant

1.5 Early Warning Systems	3.37	3.13	5.210	0.006	Significant	Not significant
1.6 Plans & Budgeting	3.43	3.13	3.683	0.021	Significant	Not significant
1.7 Monitoring & Emergency Response	3.54	3.23	6.734	0.003	Significant	Significant
1.8 Information Dissemination	3.41	3.31	2.933	0.043	Significant	Not significant
1.9 Cost-effective DRR Measures	3.35	3.17	1.523	0.202	Not significant	Not significant
1.10 DRRM Database and Inventory	3.43	3.28	2.533	0.064	Not significant	Not significant
1.11 Stakeholder and Volunteer Coordination	3.44	3.17	1.764	0.152	Not significant	Not significant
1.12 Emergency Response Teams	3.47	3.08	4.596	0.010	Significant	Not significant
1.13 DRRM Operations Center	3.35	3.15	2.769	0.050	Not significant	Not significant

Note. Bonferroni-adjusted $\alpha = .05/13 = .00385$.

*Using the criterion $p < .05$, $p = .050$ is considered not significant.

Follow-up analysis showed that coastal BDRRMCs obtained higher mean scores than inland BDRRMCs across all 13 DRRM preparedness sub-categories. At the conventional 0.05 level, significant differences were observed in Hazard Information, Early Warning Systems, DRRM Plans and Budgeting, Monitoring and Emergency Response, Information Dissemination and Awareness, and Emergency Response Teams. However, after applying the Bonferroni adjustment for the 13 comparisons (adjusted $\alpha = .00385$), only Monitoring and Emergency Response showed a statistically significant difference between coastal and inland BDRRMCs. This means that there is a significant difference between coastal and inland BDRRMCs in terms of Monitoring and Emergency Response. Specifically, coastal BDRRMCs obtained a higher mean score of 3.54 compared with 3.23 for inland BDRRMCs. The mean difference of 0.31 indicates that coastal BDRRMCs demonstrated a higher level of preparedness in monitoring hazards and carrying out emergency response activities. The p-value of .003 is lower than the adjusted significance level of .00385,

confirming that this difference remains statistically significant even after controlling for multiple comparisons.

Therefore, among the 13 mandated DRRM functions, Monitoring and Emergency Response is the specific area where the preparedness of coastal and inland BDRRMCs significantly differs. This finding suggests that the geographic setting and the types of hazards commonly encountered by the barangays may influence their preparedness practices, particularly in monitoring emerging risks, coordinating response activities, and taking immediate action during emergencies.

3.3 What are the experiences encountered by coastal and inland BDRRMCs in fulfilling their mandated disaster preparedness and management functions?

Theme 1: Continuous Monitoring and Hazard Preparedness

One of the major themes that emerged from the interviews was Continuous Monitoring and Hazard Preparedness. The participants described the importance of remaining vigilant and maintaining preparedness even before disasters occur. Their responses emphasized that disaster preparedness involves continuous monitoring of possible hazards, making necessary preparations, and ensuring that BDRRMC members are ready to protect their communities when emergencies arise.

Some participants shared:

"As a member of the BDRRMC, we constantly monitored our surroundings for signs of an approaching disaster." (**P7**)

"We always observed changes in the weather to determine whether we needed to prepare or if it was not yet necessary." (**P42**)

"Even before a typhoon arrived, we already made preparations so that we would not have to rush once the disaster struck." (**P18**)

"We really had to remain alert at all times because we never knew when a disaster might occur." (**P86**)

"We regularly monitored the situation, Ma'am, and conducted rounds around the barangay to identify areas that might be affected." (**P53**)

These statements demonstrate that preparedness is regarded as a continuous responsibility that requires vigilance and readiness. The BDRRMCs recognize the importance of anticipating possible hazards and preparing their communities before disasters occur.

The findings support Systems Theory (von Bertalanffy, 1968), which explains that the different parts of an organization need to work together to achieve a common goal. In disaster risk reduction, monitoring hazards and preparing for possible emergencies are important responsibilities of the BDRRMC. These activities help the committee understand possible risks and take necessary actions before disasters happen. This is supported by Ferrer (2026), who explained that disaster preparedness requires community awareness, support from institutions, and the use of technology. Similarly, Ramlee and Knight (2025) discussed the need for better planning and coordination to address disaster-related challenges. Gabriel et al. (2021) also stressed the importance of including disaster risk reduction measures in local development plans. Their study showed that although policies and plans were already in place, their implementation still needed improvement. These studies show that effective disaster preparedness requires cooperation, proper planning, and continuous monitoring to help local disaster management committees carry out their responsibilities.

Theme 2: Commitment to Emergency Response and Community Safety

Another theme that emerged from the interviews was Commitment to Emergency Response and Commu-

nity Safety. The participants highlighted their dedication to responding to emergencies and ensuring the safety of their constituents. Despite the difficulties associated with disaster response, they expressed their willingness to fulfill their responsibilities and assist community members during emergencies.

The participants stated:

"We performed our duties because it was our responsibility to help our fellow community members during disasters." (**P91**)

"Our work was not easy, but we still did everything we could to help the residents." (**P24**)

"Whenever someone needed help, we immediately took action, even when the situation was sometimes difficult." (**P65**)

"We were always ready to assist the residents, especially when there were families who needed to be evacuated." (**P3**)

"Whenever there was an emergency, we responded immediately to ensure the safety of the people." (**P78**)

These responses reflect the commitment of BDRRMC members to prioritize public safety and provide assistance whenever necessary. Their statements indicate that emergency response requires dedication, readiness, and a strong sense of responsibility toward the community.

The findings support Systems Theory (von Bertalanffy, 1968), which explains that the different parts of a system must work together to achieve a common purpose. The involvement of BDRRMC members in emergency response shows how each member's assigned duties contribute to the overall disaster management efforts of the barangay. When members perform their responsibilities properly, the committee can better coordinate its actions and provide assistance to the community during emergencies. This is supported by Jose (2025), who discussed the importance of evacuation plans, risk mapping, contingency planning, and early warning systems in carrying out local disaster risk reduction activities. Similarly, Mishra and Dahal (2024) emphasized the need for cooperation among government agencies, organizations, and community members in managing disaster situations. These studies highlight that proper planning and teamwork are important in organizing emergency response activities and protecting communities from possible disaster impacts.

Theme 3: Disaster Information Dissemination and Early Warning

The interviews also revealed Disaster Information Dissemination and Early Warning as an important aspect of BDRRMC preparedness. The participants emphasized the importance of informing residents about impending hazards through announcements, warnings, and other communication activities. They explained that providing timely information allows community members to prepare and take appropriate precautions before disasters occur.

The participants shared:

"We provided information to the residents early whenever a typhoon was approaching so they could prepare in advance." (**P36**)

"We reminded the people to listen to warnings and not ignore the announcements." (**P82**)

"We issued advisories to the residents whenever a typhoon was approaching so they could prepare ahead of time." (**P11**)

"We immediately informed the residents whenever there was a danger so they would not be caught off guard." (**P59**)

"We issued warnings to the people so they would know what to do when a disaster occurred." (**P97**)

These responses demonstrate that early warning and information dissemination are essential in ensuring that residents are aware of possible hazards and can prepare accordingly. Effective communication helps reduce uncertainty and enables community members to make timely decisions during emergencies.

The findings support Systems Theory (von Bertalanffy, 1968), which explains that the different parts of a system need to communicate and share information to work together effectively. In disaster management, sharing warnings on time helps BDRRMC members and residents become aware of possible dangers and take the necessary precautions. This allows the committee and the community to work together in preparing for possible hazards.

This is supported by Islam et al. (2025), who discussed how early warning systems help communities receive important information and prepare for possible disasters. Similarly, Asih et al. (2023) highlighted the value of public education in improving people's awareness and preparedness. In the Philippine setting, Pelone and Cajano (2025) identified problems such as limited technical knowledge, weak communication systems, and lack of local risk information that can affect how disaster warnings reach communities. These studies emphasize that disaster information should be shared on time and presented in a clear and understandable way so that people can make informed decisions and prepare for possible hazards.

Theme 4: Community-Based Disaster Preparedness Training and Drills

Community-Based Disaster Preparedness Training and Drills also emerged as a theme from the interviews. The participants recognized the importance of conducting preparedness activities and emergency drills to familiarize residents with appropriate safety procedures. These activities help community members understand how to respond during different types of emergencies and reduce confusion when actual disasters occur.

The participants shared:

“Training was important because it helped the members know what to do during emergencies.” (**P14**)

“We conducted training activities such as earthquake drills and fire drills so that residents would know how to respond when a disaster occurred.” (**P73**)

“We participated in activities and training related to disaster preparedness.” (**P45**)

“Drills were really necessary so that people would not panic during earthquakes or fires.” (**P89**)

“Through training, we learned more about how to respond and assist the residents.” (**P28**)

This response highlights the importance of practical preparedness activities in improving community awareness and readiness. Through training and simulation exercises, residents become more familiar with emergency procedures, evacuation protocols, and appropriate safety measures.

This finding supports Systems Theory (von Bertalanffy, 1968), as training and simulation exercises help develop the knowledge and capabilities of different components within the disaster management system. Through these activities, BDRRMC members and residents become more familiar with their respective responsibilities and learn how to work together during emergencies. This highlights the importance of continuous disaster education and training in strengthening community preparedness. This is supported by Asih et al. (2023), who emphasized that public education helps people understand disaster risks and prepare for possible emergencies. Similarly, Gundran et al. (2023) examined the simulation training needs of selected government agencies in the National Capital Region and highlighted the importance of identifying training gaps to improve disaster preparedness and response. These studies emphasize the value of continuous disaster education, regular training, and simulation exercises in developing the knowledge and skills needed to respond to emergencies.

Theme 5: Financial and Resource Constraints

Financial and Resource Constraints emerged as one of the challenges encountered by the BDRRMCs. The participants identified insufficient funding and limited resources as difficulties that affected their ability to carry out disaster preparedness and emergency response activities. These limitations may affect the implementation of preparedness programs and the availability of resources needed during emergencies.

The participants expressed:

"One of our main problems was the lack of funds for the needs of the BDRRMC." (**P62**)

"Sometimes, the budget was not enough to purchase all the equipment we needed." (**P9**)

"Our funds were insufficient, especially when there were numerous needs to address before an approaching disaster." (**P84**)

"Our resources were limited, so we had to make do with whatever was available in the barangay." (**P31**)

"It was more difficult to carry out our duties when there were insufficient funds for activities and emergency response." (**P56**)

These statements indicate that financial limitations and inadequate resources remain concerns in carrying out the mandated functions of the BDRRMCs. Even when committee members are willing to perform their responsibilities, limited resources may restrict the activities they can implement and the assistance they can provide during emergencies.

This finding may be explained through Systems Theory (von Bertalanffy, 1968), which emphasizes that an organization needs sufficient resources to carry out its functions. When funding, supplies, or other resources are limited, the BDRRMC may find it difficult to perform its duties and support the activities needed for disaster preparedness.

This is consistent with Ramlee and Knight (2025), who discussed resource limitations and coordination challenges in disaster risk management. Similarly, Marcos et al. (2025) identified insufficient funding and fragmented coordination among agencies as challenges affecting disaster risk governance in coastal barangays. Lumabi et al. (2025) also reported limitations in funding, emergency supplies, and technical training among barangay disaster management councils in Rizal, Kalinga. These studies support the finding that limited resources may affect the ability of local disaster management committees to fulfill their responsibilities.

Theme 6: Inadequate Emergency Equipment and Transportation

Another challenge identified in the interviews was Inadequate Emergency Equipment and Transportation. The participants described the lack of appropriate vehicles, rescue equipment, communication devices, first aid supplies, and other emergency facilities as limitations affecting their disaster response operations. These resources are necessary to ensure that BDRRMC members can provide timely assistance, particularly during rescue and evacuation activities.

The participants stated:

"We had a severe shortage of vehicles that we could use, especially when there were residents who needed to be rescued." (**P99**)

"Sometimes, we had difficulty responding because we did not have enough equipment." (**P21**)

"We still needed more equipment that could be used for rescue operations and providing first aid." (**P47**)

"Our equipment was insufficient, especially when there were several areas that needed to be reached." (**P68**)

"We really lacked facilities and equipment such as first aid kits, communication equipment, and evacuation facilities." (**P12**)

These responses show that inadequate emergency equipment and transportation can affect the operational readiness of the BDRRMCs. The availability of appropriate facilities and equipment is essential in conducting rescue operations, providing immediate assistance, and ensuring the safety of affected residents.

This finding may also be explained through Systems Theory (von Bertalanffy, 1968), which emphasizes that the different parts of an organization need proper support to function effectively. Inadequate equipment and transportation may affect emergency operations and make it difficult for the BDRRMC to provide timely assistance to affected residents.

This is consistent with Dariagan et al. (2021), whose study on local government disaster preparedness in Panay Island discussed challenges related to manpower and disaster preparedness resources. Similarly, Nacaya et al. (2023) found that BDRRMCs in the Tagoloan River Basin had limited access to necessary hardware, supplies, tools, and facilities. Lumabi et al. (2025) also identified limitations in emergency supplies among BDRRMCs in Rizal, Kalinga. These studies highlight the importance of providing adequate equipment, facilities, and emergency supplies to support local disaster response operations.

Theme 7: Limited Community Cooperation and Participation

Limited Community Cooperation and Participation also emerged as a challenge experienced by the BDRRMCs. The participants explained that some residents were not actively involved in disaster preparedness activities or did not consistently cooperate with barangay officials. This lack of participation may make it difficult for the committees to implement preparedness measures and mobilize the community during emergencies.

One participant shared:

"There were really some residents who did not cooperate even though we repeatedly reminded them." (**P39**)

"Sometimes, it was difficult to convince them to follow the preparedness measures implemented by the barangay." (**P75**)

"Some people did not listen to our reminders because they thought they would not be affected anyway." (**P5**)

"Not all residents participated in the activities we conducted regarding disaster preparedness." (**P93**)

"Preparations would have been more effective if all residents cooperated with the barangay." (**P51**)

This response suggests that the implementation of disaster preparedness activities requires not only the commitment of BDRRMC members but also the cooperation of community residents. Active participation is important in ensuring that preparedness initiatives are understood, accepted, and supported by the people they are intended to protect.

This finding supports Systems Theory (von Bertalanffy, 1968), which explains that the different parts of a system depend on one another to achieve a common goal. Disaster preparedness is not the responsibility of the BDRRMC alone. Residents also need to participate and cooperate with the committee in carrying out preparedness activities. Working together helps the barangay prepare for possible hazards and respond to emergencies.

This is supported by Mutiarni et al. (2022), who emphasized the importance of involving local communities in disaster risk reduction activities to strengthen community resilience. Herrera (2021) also found that improving relationships between barangay officials and residents was necessary in areas where

disaster risk reduction implementation was low. These findings highlight the importance of cooperation between local officials and community members in strengthening disaster preparedness.

Theme 8: Resistance to Evacuation and Disaster Safety Directives

The final theme identified was Resistance to Evacuation and Disaster Safety Directives. The participants described difficulties in convincing some residents to follow instructions from barangay officials, particularly during evacuation activities. Some residents reportedly delayed evacuation or refused to comply with safety directives until the disaster was already imminent. Such behavior creates additional challenges for BDRRMC members, especially when immediate evacuation is necessary to protect lives.

The participants expressed:

"There were some residents who refused to evacuate even when we told them that their area was already dangerous." (**P80**)

"It was difficult to convince them to leave their homes because they did not want to abandon their belongings." (**P16**)

"Some residents waited until the situation became worse before agreeing to evacuate." (**P44**)

"Sometimes, we had to explain repeatedly to help them understand why evacuation was necessary." (**P100**)

"We had difficulty implementing evacuation procedures when residents refused to listen to what we were telling them." (**P33**)

These statements demonstrate that resistance to evacuation and delayed compliance with safety instructions remain challenges in disaster preparedness and response. When residents fail to follow evacuation directives promptly, the risks to their safety may increase, while emergency operations may become more difficult for the BDRRMCs.

This finding supports Systems Theory (von Bertalanffy, 1968), which explains that the different parts of a system need to work together to achieve a common goal. When residents refuse or delay evacuation, the BDRRMC may have difficulty carrying out its response plans and ensuring everyone's safety. This shows that disaster preparedness requires not only the efforts of the committee but also the cooperation of the community.

This is supported by Herrera (2021), who emphasized the need to strengthen relationships between barangay officials and residents to improve disaster risk reduction implementation. Similarly, Tanguid and Tanguid (2023) found that residents and barangay officials in Oriental Mindoro had a high level of disaster risk reduction knowledge, which was associated with information dissemination efforts. Pelone and Cajano (2025) also identified weak communication systems, limited access to local risk information, and language barriers as factors that may delay community responses. These studies highlight the importance of building community awareness, communicating evacuation instructions clearly, and encouraging cooperation to protect lives during emergencies.

3.4 Based on the findings of the study, what disaster preparedness and management program could be proposed to enhance the capabilities of coastal and inland BDRRMCs?

Based on the findings of the study, the researcher developed a proposed disaster preparedness enhancement program to address the identified strengths and areas for improvement among the coastal and inland Barangay Disaster Risk Reduction and Management Committees (BDRRMCs) of Gonzaga, Cagayan. Although coastal BDRRMCs demonstrated a high level of preparedness, inland BDRRMCs were generally prepared but exhibited comparatively lower preparedness in several mandated functions. Furthermore, the qualitative findings revealed challenges involving limited financial resources, inadequate

rescue equipment, insufficient training opportunities, limited community participation, and the need for stronger inter-agency coordination.

In response to these findings, the researcher proposed **PROJECT H.A.N.D.A. (Holistic Advancement for Nurturing Disaster-Ready Actions)**, a capability enhancement program designed to strengthen the disaster preparedness and operational capacity of coastal and inland BDRRMCs. The program focuses on six key result areas: capacity building, community preparedness, information dissemination, resource enhancement, inter-agency collaboration, and monitoring and evaluation.

The program aims to improve the competencies of BDRRMC members, promote active community participation, strengthen coordination with concerned agencies, and enhance the availability and management of disaster response resources. It also seeks to sustain the existing preparedness capabilities of coastal BDRRMCs while addressing the identified areas for improvement among inland BDRRMCs.

PROJECT H.A.N.D.A.

Holistic Advancement for Nurturing Disaster-Ready Actions

Building Resilient Barangays Through Preparedness and Collaboration

General Objective

To strengthen the disaster preparedness and operational capacity of coastal and inland BDRRMCs through enhanced training, adequate resources, improved community participation, and strengthened inter-agency collaboration.

Specific Objectives

1. Enhance the knowledge and skills of BDRRMC members through disaster preparedness and emergency response training.
2. Strengthen community awareness and participation in DRRM activities.
3. Improve coordination among BDRRMCs, MDRRMO, and partner agencies.
4. Ensure the availability and proper maintenance of disaster response equipment and emergency supplies.
5. Establish continuous monitoring and evaluation of disaster preparedness activities.

Key Result Area	Proposed Activities	Responsible Persons/Agencies	Time Frame
Capacity Building	Conduct Search and Rescue, First Aid, Basic Life Support, and Incident Command System training.	MDRRMO, BFP, PNP, RHU, BDRRMC	Quarterly
Community Preparedness	Conduct disaster preparedness seminars, orientations, and earthquake, fire, and flood drills.	BDRRMC, Schools, MDRRMO	Quarterly
Information Dissemination	Disseminate hazard advisories, IEC materials, community announcements, and disaster-related updates.	MDRRMO, BDRRMC	Monthly
Resource Enhancement	Inspect, maintain, and update rescue equipment, first aid kits, communication devices, and emergency supplies.	Barangay Officials, BDRRMC, MDRRMO	Annually

Inter-agency Collaboration	Conduct coordination meetings and simulation exercises involving partner agencies and community volunteers.	MDRRMO, Barangay Officials, BDRRMC	Semi-annually
Monitoring and Evaluation	Conduct periodic assessments and post-activity evaluations to identify implementation gaps and necessary improvements.	MDRRMO, BDRRMC	Annually

Expected Outcomes

The implementation of PROJECT H.A.N.D.A. is expected to improve the knowledge and competencies of BDRRMC members, strengthen community awareness and participation, enhance inter-agency coordination, and improve the availability and functionality of disaster response equipment and resources. It is also expected to promote more systematic information dissemination, updated DRRM inventories, and improved operational readiness of barangay disaster management facilities. Ultimately, the program aims to sustain preparedness among coastal BDRRMCs while strengthening the identified areas for improvement among inland BDRRMCs, contributing to more resilient and disaster-ready communities.

Implementation and Evaluation

The proposed program may be implemented through the initiative and collaborative efforts of the Municipal Disaster Risk Reduction and Management Office (MDRRMO), barangay officials, BDRRMC members, and concerned partner agencies. The implementation of this program can also be assessed accomplishment reports, training attendance, community participation records, equipment inventories, coordination meeting documentation, and periodic evaluation reports. Monitoring the implementation of this program can determine the extent of the proposed activities and objectives achieved which will further provide an improvement for the preparedness of the community.

The proposed program will surely provide a basis for addressing the disaster preparedness gaps identified in the study. The implementation of it can be considered through the initiative of the concerned local government units as a framework in enhancing the organizational capabilities, operational readiness, and disaster resilience of coastal and inland barangays.

CONCLUSION

The study concludes that disaster preparedness should be adapted to the geographical conditions and hazard exposures of each barangay. Although BDRRMCs demonstrate commitment to their responsibilities, challenges involving resources, equipment, transportation, community participation, and evacuation compliance remain areas of concern.

Strengthening disaster preparedness requires continuous training, adequate institutional support, effective coordination, and active community involvement. In this regard, PROJECT H.A.N.D.A. was proposed to help address these needs and strengthen the disaster readiness and resilience of coastal and inland communities.

RECOMMENDATION

Based on the findings and conclusions of the study, the following recommendations are hereby offered:

1. The Local Government Unit (LGU) of Gonzaga, through the Municipal Disaster Risk Reduction and Management Office (MDRRMO), should prioritize strengthening the preparedness of inland

barangays by providing technical assistance, regular monitoring, and capability-building activities, particularly in emergency response, early warning systems, and DRRM planning and budgeting.

2. The Barangay Disaster Risk Reduction and Management Committees (BDRRMCs) should regularly conduct disaster preparedness training, simulation exercises, and community orientations to enhance the competencies of their members and improve the readiness of residents during emergencies.
3. The LGU and barangay officials should strengthen the allocation and utilization of disaster risk reduction funds to support the procurement, maintenance, and upgrading of rescue equipment, transportation, communication devices, first aid supplies, and other essential emergency response resources.
4. BDRRMCs should improve their monitoring and emergency response capabilities through regular hazard monitoring, testing and maintenance of early warning systems, updating of emergency response plans, and strengthening the functionality of their DRRM operations centers.
5. BDRRMCs should intensify community participation through information campaigns, evacuation drills, and disaster preparedness activities. Residents should be encouraged to cooperate with barangay officials, follow early warnings, and comply with evacuation directives to ensure community safety.
6. The LGU and BDRRMCs should strengthen coordination with the MDRRMO, Philippine National Police (PNP), Bureau of Fire Protection (BFP), Rural Health Unit (RHU), schools, and other relevant stakeholders to ensure coordinated disaster preparedness, resource sharing, and emergency response operations.
7. The Local Government Unit and concerned agencies are encouraged to consider adopting and implementing PROJECT H.A.N.D.A. (Holistic Advancement for Nurturing Disaster-Ready Actions) as a proposed capability enhancement program to address the identified gaps and further strengthen the disaster preparedness and operational capabilities of coastal and inland BDRRMCs.
8. Future researchers may conduct similar studies in other municipalities or provinces using larger samples, additional variables, or other research approaches to further examine the disaster preparedness capabilities and challenges of BDRRMCs across different geographical settings.

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