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# Strengthening Community Resilience: A Multi-hazard Action Plan for the Coastal Barangays of Pantalan Luma and Pantalan Bago in the Municipality of Orani, Bataan

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## Abstract:

This study focuses on the effects of a multi-hazard scenario in the coastal communities of Pantalan Luma and Pantalan Bago in the Municipality of Orani, Bataan. Due to their geographical location, low lying terrain and proximity to Manila Bay, the impact of typhoon related hazards like storm surges, strong winds and coastal flooding aggravated by climate change have increased the vulnerability of the communities. This study integrates scientific data, hazard mapping and capacity building to address the effects of these hazards to the community's capability to respond and recover to a multi-hazard scenario. The final output of the study is the development of a action plan to address the community's resilience to the four thematic areas of Prevention and Mitigation, Preparedness, Response and Recovery and Rehabilitation. The initiative ultimately serves as a model for integrated, climate-resilient community planning in coastal regions vulnerable to multi-hazard threats. Thus, the Multi-Hazard Action Plan serves as a strategic guide to enable communities to be capable and become resilient, thereby reducing the risk of disaster, minimizing losses both from lives and property and recovering effectively from disasters.

*Keywords* — **Multi-hazard Action Plan, Typhoon-related Hazards, Storm surges, Community Resilience, Orani Bataan, Disaster Risk Reduction Management**

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## I. INTRODUCTION

Located within the Pacific typhoon belt, the Philippines faces a constant threat from approximately 20 tropical cyclones annually, a situation exacerbated by climate change which fuels more intense, frequent, and destructive storms according to PAGASA. Scientific research from UP Diliman confirms that rising ocean temperatures are increasing the duration and strength of these cyclones, leading to severe hazards like flooding, storm surges, and strong winds [1]. The Municipality of Orani, Bataan specially its coastal barangays of Pantalan Luma and Pantalan Bago are particularly at risk due to their low-lying coastal geography and critical industrial hubs, as evidenced by recent heavy damage from Typhoons Carina, Egay, and Falcon. To address these vulnerabilities, a multi-hazard action plan for the municipality of Orani was being developed to enhance community resilience through technology, policy development, and local participation. This strategic framework aims to minimize the loss of life and property by strengthening disaster prevention and mitigation, preparedness, response, and recovery & rehabilitation efforts.

  

## II. SCOPE AND LIMITATION

This plan aims to address knowledge gaps regarding hazards such as typhoons, storm surges, and coastal flooding within the barangays of Pantalan Luma and Pantalan Bago, offering a framework that may also be applicable to other coastal communities. However, its success is subject to several limitations, including existing gaps in community awareness, the necessity of active local participation, and the challenges of resource allocation among competing priorities. Additionally, the plan relies on climate projections that carry inherent uncertainties, and the research was conducted under time constraints that may have impacted the depth of data analysis. Consequently, the proposal is intended to be a living document that requires ongoing refinement, continuous study, and periodic updates to remain an effective and responsive tool for disaster management.

## III. SITUATIONAL ANALYSIS

### *A. Global Situation*

Climate change is a major game changer and driver in studies related to typhoons, strong winds, and storm surges. This phenomenon has significantly increased the threshold and risk index of coastal communities anywhere in the world. Climate change does not necessarily increase the number of typhoons or any weather disturbance globally, but it is increasing their impact and the associated hazards. This increase in the potential intensity of the storms is due to warmer sea surface temperatures, the primary fuel for tropical cyclones. Category 4 and 5 cyclones were noted to increase in global models and based on observations since the late 1970s. This project also increases the maximum sustained winds of typhoons and tropical cyclones occurring regularly. [2].

### *B. Local Situation*

Orani, including coastal Barangays such as Pantalan Bago and Pantalan Luma have further developed their disaster risk management through various programs. It is however, noted that several factors may limit the response teams, including the local government's capabilities during multi-hazard disaster scenarios. During typhoons, communication systems may be affected or damaged, and reception would be difficult, making the evacuation and rescue efforts challenging. Though LGU-initiated efforts for the communities on early-warning systems, disaster exercises, and assignment of dedicated evacuation centers, the risk of potential multi-hazard impact to the community is still rising. Every community has its own challenges in dealing with disasters and reaching them often becomes a problem. In order to improve the capability to respond and recover as well as the resilience in mitigating and controlling scenarios involving typhoons with strong winds, storm surges, and flooding, this multi-hazard action plan needs to be developed.

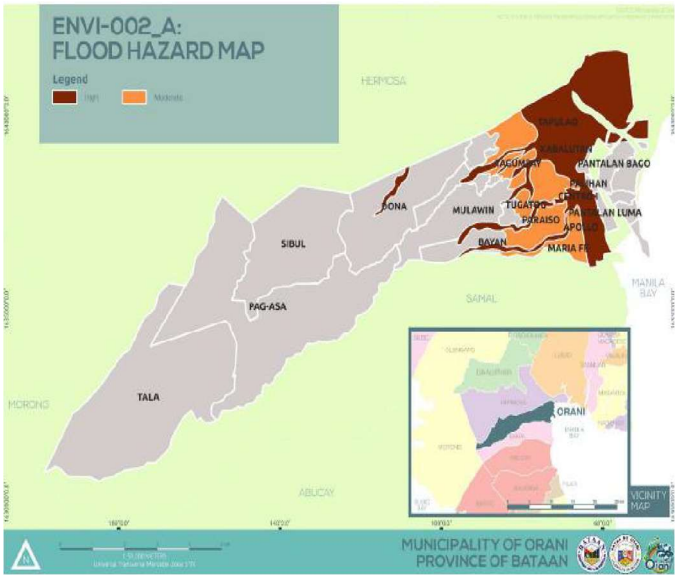


***Figure 1**. Flood Prone Areas of the Municipality of Orani*

## IV. METHODOLOGIES OF THE PLAN

This study utilized a structured survey and interview approach cantered on identifying risk perception, institutional preparedness, and community disaster management capabilities in Barangays Pantalan Luma and Pantalan Bago in Orani, Bataan. The survey instrument was organized into distinct sections to capture demographic data and evaluate four key categories: individual risk awareness regarding typhoons and storm surges, the institutional capacity of the Barangay Disaster Risk Reduction and Management Committee (BDRRMC), community-level preparedness, and overall readiness for response and rehabilitation. To ensure validity, the questionnaire underwent a pre-approval process by local officials and academic advisors

  

before its distribution. This primary data collection was further enriched by a comprehensive document review, which integrated insights from published journals, theses, and existing local governance frameworks, such as the Orani MDRRM Plan 2022–2026. By combining direct interviews with an analysis of established literature and official disaster plans, the researcher was able to substantiate the study's findings and gain a nuanced understanding of the actual conditions and needs of the coastal communities.

## V. RESULT OF THE SURVEY

### *A. Demographic Profile*

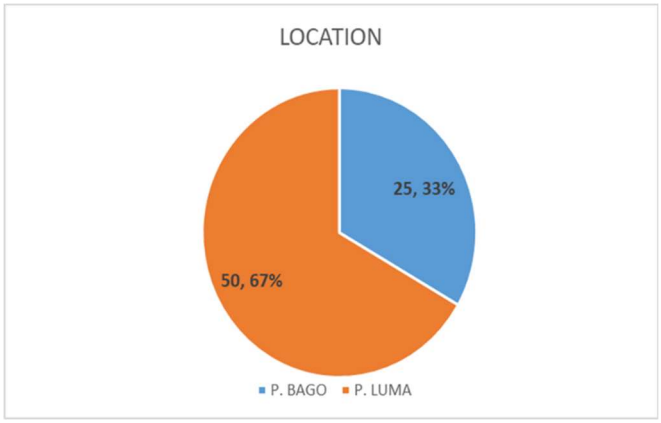


***Figure 2**. Respondents per Barangay*

Figure 2 illustrates the distribution of the respondents from the chosen barangays. The samples were selected using the proportional random sampling method for the 75 respondents. They were divided according to the population of the identified Barangays specifically Pantalan Luma and Pantalan Bago. 67% or 50 respondents were selected for Pantalan Luma with a population of 5,612 and 33% or 25 respondents from Pantalan Bago with a population of 2,269. This demographic profile was selected to ensure equal representation of the respondents based on the population and the number of potential respondents affected individuals from the two barangays. The recommended action plan will also be directly affected by the viewpoint of the individuals from the community.

TABLE I
RISK PERCEPTION AND AWARENESS

| Questions | Weighted Mean – Verbal Interpretation | Rank |
|---|---|---|
| I believe that a Typhoon can cause strong winds, storm surges and flooding | 4.21 – Strongly Agree | 1 |
| I believe that strong winds, storm surges and flooding caused by Typhoons has the potential to occur in our location | 4.13 – Agree | 2 |
| I believe that there are sufficient communications to warn us on the impact of strong winds, storm surges and flooding caused by Typhoons | 4.08 – Agree | 3 |
| I believe that there is sufficient controls in place to address the effects of strong winds, storm surges and flooding caused by Typhoon | 3.45 – Agree | 4 |
| I believe that our community has the capacity to respond to the hazard from strong winds, storm surges and flooding caused by typhoons | 3.37 – Agree | 5 |
| **Composite Mean** | **3.84 – Agree** | |

According to the data in Table 1, respondents demonstrate a mature and widespread recognition of typhoon-related hazards, yielding a very high mean that suggests historical exposure has effectively shaped local risk perception. While community members acknowledge their personal vulnerability—a key motivator for proactive preparedness and support for mitigation policies—the level of confidence varies across different disaster management facets [3]. There is high trust in the sufficiency of early warning systems and communication signals, which is statistically linked to better evacuation compliance and reduced mortality. However, while there is general agreement regarding the existence of risk controls and infrastructure, the slightly lower scores in this area and in practical response capacity suggest underlying skepticism. Specifically, the relatively lower confidence in community response suggests that despite high awareness and reliable warnings, residents may still perceive significant limitations in the manpower, resources, and training required for effective disaster intervention.

  

TABLE II
INSTITUTIONAL PREPAREDNESS AND CAPABILITY

| Questions | Weighted Mean – Verbal Interpretation | Rank |
|---|---|---|
| The BDRRMC has the capability to address the hazards of strong winds, storm surges and flooding caused by typhoons | 3.46 – Neutral | 2 |
| The BDRRMC has enough manpower to effectively address the hazards of strong winds, storm surges and flooding caused by typhoons | 3.47 – Neutral | 1 |
| The BDRRMC have a clear contingency plan to effectively respond to the hazards of strong winds, storm surges and flooding caused by typhoons | 3.44 – Neutral | 3 |
| **Composite Mean** | **3.46 – Neutral** | |

Table II results reflect moderate but positive perceptions of institutional preparedness and community readiness in the barangays. Respondents rated the sufficiency of BDRRMC manpower highest (mean = 3.47, neutral), indicating that basic human resources for disaster response are in place. Confidence in the technical and operational capability of the BDRRMC to manage typhoon-related hazards followed closely (mean = 3.46, neutral) emphasizing the need for continuous training, cross-skilling, and inter-agency capability underscoring the importance of trained personnel. Contingency planning also received a neutral but favourable rating (mean = 3.44), suggesting that plans exist and are perceived as useful, yet must remain dynamic, regularly updated, and widely communicated to ensure effectiveness during multi-hazard events.

TABLE III
COMMUNITY PREPAREDNESS AND CAPABILITY

| Questions | Weighted Mean – Verbal Interpretation | Rank |
|---|---|---|
| The community have sufficient information when needed to evacuate due to the hazard of strong winds, storm surges and flooding caused by Typhoons | 3.61 – Agree | 1 |
| Families have prepared "EMERGENCY BAGs" in case of sudden evacuation due to the effects of strong winds, storm surges and flooding caused by Typhoon | 3.04 – Neutral | 3 |
| The community have sufficient evacuation sites is the need to relocate due to the impact of strong winds, storm surges and flooding caused by Typhoons | 3.51 – Agree | 2 |
| **Composite Mean** | **3.38 – Neutral** | |

The findings in Table III indicate generally strong community preparedness, particularly in terms of evacuation awareness and infrastructure. A weighted mean of 3.61 (agree) reflects high community confidence in having sufficient information to evacuate during typhoon-related hazards, underscoring the effectiveness of risk communication, trusted warning systems, and reliable information channels in supporting timely and compliant evacuations. The availability of evacuation sites also received a positive rating (mean = 3.51, agree), highlighting their importance in encouraging evacuation. The evacuation areas however should ensure adequacy and readiness to prevent secondary risks from the evacuees. The availability of household emergency bags registered a neutral mean of 3.04, indicating moderate but inconsistent family-level preparedness. This suggests that while awareness is high, translating knowledge into sustained household action remains a challenge, requiring continuous education, practical drills, and community-based interventions to strengthen preparedness behaviours and overall resilience.

TABLE IV
COMMUNITY DISASTER MANAGEMENT

| Questions | Weighted Mean – Verbal Interpretation | Rank |
|---|---|---|
| Hazard Maps are available with adequate information that can assist in response to disaster | 3.26 – Neutral | 1 |
| There are safe evacuation areas with adequate social services in times of evacuation and rehabilitation | 3.25 – Neutral | 2 |
| There are policies in place to ensure that buildings and houses are constructed in accordance with National Building Codes | 2.85 – Neutral | 4 |
| There are awareness campaigns by the Local Government to enhance the knowledge and awareness of communities to Disaster Preparedness | 3.11 – Neutral | 3 |
| There are early warning systems to inform the community from the hazard of strong winds, storm surges and flooding caused by typhoons | 3.26 – Neutral | 1 |
| **Composite Mean** | **3.15 – Neutral** | |

  

Table IV results indicate moderate levels of preparedness across key disaster risk reduction components, with several areas requiring improvement. Hazard maps and early warning systems received the highest ratings (mean = 3.26, neutral), suggesting that while these tools are available and somewhat useful, they are not yet fully optimized in terms of accuracy, accessibility, community trust, and operational integration. Similarly, safe evacuation areas and associated social services (mean = 3.25, neutral) reveal gaps in confidence related to infrastructure adequacy, access, and essential support services during evacuation and recovery. Awareness campaigns (mean = 3.11, neutral) demonstrate limited reach and effectiveness, indicating the need for more participatory, locally relevant, and sustained community engagement strategies. The lowest-rated area, compliance with national construction codes (mean = 2.85, neutral), highlights persistent challenges in policy enforcement and structural resilience, underscoring the need to strengthen implementation mechanisms, routine inspections, and public awareness to reduce vulnerability in hazard-prone communities.

## VI. SWOC ANALYSIS

TABLE V
DISASTER PREVENTION AND MITIGATION

| | |
|---|---|
| Strengths | Strong disaster resilience through institutional preparedness under RA 10121, deep local hazard awareness, effective collaboration with the LGU of Orani, and the protection provided by mangrove ecosystems. |
| Weaknesses | limited technical capacity in disaster management, inadequate and vulnerable infrastructure, severe financial constraints, and the degradation of natural protective ecosystems, all of which heighten disaster risk and undermine long-term resilience. |
| Opportunities | significant opportunities to strengthen disaster resilience through access to international climate adaptation funding, ecosystem-based solutions such as mangrove restoration, community-driven and inclusive approaches, the integration of modern technologies like EWS and GIS, and the use of these initiatives to inform a comprehensive, multi-hazard BDRRM plan |
| Challenges | growing challenges from intensified climate change impacts, increasing exposure due to urbanization and population growth in high-risk areas, and difficulties sustaining disaster risk reduction programs because of financial, technical, and governance constraints. |

TABLE VI
DISASTER PREPAREDNESS

| | |
|---|---|
| Strengths | established early warning systems, evacuation structures, community networks, and institutional support, but its effectiveness is undermined by implementation gaps, resource constraints, communication failures, and a persistent disconnect between preparedness plans and actual household-level actions. |
| Weaknesses | Despite high awareness, disaster preparedness in Pantalan Luma and Pantalan Bago is weakened by implementation and perception gaps, limited household resources, unreliable communication systems, and poor sustainability, resulting in knowledge not translating into consistent, concrete preparedness actions. |
| Opportunities | enhanced through participatory community-based BDRRM planning, the use of mobile technologies for real-time warnings and education, and school-based disaster programs that foster a long-term culture of preparedness. |
| Challenges | socioeconomic constraints, behavioural complacency, limited access to resources for vulnerable groups, political discontinuity, competing household priorities, the complexity of multi-hazard preparedness, and declining commitment over time. |

TABLE VII
DISASTER RESPONSE

| | |
|---|---|
| Strengths | strong community cohesion and bayanihan, active volunteer response teams, multi-agency coordination, and responders' experience and local knowledge, enabling rapid and effective action during emergencies. |
| Weaknesses | delayed response times, inadequate equipment and resources, limited advanced rescue training among responders, and safety risks that expose responders to the same hazards as affected residents |
| Opportunities | strengthened by training local response teams, pre-positioning emergency supplies for immediate access, and fostering inter-organizational networks and mutual aid agreements to improve resource coordination. |
| Challenges | catastrophic climate-driven events that exceed local capacity, rapid resource depletion during prolonged crises, the dangerous trade-off between responder safety and urgent need, and the operational strain caused by residents who resist evacuation. |

TABLE VIII
DISASTER REHABILITATION AND RECOVERY

| | |
|---|---|
| Strengths | built on a foundation of structured government aid, the inherent cultural resilience of Filipino communities who prioritize self-recovery through social and family networks, and the strong active partnership between local government and |

  

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|---|---|
| | civic organizations like the Knights of Columbus. |
| Weaknesses | lack of formalized rehabilitation programs in local disaster plans and persistent budget shortfalls that limit long-term reconstruction, especially for informal settler families. Furthermore, the barangays suffer from a technical capacity gap, as local response teams currently lack the training necessary to conduct essential post-disaster assessments for identifying immediate community needs. |
| Opportunities | developing code-compliant resilient infrastructure, integrating livelihood programs like TUPAD and Cash-for-Work, providing disaster financing for fisherfolk, and ensuring community participation in decision-making to foster local ownership. |
| Challenges | severely impeded by climate-driven multi-hazard scenarios, where overlapping or successive disasters create new damage before previous restoration efforts can be completed, resulting in prolonged community hardship. |

## VII. PESTLE ANALYSIS

**Political:** The political landscape governing disaster management in Pantalan Luma and Pantalan Bago is shaped based on the requirements of RA10121 which provides the institutional framework for disaster preparedness and response across all levels of government. This setup enables the barangays to develop their own BDRRM Councils that are supported by the local government leadership and the MDRRM Office. However, the barangays government capacity remains a critical concern, as the barangay leadership is defined by who will be the incumbent and thus the program for previous administrations usually gets replaced by the incoming administrations programs.

**Economic:** Barangay Pantalan Luma and Barangay Pantalan Bago as coastal communities rely mostly on fisheries, fish trading and aquaculture. The establishment of the new fish landing and trading post in Pantalan Bago highlights the importance of this seafood trade in the economy. In terms of budget for DRRM activities, the barangays rely solely on the activation and declaration of calamity for response while limited budget based on the National Tax Allotment (NTA) for prevention, mitigation, preparedness and rehabilitation and recovery programs. Since the community rely mostly on the fishing industry the effects of typhoons, strong wind, storm surges and flooding will greatly affect the economic viability of the community. The barangays also pose a unique eco-tourism opportunity through the mangrove rehabilitation and eco-tourism programs that will enhance the communities' economic condition as well as to increase the natural barrier of the communities during typhoons, strong winds and storm surges.

**Social:** Barangays Pantalan Luma and Pantalan Bago consist mostly of residents with approximately 7,881 population combined. This also includes long-term residents, renters and informal settlers. This data also details more than half below the working age or 18 and seniors combined (BDRRMP, 2022). This also affects the capability of the social structure to adapt and react to disaster scenarios from typhoons, storm surges and flooding. The community also hosts elementary schools that serve as staging areas and evacuation areas during emergency situations. These schools coordinate with the local DRRM Office for the conduct of emergency drills and orientations or training related to disaster risk reduction management. There are also Barangay Health Centers and a birthing clinic within the Barangay that supports the health requirements of the community during disasters.

**Technological:** Technological capacity in Pantalan Luma and Pantalan Bago relies on a mix of modern GIS mapping and PAGASA monitoring alongside traditional methods like church bells. While advanced tools for risk mapping and real-time data exist at the municipal level, the barangays still lack the direct technical capacity and local infrastructure to fully utilize them. Furthermore, while mobile networks and social media offer rapid communication channels, their frequent failure during extreme weather events remains a critical vulnerability.

**Legal:** The disaster management of Pantalan Luma and Pantalan Bago is governed by RA 10121, which mandates the establishment of local councils, executive orders, and the allocation of disaster funds. While these barangays have developed contingency plans, they currently fail to account for complex multi-hazard scenarios or climate change projections like sea-level rise. Furthermore, the enforcement of land-use and zoning laws remains weak, as

  

evidenced by the continued presence of informal settlers in high-risk, hazard-prone areas. Ultimately, local policy continues to focus on reactive post-disaster impacts rather than the proactive mitigation of long-term vulnerabilities.

**Environment:** Environmental conditions in Pantalan Luma and Pantalan Bago fundamentally shape the community's exposure and vulnerability to typhoons, strong winds, storm surges, and flooding through both natural processes and anthropogenic modifications. Climate change impacts are amplifying disaster risks, with sea level rise, increasing storm intensity, and changing rainfall patterns associated with global warming creating more severe hazard conditions for coastal communities. Mangrove protection and rehabilitation is one of the well-known programs with the cooperation of the private and local government of Orani within Barangay Pantalan Luma and Pantalan Bago. It is also noted that since the barangays are located near the Orani River and the coast, improper waste disposal is one of the concerns that was being addressed by the BDDRM Plan and barangay legislations. Clogged drains from the said garbage and trash were identified to aggravate the flooding issues within the areas. Water Pollution from improper wastewater disposal is also prevalent causing additional concerns when typhoons, storm surges and flooding raises the waters in the area that could cause health problems.

## VIII. ACTION PLAN

### *A. Disaster Prevention and Mitigation*

TABLE IX
ACTION PLAN FOR GOAL 1, OBJECTIVE 1.1

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|---|---|
| **Goal 1** | Reduce disaster risks and community vulnerabilities through proactive measures, risk-informed planning, and sustainable, nature-based interventions |
| **Objective 1.1** | Conduct and utilize a comprehensive multi-hazard and vulnerability assessment to generate risk information and inform DRRM planning for Barangays Pantalan Luma and Pantalan Bago by 2026–2027. |
| **Outcome** | Risks associated with Typhoon and it related hazards for the Barangay Pantalan Luma and Pantalan Bago are significantly reduced through the awareness of the community regarding their vulnerability in times of disasters |
| **Programs, Projects and Activities (PPA)** | 1.1.1 Conduct of capacity building on hazard and vulnerability mapping for Barangays Pantalan Luma and Pantalan Bago<br>1.1.2 Conduct of field validation, visual identification, and geotagging of hazard-prone and high-risk areas in the two target barangays<br>1.1.3 Development of multi-hazard maps and vulnerability profiles (exposure, socio-economic, infrastructure) for the two target barangays<br>1.1.4 Integration of finalized hazard and vulnerability maps into relevant municipal and barangay DRRM plans and sectoral plans |

The initiative focuses on ensuring that disaster risks and community vulnerabilities are reduced through proactive measures, risk-informed planning and sustainable nature-based interventions. PPA 1.1.1 focuses on the conduct of capacity building on hazard and vulnerability mapping for Barangays Pantalan Luma and Pantalan Bago to develop a comprehensive multi-hazard and vulnerability assessment by 2026 – 2027. PPA 1.1.2 will ensure that the conduct of field validation, visual identification, and geotagging of hazard-prone and high-risk areas in the two target barangays are done to achieve the same objective. While PPA 1.1.3 will develop the multi-hazard maps and vulnerability profiles (exposure, socio-economic, infrastructure) for the two target barangays. And lastly, PPA 1.1.4 will integrate the finalized hazard and vulnerability maps into relevant municipal and barangay DRRM plans and sectoral plans.

TABLE X
ACTION PLAN FOR GOAL 1, OBJECTIVE 1.2

| | |
|---|---|
| **Goal 1** | Reduce disaster risks and community vulnerabilities through proactive measures, risk-informed planning, and sustainable, nature-based interventions |
| **Objective 1.2** | Implement an ecosystem-based coastal protection program through baseline assessment, mangrove rehabilitation, protection, and community capacity-building starting 2026. |
| **Outcome** | Effects of Typhoon, Strong winds, Storm surges and flooding are mitigated due to the maintenance of natural barriers (Mangrove Forests) |
| **Programs, Projects and Activities (PPA)** | 1.2.1 Conduct of a baseline ecological and spatial assessment of mangrove areas<br>1.2.2 Implementation of mangrove rehabilitation activities including site preparation, species-appropriate replanting, and regular maintenance<br>1.2.3 Formation of a community-based Mangrove Protection and Monitoring Team (Bantay Bakawan)<br>1.2.4 Enactment of a barangay ordinance on the protection of mangrove zones |

This initiative focuses on the implementation of ecosystem-based coastal protection programs

  

through implementation of various PPAs. 1.2.1 focuses on establishing a baseline ecological and spatial assessment of mangrove areas that will be the basis for the overall program. PPA 1.2.2 implements the mangrove rehabilitation activities including site preparation, species appropriate replanting and regular monitoring and maintenance of the protected areas. PPA 1.2.3 focuses on the formation of a community-based mangrove protection and monitoring team (Bantay Bak1Bataan) that will be the implementing body of the program. Lastly, PPA 1.2.4 will cement the establishment and rehabilitation of this program by enacting barangay ordinances on the protection of mangrove protection zones.

TABLE XI
ACTION PLAN FOR GOAL 1, OBJECTIVE 1.3

| | |
|---|---|
| **Goal 1** | Reduce disaster risks and community vulnerabilities through proactive measures, risk-informed planning, and sustainable, nature-based interventions |
| **Objective 1.3** | Develop a community-based multi-hazard early warning system (EWS), including awareness, capacity building, and localization of warning protocols for typhoons, storm surges, and flooding from 2026–2028. |
| **Outcome** | By 2028, the BDRRMC are more confident in their decision making due to their increased understanding and interpretation of Early Warning Systems (EWS) |
| **Programs, Projects and Activities (PPA)** | 1.3.1 Conduct of a needs assessment and technical review of existing early warning systems and communication gaps in the BDRRMC and in the community<br>1.3.2 Development of community-based early warning equipment/devices for typhoons, storm surges, and flooding<br>1.3.3 Conduct of community-wide capacity building on EWS operation, interpretation of alerts, and maintenance of devices |

This table focuses on the community -based multi-hazard EWS, and awareness, capacity building and localization protocols for the barangays Pantalan Luma and Pantalan Bago. PPA 1.3.1 focuses on the conduct of need analysis and technical review of existing early warning systems (EWS) to address gaps in the community communications. PPA 1.3.2 will be tasked to develop the community-based early warning system based on the needs analysis and technical review. PPA 1.3.3 will enable the community through capacity-building and awareness on EWS operation, interpretation and maintenance of the equipment.

### *B. Disaster Preparedness*

TABLE XII
ACTION PLAN FOR GOAL 2, OBJECTIVE 2.1

| | |
|---|---|
| **Goal 2** | Strengthen the community's capacity to anticipate, prepare for, and respond effectively to disasters through enhanced preparedness systems, skills development, and coordinated mechanisms. |
| **Objective 2.1** | Develop, regularly update, and harmonize Barangay DRRM Plans with municipal and national frameworks through a structured planning, review, and community dissemination process every 3 years. |
| **Outcome** | By 2026, have developed, established and implemented a well-organized BDRRM Plan for multi-hazard scenario like typhoon, strong winds, storm surges and flooding |
| **Programs, Projects and Activities (PPA)** | 2.1.1 Conduct of multi-hazard scenario planning and facilitate the formulation of the Barangay DRRM Plan.<br>2.1.2 Conduct of community-wide orientation and IEC dissemination of the approved BDRRM Plan. |

This section ensures that the community have the capacity to anticipate, prepare for and respond effectively to disaster through enhanced preparedness systems, skills development and coordinated mechanisms. PPA 2.1.1 will conduct multi-hazard scenario planning and facilitate the formulation of the Barangay DRRM Plan aligned with the framework of RA10121. PPA 2.1.2 ensures that the community are aware of the DRRM plan by conducting community-wide awareness, orientation and IEC dissemination.

TABLE XIII
ACTION PLAN FOR GOAL 2, OBJECTIVE 2.2

| | |
|---|---|
| **Goal 2** | Strengthen the community's capacity to anticipate, prepare for, and respond effectively to disasters through enhanced preparedness systems, skills development, and coordinated mechanisms. |
| **Objective 2.2** | Develop and implement a standardized capability, preparedness, and awareness curriculum for at least 80% of households through community training. |
| **Outcome** | By 2027, a capable, trained and well-prepared community that can initially respond to disasters was established in Barangay Pantalan Luma and Pantalan Bago |
| **Programs, Projects and Activities (PPA)** | 2.2.1 Conduct of a multi-sectoral community-based DRRM training.<br>2.2.2 Collaboration with schools for youth-oriented disaster education and simulation activities |

This section increases the awareness of the community by coordinating with the community and local schools for the implementation of trainings and simulations. This will ensure that the development and implement a standardized capability,

  

preparedness, and awareness curriculum for at least 80% of households. PPA 2.2.1 emphasizes the importance of multi-sectoral participation on conducting DRRM Trainings. PPA 2.2.2 collaborates with schools within the barangays giving the community another venue to train the youth in disaster education and simulation to start them early.

TABLE XIV
ACTION PLAN FOR GOAL 2, OBJECTIVE 2.3

| | |
|---|---|
| **Goal 2** | Strengthen the community's capacity to anticipate, prepare for, and respond effectively to disasters through enhanced preparedness systems, skills development, and coordinated mechanisms. |
| **Objective 2.3** | Develop, test, and institutionalize barangay multi-hazard contingency plans for typhoons, strong winds, storm surges, and flooding starting 2026. |
| **Outcome** | A well-developed contingency plan for multi hazard scenarios that has the potential to happen in barangays P. Luma and P. Bago, resulting in a more detailed response once the disaster happens |
| **Programs, Projects and Activities (PPA)** | 2.3.1 Development of barangay-specific multi-hazard contingency plans with MDRRMO technical support.<br>2.3.2 Conduct of full-scale simulation drills to validate the contingency plans |

This initiative strengthens the capacity of the community though the development, testing and institutionalizing the barangays multi-hazard contingency plan. PPA 2.3.1 develops the barangay-specific multi-hazard contingency plans with MDRRMO technical support. PPA 2.3.2 conduct of full-scale simulation drills to validate the contingency plans ensuring that the community are fully trained and capable to respond to emergencies. Overall the outcome for this initiatives is a well-developed contingency plan for multi-hazard scenarios that has the potential to happen in the coastal barangays od Pantalan Luma and Pantalan Bago.

### *C. Disaster Response*

TABLE XV
ACTION PLAN FOR GOAL 3, OBJECTIVE 3.1

| | |
|---|---|
| **Goal 3** | Deliver timely, effective, and well-coordinated emergency response actions that save lives, reduce suffering, and uphold the dignity and safety of disaster-affected populations |
| **Objective 3.1** | Establish and operationalize an effective communication, collaboration, and coordination (3Cs) system across barangays and the MDRRMO for timely and organized disaster response. |
| **Outcome** | A collaborative network of responders that will be able to actively engage in local disaster risk reduction efforts of the community |
| **Programs, Projects and Activities (PPA)** | 3.1.1 Adoption of a standardized 3Cs communication and coordination framework for all barangays<br>3.1.2 Procurement of communication equipment (radios, phones, command center tools) to support the 3Cs system |

This section enables the improvement of disaster response by increasing collaboration, communication and coordination (3Cs). PPA 3.1.1 adopts a standardized 3Cs communication and coordination framework that will support coordination with other barangays in terms of disaster response. PPA 3.1.2 will bridge the communication gap for a faster coordination, communication and collaboration between barangays for a more efficient and coordinated disaster response.

TABLE XVI
ACTION PLAN FOR GOAL 3, OBJECTIVE 3.2

| | |
|---|---|
| **Goal 3** | Deliver timely, effective, and well-coordinated emergency response actions that save lives, reduce suffering, and uphold the dignity and safety of disaster-affected populations |
| **Objective 3.2** | Establish community-based emergency response teams capable of responding effectively to multi-hazard emergency situations through training, team formation, planning, and operational exercises. |
| **Outcome** | A fully trained and capable BDRRMC members that have the capacity to respond to emergency and disaster situations |
| **Programs, Projects and Activities (PPA)** | 3.2.1 Development of a standardized multi-hazard emergency response training curriculum for BDRRMC and community responders<br>3.2.2 Formation and capacity building of the Barangay Emergency Response Teams<br>3.2.3 Development of barangay-specific multi-hazard emergency response plans with SOPs, resource inventories, and coordination protocols |

This initiative ensures that the community are capable of responding effectively to multi-hazard emergency situations through trainings, team formation and operational exercises. PPA 3.2.1 first focuses on specific multi-hazard emergency response training curriculum for BDRRMC and community responders. After the development of the training curriculum, PPA 3.2.2 Formation and capacity building of the Barangay Emergency Response Team (BERT) that will be the first responders during Multi-hazard scenario. PPA 3.2.3 will ensure that the development of a standardized multi-hazard emergency response plan with SOPs, identified resources inventories and coordination protocols.

  

### *D. Disaster Rehabilitation and Recovery*

TABLE XVII
ACTION PLAN FOR GOAL 4, OBJECTIVE 4.1

| | |
|---|---|
| **Goal 4** | Restore and improve lives, livelihoods, infrastructure, and services in disaster-affected communities while building resilience to future disasters through "Build Back Better" principles |
| **Objective 4.1** | Achieve a rapid recovery and rehabilitation plan for barangay P. Luma and P. Bago for key infrastructures to be returned to operational status within 6 months |
| **Outcome** | At the end of the recovery period, all critical and key infrastructures are fully operational after the disaster. |
| **Programs, Projects and Activities (PPA)** | 4.1.1 Conduct RDANA training for all BDRRMC Members<br>4.1.2 Develop a recovery and rehabilitation Plan based on post-disaster assessment results, prioritizing lifeline infrastructure (roads, power, water, health facilities)<br>4.1.3 Implement emergency repair and rehabilitation of critical infrastructure |

This section details disaster rehabilitation and recovery emphasizing the importance of restoring and improving lives, livelihood, infrastructure and services following the principle of "Build, Back, Better". PPA 4.1.1 focuses on the capability-development of individuals within the community on conducting Rapid Damage Assessment and Needs Analysis (RDANA). PPA 4.1.2 ensures the development of a rehabilitation and recovery plans based on the post-disaster assessment prioritizing lifeline infrastructure (Roads, power, water, health facilities, etc). PPA 4.1.3 assures fast recovery through implementation of the emergency repairs and rehabilitation of the critical infrastructures.

TABLE XVIII
ACTION PLAN FOR GOAL 4, OBJECTIVE 4.2

| | |
|---|---|
| **Goal 4** | Restore and improve lives, livelihoods, infrastructure, and services in disaster-affected communities while building resilience to future disasters through "Build Back Better" principles |
| **Objective 4.2** | Develop and implement a coordinated financial assistance and livelihood recovery framework supported by government agencies, NGOs, and the private sector to help affected communities restore income and recover within six months after a disaster. |
| **Outcome** | Six months after the disaster, the affected communities have recovered their income generating capacity through the implementation of the developed support framework |
| **Programs, Projects and Activities (PPA)** | 4.2.1 Establishment of partnerships with government agencies (DA, DOLE, DTI, BFAR), NGOs, and private sector for livelihood grants, skills training, and financial inclusion programs<br>4.2.2 Provide capacity-building for households on financial literacy, small business recovery, and risk-informed livelihood planning<br>4.2.3 Provide sector-specific livelihood packages (e.g., fisherfolk, farmers, vendors) linked to damage and needs assessment results |

This section on disaster rehabilitation and recovery focuses on the community's rehabilitation and recovery. PPA 4.2.1 establishes partnership with government and private sectors for the livelihood grants, skills training and financial inclusion programs to enable affected community members to recover from the disaster. PPA 4.2.2 Provides capacity-building for households on financial literacy, small business recovery and risk-informed livelihood planning enabling household and businesses are financially literate. PPA 4.2.3 provision of sector-specific livelihood packages for affected fisherfolk, farmers and vendors) linked to damage and needs assessment results.

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