

Participatory Approaches in the Development of Barangay Disaster Risk Reduction and Management Plan in Selected Barangays of Municipality of Carmen, Davao Del Norte

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ABSTRACT

This study examined participatory approaches in the development of Barangay Disaster Risk Reduction and Management Plans (BDRRMPs) in selected barangays of the Municipality of Carmen, Davao del Norte. Anchored on the Community Resilience Framework, the research explored how risk-based planning, community consultation, and stakeholder collaboration contributed to local disaster preparedness. A descriptive qualitative design was employed using purposive sampling. Ten barangay officials and Disaster Risk Reduction and Management Committee members participated in focus group discussions. Data were analyzed using thematic analysis following Miles and Huberman's framework. Findings revealed that participatory planning was driven by risk assessments, lived disaster experiences, and sectoral engagement. However, limited financial resources and inconsistent community participation constrained effective implementation. The study found that strengthening community engagement, improving budget allocation, and enhancing inter-agency coordination are essential to improving barangay-level disaster resilience.

Keywords: disaster risk reduction, participatory planning, community resilience, BDRRM, barangay governance

INTRODUCTION

Raising awareness in disaster-prone areas about risks and response strategies is crucial for empowering communities to act during emergencies. A study was held to evaluate the performance of the Barangay Disaster Risk Reduction and Management Committee (BDRRMC) in Barangay San Miguel, Compostela, Compostela Valley, Philippines, for the 2015 calendar year, during which the community was recognized as the best initiator in disaster risk management. Using a descriptive survey method, researchers administered questionnaires to randomly selected residents. The study found that the high-performance level of the BDRRMC was attributed to the dedication of local officials and community members. The study indicates that there is a need to maintain a culture of disaster preparedness through ongoing monitoring of the DRRM plan and enhancing disaster contingency measures (Matunhay et al., 2019).

This study uses the Community Resilience (CR) Framework by Ellis et al. (2022) to better understand how different systems in the community work together during times of crisis. The framework brings together ideas from health, brain development, and disaster planning, showing how public systems, rules, and community outcomes influence one another. It helped in analyzing how certain government actions or lack of support can either strengthen or weaken a community's ability to cope. Cruz (2023) also pointed out that a big part of resilience comes from how the government responds through proper relocation, housing, health services, and access to jobs, especially for families in vulnerable areas.

Furthermore, the primary aim of this study was conducted a thorough evaluation of the Barangay Disaster Risk Reduction Management Plans (BDRRMPs) for the five selected barangays in the Municipality of Carmen, Davao del Norte. Specifically, this inquiry analyzed the adequacy of these plans and the comprehensiveness of

their contents. The research assessed how those plans were crafted and enhanced the resilience of the community. By investigating these critical aspects, the study aims to highlight best practices and identify areas for improvement, ultimately contributing to more robust and effective disaster preparedness and response strategies within the local communities. This inquiry is vital for ensuring that the barangays are better equipped to handle future disasters and safeguard the well-being of their residents.

The primary objectives of this research are threefold. First, it aims to uncover how they craft the plans. Second, the research objectives seek to unfold the steps and the processes they have conducted to develop the plan. Finally, the study aims to reveal the challenges in crafting the plan, and consolidate recommendations for assistance on how the plans developed. Through these objectives, the research hopes to contribute to improving disaster preparedness and response strategies at the grassroots level, specifically in the municipality of Carmen, Davao del Norte.

This inquiry significantly contributed to improving the disaster preparedness of global communities prone to natural disasters and calamities. It shed light on the best practices that this inquiry uncovered and used as a basis for improvement, and or used the malpractice that arose for devising new plans to protect the people from disaster. Through the information they would be guided or even gain confidence if positive results come out on this inquiry and if the result would be negative, they could suggest or ask for a much better plan for their safety.

Furthermore, the findings of this research would serve as a foundational resource for future researchers. They may draw insights from this research and potentially incorporate its results and conclusions into their own work. Finally, this study focuses only on the research for developing the Barangay Disaster Risk Reduction Management Plans for the Municipality of Carmen, and it was aligned with Sustainable Development Goal 11 (SDG 11), which focuses on making cities and human settlements inclusive, safe, resilient, and sustainable.

Despite all these limitations, lessons learned from this study would give an understanding of the development of BDRRMPs in Carmen, Davao del Norte. Findings from this study can serve as recommendations on possible improvement policies to practitioners and policymakers to strengthen disaster resilience and reduce the impact of natural disasters.

METHODS

The target participants for the study consisted of barangay officials and council members residing in the five selected barangays in the Municipality of Carmen, Davao del Norte, namely: Asuncion, Cebulano, Mangalcal, Tubod, and Sto. Niño. These barangays were selected due to the fact that they have been victimized by disasters in recent times. The main profile of the target participants consisted of those who are involved with DRRM planning, its implementation, and response at the barangay level, particularly the barangay captain and a member of the DRRM.

This research utilized a purposive sampling technique in the process of selecting the participants for this research. The selection ensured that individuals who are knowledgeable and involved in DRRM activities in their barangay were part of the research. In the conduct of the interview, a total of 10 participants were selected, and they underwent a Focus Group Discussion. According to Creswell & Creswell (2018), there are no hard and fast rules around how many people you should involve in your research; some researchers estimate between 10 and 50 participants as being enough, depending on your type of research and research question.

MATERIALS AND INSTRUMENTS

To effectively collect the necessary information for the study, the researcher developed a comprehensive interview guide designed to facilitate a smooth and structured flow during the interviews. This guide features open-ended questions, which are crucial for encouraging participants to elaborate on their thoughts and experiences. Such questions allow participants to provide rich, detailed responses, directly addressing the core issues outlined in the study's problem statement. To enhance the reliability and accuracy of the collected data, the researcher employed both note-taking and audio recording techniques.

The focus group discussion allows sufficient time for group discussion while remaining concise enough to respect the participants time. The interview guide is systematically divided into three sections: the introduction

of the nature of the interview, the interview proper, and the follow-up. The interviewer asked a series of primary questions, each supplemented by a minimum of three sub-questions. This structure not only helps to explore the main themes of the research but also encourages participants to provide detailed responses, enriching the overall data collection process. Through this organized approach, the researchers gathered valuable insights that would contribute meaningfully to the study.

Design And Procedure

This study employed a descriptive qualitative research design to examine participatory approaches in developing Barangay Disaster Risk Reduction and Management Plans (BDRRMPs) in selected barangays of Carmen, Davao del Norte. Qualitative research is appropriate for exploring how people interpret experiences and social conditions in real contexts (Creswell, 2014). Participants were selected through purposive sampling, ensuring that those included were directly involved in barangay DRRM planning and implementation (Creswell & Creswell, 2018). A total of ten (10) barangay officials and BDRRM Committee members participated in focus group discussions (FGDs).

Data collection involved securing permissions and informed consent, conducting FGDs using a semistructured interview guide, documenting responses through audio recording and note-taking, and preparing transcripts for analysis. Data were analyzed through thematic analysis guided by the framework of Miles and Huberman (1994), involving data reduction, data display, and conclusion drawing/verification.

To ensure trustworthiness, the study considered key qualitative criteria such as credibility and confirmability, which are fundamental in ensuring that findings are supported by data and free from researcher bias (Shenton, 2004; Denzin & Lincoln, 2011; Lincoln & Guba, 1985).

RESULTS AND DISCUSSION

Integration of Findings Using the Community Resilience Framework

After the conducted FGDs, the audio-taped data were transcribed and translated. In analyzing the data, the researchers employed the framework outlined by Miles and Huberman (1994), which entails three key phases: data reduction, data transcription, conclusion, and verification. Categorizing them by research question and identifying major themes alongside core ideas from participant responses. Finally, the third phase encompasses conclusion drawing and verification, where preliminary ideas and patterns about the findings are developed, as suggested by Miles and Huberman (1994). This critical step involves consolidating the information to emphasize meaningful conclusions and verifying the findings through careful analysis and interpretation. The primary research questions investigated pertain to the steps and processes of making the BDRRM Plans.

Categorization Of Data

In this study, this step involved presenting the data in tables as shown in Tables 2, 3, and 4. Categorizing them by research question and identifying major themes alongside core ideas from participant responses. Finally, the third phase encompasses conclusion drawing and verification, where preliminary ideas and patterns about the findings are developed, as suggested by Miles and Huberman (1994). This critical step involves consolidating the information to emphasize meaningful conclusions and verifying the findings through careful analysis and interpretation. The primary research questions investigated pertain to the steps and processes of making the BDRRM Plans.

Table 1 Demographic Profile of the Five Selected Barangays in the Municipality of Carmen, Davao del Norte

Barangay	Population	Number of Households	Total Land Area	Topography	Main Livelihood	Hazard Exposure
Asuncion	1843	474	351.50 ha.	Lowland	Agriculture	Flooding
Cebulano	3,102	875	440 ha.	Plains River	Agriculture	Flooding
Mangalcal	4225	1209	529.97 ha.	Plains River Creek	Agriculture	Flooding

Tubod	12221	1715	1074 ha.	Plains River	Agriculture	Flooding
Sto. Niño	8200	2015	561.67 ha.	River Plains Roads	Agriculture	Flooding

Note. This table demonstrates the demographic profile of the selected barangays in the municipality of Carmen, Davao del Norte, which now includes updated and verified data on population, number of households, and other relevant demographic details. Included in the following barangay are the Barangay Asuncion, Cebulano, Mangalcal, and Sto. Niño, and Tubod.

Table 2 Major Themes and Core Ideas on the Steps and Processes of Participatory Approaches in Making the BDRRM Plans

Major Themes	Core Ideas
Risk Based and DataDriven Planning	We conduct an assessment to determine the existing problem and to ensure it is given in the planning process.
	We prioritize the risks through calling meetings with each representative.
	In making the plan we base it on the risk that is a priority in the BDRRM.
	We make sure that the identified risks are addressed quickly, especially if it involves delivery of relief goods and healthcare services.
	We prioritized the risks identified through conducting debates and suggestions from each sector.
Sector Involvement, Community Consultation, Collaboration and	In planning, the community is already involved because we conduct regular barangay assemblies. We also conduct BOC training at least once a year.
	We ensure that the community input is reflected in the final plan.
	We assess the issues and risks they shared, based on what they have seen and heard before we include it in the plan.
	The step we took was to call the various vulnerable sectors in the Barangay, such as representatives from Senior Citizen, Women, Youth, Farmer and Purok Leaders.

Note. This table demonstrates the analysis of the actions, regulations, and strategies or practices done by the barangay officials to manage calamities in their areas, which, in the context of this study, generated two predominant themes through thematic analysis reflecting core ideas about how BDRRM was carefully planned with participatory approach.

Risk-based and data-driven planning

Risk-Based and Data-Driven Planning in the context of Barangay Disaster Risk Reduction and Management (BDRRM) ensures that local strategies are grounded in accurate risk assessments and relevant data. It involves identifying hazards, vulnerabilities, and exposure using scientific tools and community input to prioritize actions effectively. This approach helps barangays allocate resources more efficiently, targeting the most at-risk areas and populations. Ultimately, it strengthens resilience by enabling evidencebased decision-making before, during, and after disasters. In the conditions of the BDRRM planning process, adopting data-driven and risk-based approaches allows barangays to prioritize investments and interventions based on the likelihood and effects of possible hazards, similar to how utilities manage asset risks (Ganjidoost et al., 2022).

By using both risk data and local knowledge, communities can make better choices that improve readiness and lower risks, similar to how supply chains use data to handle problems (Gillespie, 2023). These methods help plan ahead by pointing out danger zones and making sure resources go where they're needed most. In the end, they make the BDRRM process stronger by helping decisions, using resources well, and making communities safer from disasters. As FGD 1 said,

“Mag conduct mi ug assessment, para makita na existing jud ni sya na problema ug ma hatagan ug priority sa pag about sa pagbuhat ug piano.”-FGD1

We conduct assessment to determine the existing problem and to ensure it is given priority in the planning process.

As mentioned in FGD3, before finalizing any plan, meetings were held to make sure that people from the affected areas could share their ideas and real situations. This way of planning is based on the actual needs and experiences of the community. According to Kausar et al. (2023), public involvement and working with different groups are key parts of good disaster risk reduction (DRR) and management. In BDRRM planning, this shows a more inclusive and focused approach, where involving the community helps find risks, set goals, and build useful plans. As FGD3 stated,

“Ginaprioritize namo ang risk pamaagi sa pag patawag ug meeting with each representative”. - FGD3

We prioritize the risks through calling meetings with each representative.

Furthermore, FGDS highlighted that in developing their BDRRM plans, they placed strong emphasis on thoroughly assessing the specific risks within their areas of responsibility. By looking at the risks and needs in each barangay, the research team made a plan that matched what the people really needed. They didn't only use data, but also listened to what the community members shared. This made the risk analysis clearer and more useful. In the same way, Wood et al. (2022) said it is helpful to mix expert advice, local concerns, and mapping tools to see which risks need quick action. This method helps make the BDRRM plan more useful because it includes both technical ideas and real stories from the people. As FGDS said,

“Sa pagbuhat sa plano naga base mi sa risk nga priority sa BDRRM plan”. -FGD5

In making the plan we base it on the risk that is a priority in making the BDRRM.

One participant from FGD7 emphasized how important it is to identify risks as early as possible so they can respond quickly before things get worse. This hands-on approach reflects what Raker et al. (2020) discussed in their study, where they outlined five priorities to help reduce health problems after disasters. These include preventing trauma, making healthcare easier to access, simplifying the process for getting help, strengthening community support systems, and ensuring long-term assistance. These ideas reinforce what we saw in the barangays that both early warning and consistent support really matter in making disaster response more effective. As FGD7 stated,

We make sure that the identified risks are addressed quickly, especially if it involves the delivery of relief goods and healthcare services. -FGD7

As an FGD9 participant pointed out, creating a strong BDRRM plan shouldn't just fall on one group it should involve different sectors of the community. They believed that getting input from various stakeholders makes the plan more practical and reflective of what people actually need. This idea also came up in a recent study by Elkady et al. (2024), which highlighted how important it is to build collaboration among local leaders and community members. Their findings suggest that when people are actively involved, not just consulted, the results are more effective. For the barangays involved in this study, this kind of teamwork was seen as essential to building a disaster plan that truly works on the ground. As FGD stated,

“We prioritized the risks identified pamaagi sa pagpahigayon ug debate ug suhistyon sa matag sector”. -FGD9

We prioritized the risks identified through conducting debates and suggestions from each sector.

Sector involvement, community consultation, and collaboration.

According to FGD2, barangay officials are the ones who encourage people to join in making the BDRRM plan. They don't just call for meetings, but also talk to residents through surveys, interviews, and small group gatherings. This helps them know what the people really go through and what they need. Shmueli et al. (2020) pointed out that when a community is involved early, the disaster plan becomes more useful. In this case, barangay leaders use what they learn from the people to make a plan that truly fits their situation.

“Sa planning palang daan involve na ang community kay naga conducts mi regular barangay assembly by semester. Ug naga conducts pud mi BDC training at least once a year”. -FGD2

In planning, the community is already involved through barangay assembly, And BDC training once a year.

In addition, as shared by FGD4, the planning of their BDRRM plan was deliberately made a product of community consensus, ensuring that the voices and perspectives of residents were central to the process. This approach reflects a shift from purely top-down decisions to one that listens more to the people on the ground. It aligns closely with the principles of the community-based disaster risk management (CBDRM) framework outlined by Dales et al. (2021). The CBDRM approach highlights the active role of vulnerable groups in all parts of disaster work—planning, preparing, responding, and recovering. Using this kind of strategy makes BDRRM planning more in touch with local needs and better at handling the real risks in the area. In the end, this way of involving people helps make the BDRRM plan more accepted, useful, and lasting.

As FGD4 stated, We ensure that the community input is reflected in the final plan. -FGD4

According to FGD6, the risks and concerns raised by the community were not added right away into the BDRRM plan. Instead, these inputs went through a checking process to make sure they were correct and reliable. This careful step supports the study by Haque and Fatema (2022), who said disaster programs should include local risk views through open and shared discussions. By confirming the risks pointed out by the people, the plan stays fact-based while still respecting local knowledge. This mix of community input and expert review makes the BDRRM plan more trusted and effective. As FGD6 stated,

“Among gina agi sa pag assess ang ilahang mga gi share na mga issues ug mga risk na ilang nakita ug nabatian bago maapil sa plano”. -FGD6

We assess the issues and risks they shared, based on what they have seen and heard before we include it in the plan.

Furthermore, FGD10 highlighted the importance of anchoring BDRRM planning in the lived experiences and specific needs of the community's most affected sectors. By focusing on these vulnerable groups, the plan becomes more inclusive and genuinely responsive to those facing the highest risks. This viewpoint aligns with the findings of Cardinal and Lagura (2023) emphasized a strong correlation between emergency and disaster events and the level of preparedness. This preparation encompasses areas such as vulnerability assessment, planning, institutional structures, information systems, available resources, warning mechanisms, response strategies, public education and training, and simulation exercises. As FGD10 said,

“Ang lakang na amoa gehimo kay ipatawag ang nagkadaluyang vulnerable sector sa Barangay sama sa mga Representante sa Senior Citizen, Womens, Youth, Farmer og mga Purok leaders”. -FGD10

The step we took was to call the various vulnerable sectors in the Barangay, such as representatives from Senior Citizen, Women, Youth, Farmer and Purok Leaders.

Table 3 Major Themes and Core Ideas on the Steps and Processes of Participatory Approaches in Contributing to the Development of the BDRRM Plans

Major Themes	Core Ideas
Experience-Driven Risk Awareness	Flooding in our barangay is one of the main reasons for continuous planning.
	In creating the BDRRM plan, flooding in our area is a big factor.
	One of the factors is the calamity that occurred in our barangay while crafting the BDRRM plan.
	Past experiences of calamity motivate us to develop the BDRRM plan.
Community and Stakeholders	We conducted a meeting with the community
	We ensure that the community input is reflected in the final plan.

Note. This table demonstrates the factors contributing to the development with participatory approaches of respective BDRRM Plans in which two themes were identified.

Experience-driven risk awareness

As stated by FGD2, one of the primary reasons for the continuous planning efforts in their barangay is the recurring experience of calamities such as flooding. This aligns with the findings of Rakshit and Paul (2021),

who emphasized that organizations and by extension, communities should implement robust Business Continuity and Disaster Recovery (BCDR) planning to enhance resilience and ensure operational stability in the face of disruptive events. As FGD2 stated,

“Ang baha sa among barangay ang isa sa rason nga naga-planning”. -FGD2

Flooding in our barangay is one of the main reasons for continuous planning.

According to FGD6, one of the main reasons behind their active involvement in BDRRM planning was the frequent flooding in their area. This shows how the community is aware of the problems they regularly face and is making efforts to deal with them through better planning. It also connects with what researchers have pointed out—that including flood prevention strategies in how we use land and prepare for disasters can make a big difference in keeping communities safer. Gaudiel (2023) further emphasizes the critical need for comprehensive DRRM activities, particularly in flood-prone communities, to enhance preparedness, minimize vulnerabilities, and strengthen overall resilience. These insights reinforce the value of community-based planning that is both hazard-informed and forward-looking. As FGD6 said,

“Sa pagbuhat ug BDRRM plan dako na factor ang pagbaha sa amoang lugar”. -FGD6

In creating the BDRRM plan, flooding in our area is a big factor.

FGD1 shared that past calamities have strongly influenced how their barangay shaped its BDRRM plan. They've learned from experience, especially with floods, and realized that being prepared is not just helpful but necessary. As Norizan et al. (2021) explained, flood risk planning shouldn't be treated as something extra—it should be part of every barangay's regular planning. If communities prepare ahead and include flood protection in their local strategies, they won't be caught off guard when disasters happen. It's a way of turning hard lessons into smarter, more community-focused planning. As FGD1 stated, *“Ang kalamidad nga nahitabo sa among mga barangay ang usa sa factor na amo gina konsidera sa pagbuhat sa BDRRM plan”*. -FGD1

One of the factors is the calamity that occurred in our barangay in crafting the BDRRM plan.

Many communities shape their disaster planning based on what they've already experienced. In one case, participants from FGD8 shared how past typhoons and flash floods pushed them to be more proactive in preparing for future risks. These kinds of experiences often influence not just planning, but also the type of training they prioritize. Sahadev et al. (2023) talked about how people who have experienced disasters themselves, especially those who also went through training, tend to take disaster planning more seriously. Their study shows that what people go through personally, and how they feel about it, often matters just as much as any written policy when it comes to making disaster plans that actually work. As FGD8 said, *“Ang mga niaging kasinatian sa kalamidad ang nagpakugi sa amo to develop BDRRM plans”*. -FGD8

Past experiences of calamity motivate us to develop the BDRRM plans.

Community and stakeholder

What really makes a BDRRM plan work is when the community is actually involved, together with people who have a real stake in it. Local residents aren't just passive recipients of plans—they actively contribute their insights and concerns. In fact, one insight from FGD1 mentioned how the entire planning process was rooted in what the people of the barangay actually experience and need. This community-driven approach reflects what Matunhay et al. (2019) emphasized in their study: that the strength of barangay-level disaster planning lies in continuous collaboration between local officials and their constituents. When people stay involved and actually take preparedness seriously, the plans they come up with tend to make more sense and really help when disasters happen. As FGD1 Stated,

“Nagapahigayon me ug meeting sa community unya ang nagather na mga concern ipasa namu na sa BDRRMC”. -FGD1

We conducted a meeting with the community, and their concerns were passed to the BDRRMC.

In the same way, FGD9 indicated that, in addition to coordinating within the community for their BDRRM planning, they also sought support from the local government unit in their municipality to develop a more comprehensive plan. This aligns with the findings of Kastono et al. (2022), who emphasized that collaborative efforts between government agencies and community resources are crucial for achieving sustainable development through disaster risk reduction strategies. As FGD9 stated,

“Kasagaran na amo a buhaton mag coordinate sa community og sa

Loka/ na pamahalaan sama sa MDRRMC pero, magsugod kini sa Barangay Development Council o BOC”. - FGD9

We usually coordinate with the community and the Local government like the MDRRMC but the process starts first in the Barangay Development Council or BOC.

Table 4 Major Themes and Core Ideas on the Challenges Encountered with Participatory Approaches in Planning the BDRRM

Major Themes	Core Ideas
Limited Budget and Resources	In BDRRM planning the budget is the most challenging part. The challenge is the lack of budget which limits us to align our activities.
	There were difficulties because of the budget allocation.
	The budget has a great impact in crating the plan specially because it is limited.
Lack of Community Engagement and Participation	Lack of community participation has affected the plan.
	The most challenging is the cooperation of the people in the community.
	Second is the non-cooperation of the community.

Note. This table demonstrates the challenges encountered with participatory approaches in planning the BDRRM in which two theme emerged.

Limited budget and resources

The first major theme that emerged was the limited budget and resources. As highlighted by FGD4, budget constraints remain one of the most significant challenges in planning for Barangay Disaster Risk Reduction and Management (BDRRM). This concern is echoed in the study by Hidayat, (2022), that noted ongoing issues in how local governments plan and use disaster-related funds, often resulting in gaps that limit the effectiveness of preparedness and response activities As FGD4 stated.

“Sa BDRRM plan ang budget ang challenging sa amo a”. -FGD4

In BDRRM planning the budget is the most challenging part.

Similarly, participants in the FGD6 emphasized that they encountered significant difficulties in planning their BDRRM activities due to budget limitations. This challenge aligns with the findings of Fadhilah and Yuliani (2024), whose study revealed that financial constraints pose a major barrier to disaster mitigation efforts. In the case of BukitTinggi City, insufficient funding has notably hampered the implementation of crucial earthquake preparedness measures. As FGD6 stated,

“Ang challenge na among na sinati kay ang kakulangan sa budget nga naga limita sa amo a na ma align ang mga activities”. -FGD6

The challenge is the lack of budget which limits us to align our activities.

Moreover, FGD8 added that they have long been burdened by the lack of budget allocation for BDRRM in their barangay. This financial constraint significantly hampers their ability to fulfill their mandate, especially during

times of calamity. This concern is consistent with the findings of RodriguezLirios and Donato (2023), who emphasized that limited funding for DRRM projects and programs combined with inadequate support for training and equipment often weakens the ability of local DRRM committees to function effectively during emergencies. As FGD8 stated,

There were difficulties because of the budget allocation is not sufficient for the project. -FGD8

Similarly, the FGD9 identified budget limitations as their primary challenge in implementing BDRRM initiatives. Madjid (2018) highlighted that many localities face funding shortages, which pose serious challenges to maintaining adequate levels of disaster preparedness and emergency response. Without adequate funding, barangays struggle to implement proactive strategies and are often left to respond reactively during emergencies. As FGD9 stated,

“Ang budget ang adunay dakong impact sa pag buhat sa plano labi na kay limitado kini”. -FGD9

The budget has a great impact in crafting the plans specially because it is limited.

Lack of community engagement and participation

Another thing that came up in our conversations was how important it is to really involve the community. One of the participants in FGD6 pointed out that their barangay's disaster response doesn't just depend on official plans or leaders, it also relies on whether the people themselves are willing to help out and get involved early on. This really shows how much stronger the response can be when the community is active. It also reflects what Mabor (2020) mentioned, that disaster efforts don't work as well when it's all top-down and people aren't included. Based on what we heard, having the community take part from the start makes a big difference in how prepared they are and how fast they can recover.

“Dakung epekto sa plano ang kakulangon sa participation sa komunidad”. -FGD6

Lack of community participation has big impact that affects the plans.

Similarly, FGD8 stated that the cooperation of the community hinders them from planning and implementing the BDDRM plan. As such in the study of Danar et al. (2021), the absence of active community cooperation can significantly impede disaster response efforts. Contributing factors include poor collaborative governance, limited community involvement in preparedness activities, and resistance or lack of responsiveness from residents. As FGD8 stated,

The most challenging is the cooperation of the people in the community. -FGD8

Furthermore, community cooperation is a crucial element in ensuring the effectiveness of BDRRM efforts. However, FGD10 shared that they often face challenges in encouraging active participation and cooperation from community members. This is supported by the findings of Bakti et al. (2023), which revealed that fostering participatory communication and promoting democratic dialogue among stakeholders can significantly enhance collaboration and lead to more effective disaster response initiatives.

As FGD10 stated,

“Ikaduha nga mag lisod mi kay, sa dili pagcooperate sa komunidad”. - FGD10

Second is the non-cooperation of the community.

Implications and Concluding Remarks

Implications for practice

The findings offer practical policy directions for strengthening participatory BDRRM planning and barangay-level disaster resilience. While the selected barangays demonstrate risk-based planning and sector engagement, challenges related to inconsistent participation, limited funding, and weak coordination continue to constrain

implementation and long-term effectiveness. These findings support the need for governance conditions and enabling systems that sustain resilience beyond plan formulation (Ellis et al., 2022).

1. Strengthening Community Participation and Sustained Engagement

Local participation should extend beyond attendance in assemblies toward meaningful involvement in prioritization, validation, implementation, and monitoring of BDRRM plans. Collaborative planning principles show that sustained stakeholder engagement improves preparedness and strengthens outcomes (Shmueli et al., 2020). Local policies may institutionalize:

- a. regular sector consultations and participatory meetings (Matunhay et al., 2019);
- b. participatory communication strategies that support democratic dialogue and cooperation (Bakti et al., 2023);
- c. inclusion mechanisms for vulnerable groups to ensure plans are needs-based and context-sensitive (Dales et al., 2021).

2. Improving Budget Allocation and Resource Mobilization

Budget constraints were consistently identified as a key barrier to translating plans into action. This aligns with evidence that weak funding systems limit preparedness and mitigation performance at the local level (Hidayat, 2022). Strategies may include:

- a. strengthening transparency and accountability in BDRRM resource use to sustain trust and support;
- b. prioritizing essential preparedness investments (equipment, early warning tools, logistics, and training);
- c. seeking partnerships and alternative support mechanisms, since limited DRRM funding often weakens local committee functionality and preparedness capacity (Rodriguez-Lirios & Donato, 2023).

3. Strengthening Inter-Agency Coordination and Vertical Policy Alignment

Findings also suggest a need for clearer coordination between barangays and municipal DRRM systems. Research indicates that disaster governance becomes more effective when local and higher-level agencies are aligned through consistent protocols and collaborative structures (Kastono et al., 2022). Strengthening coordination can reduce duplication, address priority risks efficiently, and support more coherent implementation across levels of government.

Implications for future research on BDRRM planning

The findings from this study highlight several areas that future research can explore to deepen understanding and improve the practice of BDRRM planning at the community level: first, future studies can investigate innovative and community-driven approaches to BDRRM planning, particularly those that successfully integrate technology, indigenous knowledge, and local resources. Understanding what works at the grassroots level can inform scalable and culturally appropriate strategies. Second, assessing the impact of capacity-building initiatives by the BDRRM plan. While training and education are recognized as essential components of BDRRM, more empirical research is needed to measure their long-term impact on preparedness and response effectiveness. Future research can examine which types of training yield the most meaningful outcomes and how often they should be conducted to maintain readiness. Moreover, future researchers could conduct further investigation into the disconnect between national DRRM frameworks and barangay-level implementation can help identify specific policy gaps and institutional barriers. Studies could focus on how governance structures, accountability mechanisms, and decentralization affect the success of BDRRM initiatives.

Furthermore, an inquiry is also needed to explore which methods of community engagement are most effective in promoting participation, ownership, and cooperation in DRRM planning. Comparative studies across regions or barangays with varying levels of community involvement could offer useful insights. Additionally, research

should be made to investigate the role of social protection in DRRM. As interest grows in integrating financial assistance, insurance schemes, and livelihood support into BDRRM plans, future research should examine the feasibility, sustainability, and impact of these measures. Understanding how financial support systems can be built into disaster planning will help enhance both recovery and resilience.

Finally, future research could benefit from longitudinal studies that track the progress of BDRRM plans over time. These studies can provide insights into what factors contribute to sustained implementation and what barriers emerge during different phases of the disaster management cycle. Future researchers could explore the BDRRM plan implemented by the barangay for a long period of time for a much more comprehensive data analysis.

Future researchers should also move beyond identifying challenges to offering practical, evidencebased solutions. By focusing on innovation, impact assessment, and inclusive strategies, researchers can contribute significantly to the development of more resilient and disaster-ready communities.

Concluding remarks

In conclusion, Barangay Disaster Risk Reduction and Management (BDRRM) planning plays an important role in promoting community safety, resilience, and sustainable development. As disclosed in this research, BDRRM planning should be based on information, evidence, and experience from the affected community.

Moreover, findings revealed also concluded that an effective BDRRM planning is not only based on actual details but also in community participation, resource management, inter-agency coordination, and crisis response as revealed in this research. As such, in conformity with the study of Islam et al. (2020), which stated that there were five factors that affect BDRRM planning: disaster management system, leadership decentralization, community capacity building, community resources, and disaster experience and vulnerability. These findings promote disorderly participation, collaboration, and integration between recovery programs, which are necessary to improve existing policies or adopt a new policy for the advancement of the development of BDRRM plans.

This finding is supported by the idea of Lirios and Donato (2022) that BDRRMC used proactive measures like installing CCTV, Public Address System, and installing Evacuation Centers to address impending and or actual calamities. These findings could contribute in uplifting the BDRRM plan in the most affected barangay in the country. The researchers have the opportunity and responsibility to influence change at the local level by promoting participatory, data-driven, and equitable disaster risk reduction policies. Through education, engagement, and leadership, they can contribute meaningfully to building safer, more resilient communities in the context of this inquiry.

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