



Advancing Disaster Resilience in the Philippines: Blueprint for Education Extension Initiative

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ABSTRACT

Resilience constitutes an aspect of sustainable urban-community development, delineated in UNESCO's Sustainable Development Goals and interconnected to nature of education, development, and disaster preparedness in national, regional, and global perspective on challenges faced by developing countries. This article aims to gather data to enhance disaster resilience preparedness within a community using a quantitative descriptive research design. This study banked on social systems theory, collecting data from purposively selected 33 barangay and 26 local government officials. Results showed that officials believed the city was equipped to handle disasters, but their ratings indicated insufficient readiness. Notable disparity existed between the two groups' perceived readiness levels. The study concluded that Guihulngan City in Negros Oriental, Philippines faces challenges in embedding resilience in disaster risk reduction, highlighting SDG 11's call for sustainable cities. This study advocates for integrated, community-driven approaches, emphasizing policymaker action and educational programs to enhance disaster preparedness through awareness and capacity building.

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Introduction

The Sustainable Development Goals (SDGs) developed by the United Nations are an essential step towards global sustainability and social equity. Furthermore, these goals assert that individuals can contribute to sustainable development, irrespective of their economic standing

or physical location (Thomas et al., 2021). Specifically, SDG 11 is targeted at making cities and human settlements inclusive, safe, resilient, and sustainable, but it has also acknowledged challenges and opportunities linked with urbanization worldwide. Vibrant urban regions generate demand for addressing urban challenges while simultaneously promoting innovation and resilience, especially in the context of disaster and climate change risk mitigation (Prakash et al., 2020).

The relation between urban sustainability and disaster resilience is of utmost importance to countries prone to disasters, including the Philippines, because balancing development with preparedness is critical. Sustainable practices in the urban setting address environmental problems and promote social justice while enhancing community resiliency to respond to disastrous situations (Gamboa et al., 2019). Disaster resilience saves lives and contributes to an essential part of sustainable development. Building disaster resilience is within the scope of teacher education, where trainee teachers will be endowed with tools, strategies, and know-how for integration into curricula (Malahay & Estrope, 2018). Teacher education increases the educators' ability to teach concepts on disaster risk reduction; thus, future generations will be equipped and contribute towards community resilience that is at the center of the new paradigm for disaster management (Gamboa et al., 2019). This trend aligns with the international approaches that emphasize education's role in fostering grassroots-level resilience, thus reinforcing the imperative of having educational frameworks that equip learners with skills to find their way around the challenges posed by disasters.

The Philippines has also promoted DRRM by assigning responsibilities to LGUs to recognize that LGUs are at the forefront of addressing community-specific issues and vulnerabilities. Including DRRM in teacher preparation programs enables educators to communicate valuable knowledge with their students, families, and communities (Prakash et al., 2020). This decentralized approach considers regional understanding paramount importance, coupled with an intervention adapted to each region, to enhance resilience through community members. With ever-increasing strength in international education trends, it is an argument taken for granted, which will finally prepare coming generations to face global challenges (Blanco, 2015).

Natural calamities in the forms of earthquakes, typhoons, and volcanic eruptions have been striking the Philippines one after the other, thereby bringing into focus the dire need for effective disaster risk mitigation and preparedness. The 2012 Negros Oriental Earthquake, the 2013 Bohol Earthquake, and Typhoon Yolanda, among others, raise the need for preparedness and resiliency to be of importance, most especially in highly susceptible places, such as Negros Oriental (Dagle, 2021; Eadie, 2019). These frequent natural calamities in the Philippines show the pressing need to place efficient DRRM systems in a country, especially in vulnerable regions. SDG 11 of the United Nations promotes resilient, people-centered, and sustainable cities. Disaster preparedness is a component of urban sustainability. The decentralization of DRRM in the Philippines develops the capacity of local government units to face region-specific risks and vulnerabilities. It discusses the importance of disaster preparedness in

localities, equipping grassroots with the knowledge and skill sets needed to reduce the impacts of disasters through education, which aligns with global trends in sustainable development and disaster resilience.

On Disaster Preparedness

Disaster preparedness and response are indeed inextricably linked and reliant on multiagency collaboration. Research has established that when there is a combination of efforts between various agencies, the result is a systematic mechanism of response, which enhances protection and care for survivors (Morgan et al., 2015). The legal framework and policies also play a role during disaster response; good policies ensure that resources and relief materials are allotted smoothly to meet survivors' basic needs efficiently. Besides, psychological support significantly helps the survivors heal; integrating mental health services into response plans lessens the emotional burden of disasters and builds resilience among survivors.

According to Elangovan and Kasi (2015), one of the most critical aspects of disaster management encompasses strategic planning and education. Activities involved may include comprehensive plans for disaster management, personnel training, and flexible strategies for risk reduction (Malahay & Estrope, 2018). This calls for disaster mapping, prediction, and planning by local governments in collaboration with involved institutions to enhance the predictability of the disasters for better preparedness. Information dissemination and timely communication also play a key role in mitigating disasters since they contribute to readiness and reduce disaster impacts (Battarra et al., 2018). It will be possible for these communities to be resilient and able to deal with future disasters by addressing these elements.

On Recovery and Resilience

Reconstruction after a disaster encompasses rebuilding the physical structure and building communities that can be resilient enough in the face of future disasters. As Thomas et al. (2021) suggested, the approach includes infrastructure development, livelihood restoration, community organization, strengthening and enhancement of disaster risk reduction measures. The National Disaster Risk Reduction and Management Plan of 2011 articulates an integrated and orderly recovery process through multidimensional efforts to improve community resilience. In doing so, the local governments and institutions develop strategies that rebuild their communities and further strengthen their resilience to future disasters (Chatterjee et al., 2015).

Decision-making criteria, aligned goals, and equitably distributed resources should be present in any disaster recovery plan. Twigg and Mosel (2017) argue that combining all these elements will guarantee recovery, while transparency will create confidence and improve stakeholder cooperation. Special consideration must also be accorded to women and children. Cretney (2018) based their research on the need to address these groups' specific

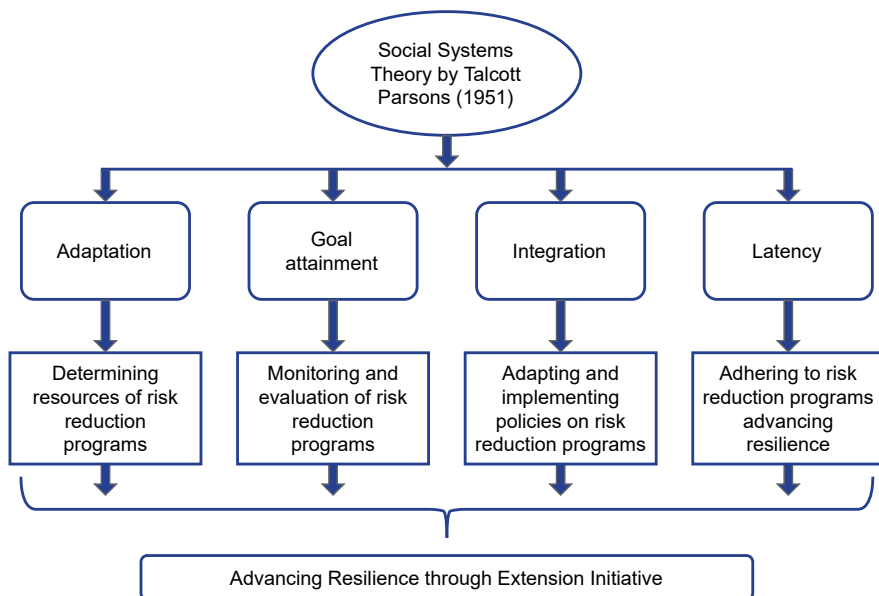
requirements if there was an all-inclusive recovery. Recovery strategies focused on the welfare of all segments of society can thus create healthier and more resilient communities that are better prepared for future adversities.

The current literature focuses on significant principles for disaster management at a national or regional level. The disparity points more to the rationale for more excellent focused research into how the smallest administrative unit, or barangays, can effectively prepare for and respond to calamities. This research tackles problems concerning community disaster risk reduction and risk assessment contextualized in the surroundings, capacity building, education tailored to needs, resilience indicators at the barangay and city levels, and inclusive practices across all sectors and persons in the community to develop a comprehensive blueprint for education extension initiative. Such a research gap is filled by more context-based and efficient approaches toward disaster management for the respective Filipino communities.

Framework of the Study

Figure 1

Guiding Framework for the Advancement of Disaster Resilience



Talcott Parsons’ Social Systems Theory (1951) is well-suited for analyzing and developing a disaster resilience framework, particularly within community systems like Local Government Units (LGUs) and barangays, because it focuses on the interdependent functions that help sustain and adapt social systems. This theory’s four essential functions—*adaptation*,

goal attainment, integration, and latency—align with the processes necessary for effective disaster risk reduction management (DRRM) and resilience building.

Adaptation, in theory, pertains to how a community identifies and allocates resources to manage disaster risks, which is critical in disaster preparedness and response. The concept of goal attainment requires that the objectives be well set, such as reduction in vulnerabilities and response capacity, with regular monitoring and evaluation of whether the set objectives have been achieved. Integration encompasses the collaboration aspect that is required in policy adoption and strategy implementation by disaster management strategies in disaster management strategies in LGUs and barangays in integrating efforts. Latency ensures that DRRM programs are sustainable as they gradually become part of the system, hence long-term resilience. Thus, Parsons' framework supports a comprehensive, adaptive, goal-oriented, and sustainable disaster resilience strategy for communities experiencing frequent and evolving disaster risks (Salindo & Salindo, 2023).

The theory has found existence in various fields. Tittenbrun (2014) showed its validity in economic sociology with a projection of how social factors influence financial behavior. Ahmad et al. (2021) applied it to the COVID-19 healthcare adaptation model, revealing how healthcare systems adapted during the COVID-19 pandemic. The theory has been used by Salindo (2021) to study the development of the institutional sphere according to the influence of socioeconomic and cultural factors. In 2023, Salindo and Salindo were able to use it to assess performance in higher learning institutions. These offer a practical illustration applicable to the effectiveness of understanding various events and contexts.

Disaster resilience management needs cooperation from the national, regional, provincial, and local levels, with the mobilization of resources such as finances, human assets, and governance to attain these ends about the reduction of risk, preparation, and recovery. This emphasis mandates measuring and quantifying community-wide efforts at reducing risk using appropriate tools. The NDRRMP (National Risk Reduction Management Plan) and the UNESCO Agenda 2030 work together through cooperation and coordination towards sustainable development, making disaster resilience not only about crisis responses but also about preventing future vulnerabilities as such occurrences develop. Disaster resilience initiatives operationalize these adaptation, goal attainment, integration, and latency (AGIL) functions by promoting policies, strategies, and frameworks incorporating these core elements. Adaptation ensures that communities mobilize resources into risk reduction; goal attainment ensures that specific disaster resilience objectives are established and measured; integration emphasizes coordination between local government units, community leaders, and agencies in implementing policies; and latency is a process wherein disaster resilience practices becomes part of the long-term practices of the people. Education extension initiatives fill the process with awareness and community capacity building, primarily through teacher education and public education programs. Initiatives go beyond just education; they reach out to local communities to learn about disaster risk reduction and ensure that knowledge is disseminated across all sectors. Through these education-driven approaches, the AGIL functions are well

applied, thus an action of a resilient community that is prepared and ready to respond to disasters, mitigate the risks, and enhance sustainable development in the long term.

This research, therefore, is timely in providing valuable insights toward building community resilience against disasters. It measures the perceptions of barangay and local government officials about the standards established for risk reduction readiness. This helps to inform both the government and residents of preparedness expectations and addresses urban resilience in disaster-prone areas, which SDGs address under Agenda 2030. The research answered the following: To what extent is Guihulngan City's (Negros Oriental, Philippines) disaster risk reduction management prepared as assessed by the barangay and local government unit officials? Specifically, is there a significant difference in the perception of barangay officials and local government unit officials on Guihulngan City's preparedness level regarding disaster risk reduction management? What blueprint is created to improve disaster preparedness and resilience in communities? It transcends the risk reduction studies to explore grass-roots community engagement in formulating a framework for disaster resilience improvement.

Research Methodology

Research Design

This study aims to determine the capacity and capability of the local government unit in terms of disaster resilience among the City Government of Guihulngan employees. This is quantitative descriptive research, considering the numerical data on the elements of a disaster risk reduction investigation. Principally, this study aims to find out the existing gaps and level of perception of hazards for improved readiness for disasters in Guihulngan, Negros Oriental, Philippines. It will also form the basis for formulating an education extension initiative on disaster risk management that targets reduction. The study also targeted increasing preparedness against disasters to minimize their impact on communities.

Research Locale

Guihulngan City has 33 barangays in Negros Oriental, Philippines is a disaster-prone area. Barangays are at the heart of local disaster risk management under the national policies that set out many regulations and guidelines, such as the Philippine DRRM Act. Official reports released in 2015 stated that seven of the ten poorest cities and municipalities in the country, which scored a poverty incidence of 50 and above, were concentrated in northern Negros Oriental. This validates the relevance of the research location, which is Guihulngan City. Comprised in these poor areas are the municipalities of Guihulngan City, Bindoy, Jimalalud, La Libertad, Tayasan, and Vallehermoso (Salindo & Salindo, 2023). This is another reason why it is essential to consider the high risks these regions face to natural disasters.

Figure 2*Map of Guihulngan City*

Source: PhilAtlas.com

Participants

This study used purposive sampling, wherein participants were chosen for specific characteristics. The participants were grouped into two categories: barangay captains, the local leaders, numbering 33, and head of office or local government unit officials, who hold important administrative positions, numbering 26. There were 59 participants in all.

Instrumentation

The questionnaire used in this study was adopted from the National Disaster Risk Reduction Management Plan and is primarily divided into two parts: the first part treats the participant's description and the Guihulngan City risk reduction management preparation. In contrast, the second part deals with how prepared the city is to handle disasters. Following a series of content validation and expert evaluations by five specialists, the obtained validity score for the questionnaire was 4.12. Further validated by the pilot test with 25 participants, the questionnaire had reliability scores of .75 for barangay captains and .79 for heads of offices, as measured by Cronbach's alpha.

Data Collection

The study structure was organized into three critical phases: preliminaries and preparation, the survey process, and post-processing after the survey. Communications with concerned

authorities were first instituted, followed by personal interviews within the LGU to provide context and an outline for research. In the actual survey process, questionnaires were issued to chosen participants, and the researchers had to clarify any doubts while ensuring that the manner of collection provided the participant's privacy. The blueprint of this education extension initiative was formed based on collected and analyzed survey data on educational needs. Data was processed and statistically analyzed, guiding the refinement of strategies to be compiled into a final report to give clear direction in implementing the initiative.

Data Analysis

Descriptive statistics were employed in data analysis, which involved gathering and tabulating into percentages, measuring frequencies, and comparing results to check on patterns and trends. The Mann-Whitney U test was also used to detect significant differences in attitude on specific questions between the local government unit and barangay officials so that a fuller picture of the differential perception of the two groups may be had.

Ethical Considerations

The study was conducted when there was no Institutional Research Ethics Committee; therefore, the approach had to be rigorous and transparent. Researchers put effort into deliberate ethical compliance. This comprised a face-to-face survey supplemented by an in-depth informed document illustrating the purpose of the study, the procedure involved and participants' rights. Aggregation provided additional assurance of the anonymity of responses and emphasized volunteer participation. Participants were granted an absolute right to withdraw from the study at any time; this reinforced their freedom and ensured ethical integrity despite a lack of institutional oversight.

Results and Discussion

This section presents the study's findings and draws the implications from them in light of disaster resilience and education extension work in Guihulngan City.

Table 1 shows the status of the components of DRRM in Guihulngan City. Inequities are noted in Guihulngan concerning compliance with the legal provisions of its DRRM components, vulnerability assessment, integration with city development, institutional organization, public-private partnership, community awareness, disaster response, and recovery efforts. Critical issues identified also pertain to laws not being complied with, hazard mapping and training being either low or unsatisfactory, unclear decision-making, the government-to-private sector collaboration being minimal, knowledge of the community being minimal, and recovery and rehabilitation support being low.

Table 1

Profile of the Barangay and Local Government Officials' and Perceived Level of Preparedness on Disaster Resilience of Guihulngan City

Participants	Barangay Officials		Local Government Officials	
Frequency	33		26	
Age Range	45-65 years		35-55 years	
Gender Distribution	85% Male, 15% Female		60% Male, 40% Female	
Years of Service	10-20 years		5-15 years	
Statements	\overline{WX}	Verbal Description	\overline{WX}	Verbal Description
A. Legal Framework				
The city council has passed a city ordinance in response to:				
The Disaster Risk Reduction Management Act of 2010	1.3	Poor	1.4	Poor
other existing law	.9	Poor	.7	Poor
B. Vulnerability/Risk Assessment				
Vulnerable areas have been identified as natural hazards.	1.5	Poor	1.5	Poor
Hazard maps are available, indicating areas vulnerable to natural hazards.	1.3	Poor	1.6	Poor
Concerned sectors are informed whether:				
city government offices	1.4	Poor	1.7	Good
barangay	1.8	Good	1.5	Poor
private business	1.0	Poor	1.5	Poor
community	1.6	Poor	1.6	Poor
C. DRRM Plans				
Plans for Disaster Risk Reduction Management are in place:				
Emergency response plans and SOPs are in place	1.5	Poor	1.4	Poor
Plans are updated and tested in drills and exercises	1.6	Poor	1.5	Poor
DRRM plans are linked with city development plans	1.4	Poor	1.5	Poor
Response and recovery measures are included	1.3	Poor	1.5	Poor
Training and capacity building are covered	1.2	Poor	1.5	Poor
D. Institutional/Organization/Structures				
Decision-making and incident command are clear	1.3	Poor	1.5	Poor
Clear roles and responsibilities of local units/offices involved are identified	1.3	Poor	1.6	Poor
Inter-institutional mechanisms, e.g., Committees/taskforce are laid out	1.2	Poor	1.4	Poor
All relevant sectors are included:				
National agencies	1.0	Poor	1.5	Poor
City offices	1.3	Poor	1.5	Poor
private sector/business	.9	Poor	1.4	Poor
NGOs and community groups	1.3	Poor	1.4	Poor
relevant sectors are familiar with respective roles	.8	Poor	1.4	Poor

E. Public-Private Sector Partnerships				
The city government has established a partnership with the private sector involving natural hazards	1.2	Poor	1.4	Poor
F. Community Awareness				
DRRM communication is disseminated to all barangays and the community sector	1.5	Poor	1.5	Poor
Warning systems are in place	1.0	Poor	1.4	Poor
G. Disaster Response				
SOPs are in place for :				
Relief	1.5	Poor	1.5	Poor
rescue	1.0	Poor	1.5	Poor
H. Recovery/Rehabilitation				
DRRMO has plans and programs for:				
structural repair	1.2	Poor	1.3	Poor
assistance to restore business losses	1.0	Poor	1.2	Poor
assistance for medical/psychological rehabilitation	1.5	Poor	1.4	Poor
TOTAL	1.26	Poor	1.45	Poor

Legend: Poor (1-1.66); Good (1.67-2.33); Excellent (2.34-3)

The local and barangay officials recognize that Guihulngan has a below-average class in the following areas of DRRM: *legislation, risk assessment, disaster planning, institutional structures, and community awareness*. This classifies the city as having a low preparedness and response capability level. The inconsistency in the level of perception between the officials and the community indicates problems in coordination and communication.

Capacity-building programs must be implemented by disseminating information, training, and workshops to build coordination between and among governance levels. Continuous monitoring and evaluation will ensure that steps are continued to bring about further improvement. The teacher-researchers help implement these initiatives for a more disaster-resilient Guihulngan.

Guihulngan disaster risk assessment study revealed gaps in legislation, vulnerability study, plan for disaster, institutional framework, public-private partnership, and community awareness, which need immediate interventions in local legislation, comprehensive risk assessments, and improvement in institutional coordination. Awareness programs, training the officials, and workshops at the community level can help in better communication and participation, as Chatterjee et al. (2015) suggest. In contrast, when improved, public-private partnerships can manage resources effectively in disaster resilience (Chatterjee et al., 2015; Izumi & Shaw, 2015). Improvements in all the aspects mentioned above are of great essence in disaster preparedness, response, recovery, and resilience at Guihulngan City, as Yeleliere et al. (2022) mentioned in their works.

Table 2

Comparison between Barangay and Local Government Officials' Perceived Level of Preparedness on Disaster Resilience of Guihulngan City

	M	Mann-Whitney U	Z - score	p-value is
Barangay Officials	1.26	221	-3.09471	.002*
Local Government Officials	1.45			

**significant @p<.005*

From Table 2 , the Mann-Whitney test detected a significant difference with $p < .05$ as the preset significance level. It indicates that this observed difference in perception between the two groups is not a chance or random occurrence and, hence, statistically significant. These primary stakeholders have different perspectives on the city’s disaster risk reduction management readiness .

The perception of preparedness on disaster risk management between the city and barangay officials in Guihulngan stipulates the need for a single approach. Both groups agree that what is happening is unacceptable despite efforts being carried out. Such calls for an all-inclusive disaster preparedness framework emphasising enhancing recovery and rehabilitation. This would call for an effective extension program that addresses the need for coordination among the academe, the locals, and barangay officials through systematic disaster risk and preparedness training . Workshops and forums could align stakeholders and develop a proper flow of communication with an integrated approach toward community-based disaster response to increase resiliency.

The teacher-researcher emphasizes the need for a community-based approach, leading to more personalized and proactive involvement in disaster response. This all-encompassing approach can help communities build resilience by giving local leaders the necessary tools and information to manage complicated crisis scenarios. This would boost the readiness and overall adaptability of the community when a crisis is upon them.

This puts forward the knowledge and coordination gaps between the local government and barangay officials of Guihulngan in terms of disaster risk reduction management. The perceptions vary due to differences in experiences, access to information, and policy interpretations. Chatterjee et al. (2015) propose an extension program to integrate stakeholders and bring uniformity to activities related to disaster risk reduction. Enhanced awareness and training workshops in disaster preparedness for local government officials, barangay leaders, community members, the private sector, and NGOs will close the gaps in the program.

Das et al. (2018) say these would increase awareness and develop response skills. Moreover, as Jain (2015) suggested, forums to convene for collaboration would help in effective

communication and decision-making. Such an approach would go a long way in fusing the approach to disaster planning and response in Guihulngan, ensuring the strengthening of its disaster resilience efforts.

Figure 3

Blueprint for Education Extension Initiative

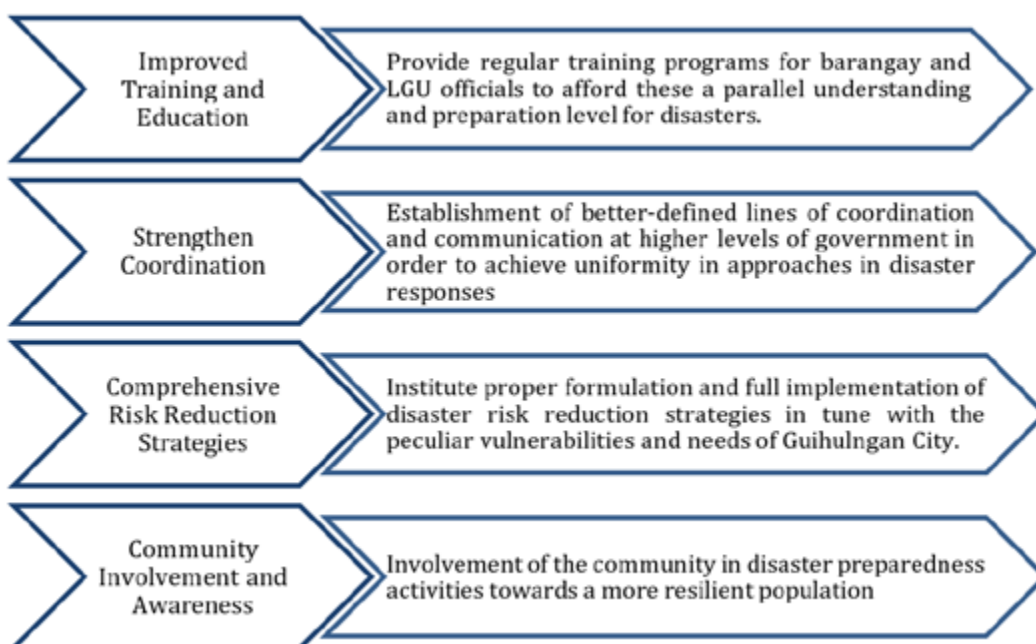


Figure 3 shows the comprehensive findings of the study, which serves as an overview of the primary key areas for improvement. This encompasses enhanced training and education, arguing the need for regular training classes to maintain understanding and uniform levels of preparedness at barangay and local government levels. It also shows proper communication and coordination at different government levels, strengthening coordination and ensuring cohesive disaster response strategies. It describes the formulation of comprehensive risk reduction strategies to address the peculiar vulnerabilities of Guihulngan City, Philippines. It emphasizes community involvement and awareness toward creating a more resilient population.

Through the study design and material developed during the review, the trend of the need for more structured and regular training programs is evident. Non-uniform preparedness by the officials suggests that the present training is either below par or not applied uniformly. This assessment furthers that there is a breakdown in communication and coordination at the different levels of government, leading to less efficiency in disaster responses. It also points out that current disaster risk reduction strategies may not be able to capture the peculiar

vulnerabilities of Guihulngan City and, hence, have to be more appropriately tailored. Finally, the deficient levels of community involvement recorded in this study indicate a dire need for programs that can develop increased community participation in disaster preparedness.

Based on the findings, the researchers opine that it is possible to reduce the observed gap in the level of preparedness through continuously improved training programs and education explicitly addressing the unique needs of barangay and LGU personnel alike. Therefore, transformative education is critical in allowing individuals to take up any level in the community where they are empowered to understand and participate actively in preparing for a disaster. Through extension initiatives directed at practices integrating disaster resilience into education, transformative education prepares future leaders and community members for effective response and recovery. This brings disaster preparedness training into local communities, ensuring that those most at risk can gain the knowledge and strategies while creating a culture of resilience through hands-on learning and community involvement—better communication lines between different levels of government. The major hindrance to effective disaster management remains inadequate coordination at present. The disaster risk reduction strategies should be suited to the particular vulnerabilities. Lastly, there is a need for community involvement in more disaster preparedness activities.

All these diverse insights into continuous training in disaster preparedness suggested by Elangovan and Kasi (2015) find reasons in literature, within the context of multi-level governance, efficient communication, and coordination by Izumi and Shaw (2015), in risk reduction, strategies that take local vulnerabilities into account by Battarra et al. (2018), while community involvement itself stands as the linchpin to disaster resilience by Cretney (2018).

These findings, supported by the literature, show that significant improvements in preparedness and response can be achieved by including the identified gaps. In this regard, the improved training and education of the officials, coupled with learned lessons (Das, 2018), is likely to produce greater consistency in the preparedness level on the part of the officials. Coordination, Izumi and Shaw (2015) observe, introduces uniformity and effectiveness in disaster responses. A development guided by Battarra et al. (2018) would make holistic risk reduction strategies even more fitting to the peculiar needs of Guihulngan City in its disaster management approaches. Lastly, community involvement and awareness, as supported by Cretney (2018) and Javier et al. (2020), are to raise the resilience level of the population to a great degree for better outcomes from disasters.

Conclusion

This study aimed to assess the perceptions of barangay and local government officials regarding their preparedness against disaster risks using set indicators of resilience and creating a blueprint for education extension initiatives. These results are significant

because they help address critical gaps in the literature on disaster preparedness at the local government level by showing how well or poorly current practice addresses or does not address the needs at this level and where future improvements are needed. These perceptions are important to understand, providing insights to develop more focused and effective disaster risk reduction strategies aligned with global goals, as provided by UNESCO's Agenda 2030, specifically SDG 11.

The first significant finding of the study is that, among the officials in Guihulngan City, the disaster risk reduction was rated "poor." This finding has severe theoretical implications, especially from the perspective of Talcott Parsons' Social System Theory, which states that the low level of preparedness showed an apparent breakdown in social systems to facilitate disaster management adequately. Such dysfunction and lapse in perception at the level of communication between local and barangay officials indicate that systemic problems inhibit the city's potential and capabilities to develop resiliency. These findings suggest how social structures should be further strengthened and means of communication improved to better prepare for disasters.

This is followed by the study's second finding, emphasizing the two most important aspects: community participation and communication gaps in disaster preparedness perception across different levels of local and barangay officials. In light of these results, one thing is clear: the targets of SDG 11, catering to resilient communities, can only be achieved with enhanced community involvement in congruent perceptions by officials. This corresponds theoretically with the notion that resilience is not a governmental product or end but rather something at which the whole community must work programmatically and pragmatically. The study confirms that disaster preparedness is a matter of collaboration; hence, it should encompass various stakeholders to ensure that preparedness is delivered more inclusively and effectively.

This leads to the concluding remark of the study that Guihulngan City, Philippines is challenged in disaster risk reduction efforts, especially in embedding resilience per the call of SDG 11. An integrated approach to disaster preparedness that aligns local and barangay officials' initiatives with people's participation is still necessary. It contributes to the richness of theories by emphasizing social systems and collective efforts in building resilience. This study sends a clear message of the urgent requirement of policymakers to adopt a more comprehensive approach toward formulating better disaster management practices and policies at the grassroots level. However, apart from the governance perspective, the findings also carry immense implications for educational policies, standards, and practices. Academic programs and extension programs have emerged as crucial in creating awareness and developing the much-needed capacities toward disaster preparedness in all sections of society. When incorporated into educational frameworks, these realities enable the community to be better prepared and more responsive in the wake of disasters for resilient engagement by informed and proactive participation.

One of the limitations of this study is its focus on perceptions among barangay and local government officials, hence limiting the generalizability of the results. The fact that community members, experts, and non-government organizations were out of the scope of the research offers only a partial perspective of disaster preparedness in the city. This study recommended that future research on disaster preparedness study a wide range of stakeholders. Studying different demographic groups in the community might have reflected more on the inclusiveness and effectiveness of existing disaster risk reduction strategies.

Future research should build on this study by expanding the participants to include more diversified groups, such as community members, experts, and non-government organizations, to cover the gaps identified. The outcome can be more integrated and inclusive disaster risk reduction strategies, which will be effective.



Statements and Declarations

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Declaration of AI in scientific writing

During the preparation of this work, the author(s) utilized tools such as ChatGPT and QuillBot to help organize their thoughts and improve grammar. The author(s) thoroughly reviewed and edited the content to ensure it meets the publication's standards, and they take full responsibility for the final version.

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Ethical approval

This research work has been carried out in accordance with ethical standards. Informed consent was obtained from all the participants at the beginning of the study. Even though there was no formal ethics committee in the structure of the university during the conduct of this research, the research work was carried out based on certain ethical guidelines and principles that were already established.

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