

Integrating Resilience and Sustainability: Relocation Approach for Communities at Risk in Poblacion Bustos, Bulacan

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ABSTRACT

The study aimed to develop a culturally sensitive and environmentally sound relocation framework that incorporates climate change adaptation, resource efficiency, social equity, and cultural preservation, ultimately contributing to the establishment of resilient and sustainable relocated communities in Población Bustos, Bulacan. It analyzed the challenges and opportunities associated with relocating at-risk populations, considering factors such as site selection, housing design, infrastructure development, livelihood opportunities, and community participation.

This study employed a mixed-method approach, including spatial analysis of hazard-prone areas, community consultations, and interviews with experts.

This study revealed several key findings on Vulnerability Assessment, Feasibility of Relocation, Community Acceptance and Participation, Integration of Resilient Principles, Sustainability Considerations, Policy and Governance Gaps, and Effective ways that are emphasizes on immediate goal of relocation for safety and disaster resilience, the conclusions accentuated that true success lies in integrating this with sustainability – ensuring long-term well-being, economic viability, and self-reliance for the relocated communities

The findings aimed to provide evidence-based recommendations for a relocation approach that enhances the long-term safety, well-being, and environmental stewardship of the affected population.

The study proposed a development plan to address the urgent needs for a comprehensive and sustainable solution to safeguard communities in Poblacion Bustos, Bulacan, facing recurrent threats from natural hazards such as flooding and seismic activity. The plan outlines a meticulously designed relocation strategy that prioritizes the safety, well-being, and long-term prosperity of at-risk populations. Beyond mere physical displacement, this approach integrated principles of resilience by fostering community preparedness, enhancing adaptive capacities, and establishing robust early warning systems. The proposed plan emphasizes community participation throughout the planning and implementation phases, ensuring that the relocation process is culturally sensitive, economically viable, and socially equitable. Key components included comprehensive risk assessment, identification of suitable relocation sites, development of resilient and sustainable housing, establishment of livelihood generation programs, and the creation of a governance structure for effective plan execution and monitoring. Ultimately, this plan aimed to transform vulnerable communities into thriving, self-reliant settlements capable of adapting to future environmental challenges, setting a precedent for proactive and holistic disaster risk reduction and management in the Philippines.

Keywords: Resilience, Sustainability, Relocation, Communities at Risk, Risk Reduction and Adaptation

THE PROBLEM AND ITS BACKGROUND

Rationale

This chapter presents the background of the study, research problem, scope, and delimitations, and significance of the study.

As climate change intensifies, its destructive effects manifest through increasingly extreme weather patterns, rising sea levels, and more frequent natural disasters that threaten communities worldwide. Recent calamities, such as Typhoon Rai (locally known as Odette) in 2021, which displaced nearly 10 million people in the Philippines, and the devastating floods in Pakistan in 2022, highlight the urgent need for effective disaster mitigation and response strategies (ReliefWeb, 2022; UNHCR, 2023). In the Philippines, areas such as Poblacion Bustos, Bulacan, are frequently affected by severe flooding, exposing residents to significant environmental risks. Given these conditions, developing innovative solutions for managing displacement is critical (Collado & Orozco, 2020). This study examines how integrated relocation strategies can strengthen the resilience and sustainability of vulnerable populations, ensuring that affected communities do not merely endure displacement but are empowered to rebuild with long-term security.

Displacement due to environmental disasters often leads to profound social, economic, and psychological disruptions. Vulnerable groups, particularly those from lower-income sectors, face additional difficulties in adapting to relocation (Abenir, Manzanero, & Bollettino, 2022). Forced migration often results in the loss of livelihoods, weakened social networks, and the erosion of cultural identities, while in some cases, it exacerbates social marginalization and mental distress. Addressing these complexities requires a multidimensional understanding of interrelated social, economic, and environmental factors. This research adopted a holistic approach by integrating resilience and sustainability into relocation strategies, ensuring that the needs and aspirations of affected communities were met through proactive and well-structured interventions (Santos & Membrebe Jr., 2023). In the Philippines, rapid urbanization in disaster-prone areas intensified pressures on land and resources, necessitating relocation approaches that went beyond short-term survival strategies. Effective planning is needed to create economic opportunities, promote social equity, and enhance environmental sustainability in resettlement efforts (Tan, 2022). This study aimed to guide relocation policies that addressed both immediate threats and long-term sustainability, equipping communities with the tools to withstand future climate-related challenges.

The theoretical foundation of this study aligned with an expanding body of literature that emphasized the importance of resilience-building and sustainable development in climate-induced displacement scenarios. Recent studies suggested that integrating disaster risk reduction strategies with relocation efforts significantly improved long-term adaptation outcomes (Chico, Cortez, & De Jesus, 2021). This research contextualized these findings within the specific case of Poblacion Bustos, Bulacan, leveraging existing knowledge to develop practical strategies. Additionally, the study actively involved local stakeholders, including community members, government agencies, and non-governmental organizations, to ensure that proposed solutions reflected the realities and aspirations of the affected population. Engaging these stakeholders helped create more inclusive policies and enhanced the likelihood of successful implementation.

Recognizing the importance of participatory planning, this study emphasized the role of community engagement in refining relocation strategies. Affected residents held valuable knowledge about their

environment, social dynamics, and coping mechanisms, which informed culturally sensitive and effective resettlement plans (Aquino & Palarca, 2021). By involving residents in decision-making processes, the research sought to empower the people of Poblacion Bustos, ensuring that their perspectives were heard and incorporated into policies. This participatory approach not only improved the legitimacy of relocation initiatives but also strengthened residents' sense of ownership, fostering long-term stability and self-sufficiency in their new environments.

The significance of this study extends beyond the immediate context of Poblacion Bustos. Its findings contributed to broader discussions on disaster risk reduction and climate adaptation strategies in the Philippines and similar regions. By examining how resilience and sustainability could be effectively integrated into relocation programs, the research provided insights for policymakers and practitioners addressing climate change-related displacement. The study's practical recommendations offered adaptable solutions for diverse settings, supporting equitable and sustainable relocation strategies for at-risk communities. Furthermore, the research contributed to the field of Engineering Management by offering a structured framework for designing and implementing disaster-resilient infrastructure, optimizing resource allocation in relocation efforts, and integrating technological innovations to enhance disaster preparedness and response. As climate change continued to reshape the global landscape, there was an urgent need for innovative solutions that safeguarded communities against existential threats. By adopting an integrated approach, this study aimed to shift the narrative of displacement from one of vulnerability and loss to one of opportunity and empowerment.

Given the escalating challenges posed by climate change, a paradigm shift was needed in how community displacement and relocation were managed (Pante, 2024). This study proposed relocation strategies that prioritized resilience and sustainability, ensuring that at-risk communities not only survived but thrived despite environmental adversities. By developing fair, effective, and sustainable relocation policies for Poblacion Bustos, the research contributed to the broader goal of strengthening community resilience in the face of climate uncertainties. Through a collaborative, interdisciplinary effort, it provided integrated solutions that empowered vulnerable populations to face displacement challenges with strength, preparedness, and long-term stability.

Literature Review

The literature and studies that have been compiled from various sources and to which the current study is related are presented in this section. The background information provided to the proponent better grasped the study.

Socio-Ecological Resilience and Sustainable Development. Resilience has emerged as a fundamental concept in the study of disaster risk reduction, sustainability, and urban and rural development. With the increasing frequency and severity of climate-related disasters, scholars have sought to refine the definition of resilience to encompass multiple dimensions, including social, economic, and environmental factors (Imperiale & Vanclay, 2021). The concept of community resilience extends beyond physical infrastructure to include social networks, governance structures, and adaptive capacities that enable populations to recover from and prepare for future crises (Rendon, Osman, & Faust, 2021). Recognizing the interconnected nature of built, natural, and social systems, recent studies have emphasized the need for an integrated approach that balances resilience-building with sustainable development (Zeng et al., 2022). Disaster resilience has traditionally been viewed through a risk management lens, but scholars argue for a more comprehensive perspective that includes socio-ecological systems and their adaptive capacities

(Talubo, Morse, & Saroj, 2022). Examining small island communities, Talubo et al. (2022) highlight how defining resilience must go beyond physical infrastructure to consider environmental sustainability, social cohesion, and governance mechanisms. Similarly, Logan, Aven, Guikema, and Flage (2022) suggest that resilience science must evolve beyond simplistic definitions of risk assessment to embrace a dynamic systems approach. The ability of communities to adapt and self-organize in the face of uncertainty is central to resilience-building efforts, and an integrated risk science framework offers practical solutions for achieving this (Logan et al., 2022). The need for a more dynamic, data-driven approach to disaster resilience has also been advocated by Yabe, Rao, Ukkusuri, and Cutter (2022), who propose leveraging big data and complex systems modeling to predict and mitigate disaster impacts more effectively.

Within the discourse on resilience, the role of local communities in defining and implementing adaptive strategies has gained increasing attention. Choudhury, Haque, Nishat, and Byrne (2021) explore how indigenous and local knowledge play a critical role in fostering social learning and disaster preparedness. In coastal Bangladesh, for instance, traditional knowledge and institutional cooperation have shaped community resilience to cyclones by enhancing early warning systems, resource-sharing networks, and climate-responsive infrastructure (Choudhury et al., 2021). The significance of participatory planning is further underscored by Zhang, Yuan, Li, and Hu (2022), who argue that community engagement is vital for sustainable rural revitalization. They propose a resilience framework that strengthens both individual and collective capacities by integrating local knowledge, environmental conservation, and economic opportunities into long-term rural development plans.

The intersection of resilience and sustainability has also been explored in the context of business and economic development. Small and medium-sized enterprises (SMEs) play an important role in fostering resilience by implementing sustainability-oriented business practices that support both organizational and community-level adaptation (DiBella et al., 2023). By investing in resource efficiency, green infrastructure, and socially responsible supply chains, SMEs can contribute to disaster preparedness and recovery while simultaneously strengthening economic stability (DiBella et al., 2023). Similarly, the role of technological advancements in resilience-building has been examined by Junaaid, Zhang, Cao, and Luqman (2023), who explore the impact of supply chain integration and dynamic capabilities on healthcare organizations. Their findings suggest that resilient supply chains, bolstered by digitalization and predictive analytics, can enhance the capacity of critical infrastructure systems to respond to shocks and disruptions.

The built environment plays a crucial role in determining a community's resilience to disasters. Research on urban resilience has evolved significantly, with scholars debating whether the concept remains too vague or if it has matured into an actionable framework (Amirzadeh, Sobhaninia, & Sharifi, 2022). Efforts to integrate resilience into urban planning require a holistic perspective that considers climate adaptation, disaster risk reduction, and sustainable development simultaneously (Lin et al., 2021). Lin et al. (2021) emphasizes the necessity of integrated solutions, such as nature-based infrastructure, sustainable urban design, and climate-responsive policies, to address the growing challenges posed by climate change. Similarly, Tubridy, Lennon, and Scott (2022) explore managed retreat as a strategy for coastal climate adaptation, arguing that a coproduction approach—where government agencies, scientists, and local stakeholders collaborate—can ensure more just and effective relocation policies. However, the environmental justice implications of managed retreat must be carefully considered, as relocation can exacerbate social inequalities if not implemented equitably (Tubridy et al., 2022).

Infrastructure resilience also extends to critical systems such as energy, transportation, and water management. Reviewing qualitative research on critical infrastructure resilience, Cantelmi, Di Gravio, and Patriarca (2021) argue that an integrated approach is essential for ensuring the robustness of these systems in the face of extreme weather events. The need for sustainability in infrastructure planning is further underscored by McNamee and Meacham (2025), who advocate for a fire-resilient built environment. Their research highlights how proactive urban planning, coupled with advances in fire-resistant materials and early detection systems, can mitigate the growing risks associated with wildfires. Similarly, sustainability frameworks such as Sustainalism, proposed by Hariram, Mekha, Suganthan, and Sudhakar (2023), provide a socio-economic-environmental model that integrates resilience-building with broader sustainable development goals. By aligning infrastructure resilience with economic equity and ecological preservation, such models offer a balanced approach to long-term sustainability.

The role of governance and policy in shaping resilience outcomes cannot be overlooked. Public policy must be adaptive, responsive, and inclusive to effectively address climate-related risks (Suprayitno et al., 2024). Policy frameworks that incorporate community participation, cross-sector collaboration, and climate-responsive planning can significantly improve resilience-building efforts (Suprayitno et al., 2024). Graveline and Germain (2022) provide a historical analysis of disaster risk resilience, highlighting how the conceptual evolution of resilience has influenced policy decisions over time. They argue that contemporary resilience strategies must transcend traditional disaster response models and instead prioritize proactive risk reduction, long-term sustainability, and social equity. The integration of resilience into policy frameworks is further explored by Aktürk and Lerski (2021), who discuss the importance of intangible cultural heritage in shaping adaptive strategies. They contend that cultural identity and social cohesion can serve as resilience assets for climate-displaced communities, helping them navigate the uncertainties of relocation and adaptation.

An integrated approach to resilience and sustainability offers a pathway for addressing complex challenges in disaster-prone regions. By combining risk science, participatory governance, technological innovation, and sustainability-oriented business practices, communities can develop more adaptive and equitable resilience strategies. As the global climate crisis intensifies, resilience must be understood as a dynamic and multifaceted process—one that requires continuous adaptation, collaboration, and innovation across disciplines. Future research must continue to explore the synergies between social resilience, ecological sustainability, and economic stability to create holistic frameworks that empower communities to thrive amid uncertainty.

Resilience in Disaster-Preparedness and Climate Adaptation. The concept of resilience in disaster preparedness and climate adaptation is thus multifaceted, playing a crucial role in mitigating the impacts that natural hazards can put on the community and gradually changing them to adapt to growing threats from climate change (Mohtady Ali, Ranse, Roiko, & Desha, 2022). In a nutshell, resilience refers to the ability of individuals, communities, and systems to absorb, recover from, and adapt to adverse events such as floods, storms, droughts, and other environmental shocks.

The ability to survive disaster and recover is critical for protecting lives, livelihoods, and infrastructure, in vulnerable communities where climate-related risks are increasing. Survival in the immediate response is associated with resilience, while the capacity to adapt to changing conditions over a longer period is also crucial for sustainability (Zaman, 2021). One of the critical elements of disaster preparedness is the strengthening of social and institutional systems responsive to crises in case of disasters. Resilient communities have functional communication networks, early warning systems, and some mechanisms for

emergency response that allow them to respond rapidly during disasters (Mani & Goniewicz, 2023). These systems are supported by government agencies, NGOs, and local community organizations that can collaborate toward achieving rapid evacuation, shelter, and medical care in and after the event. Resilience also encompasses the development of disaster risk reduction measures aimed at mitigating hazard's impact. This includes investments in infrastructure that can withstand extreme weather conditions, such as flood-resistant housing, reinforcement of bridges, and protective levees (Uchiyama, Ismail, & Srevenson, 2021). This, according to the development literature, requires communities to detect future environmental changes and act proactively in modifying their practices, infrastructure, and policies to reduce vulnerability (de Murieta, Galarraga, & Olazabal, 2021). Some examples of climate adaptation measures could be diversification of agricultural practices to change over with changing weather conditions, water conservation schemes to handle drought, or management systems at the coast to adapt with the changed elevation as a result of sea-level rise (Kim, Mannetti, Iwaniec, & Grimm, 2021). These adaptive strategies are focused on the mitigation of longer-term climate change risks by equipping communities with their ability to better prepare for this new environmental landscape. Creating adaptive capacity is about factoring in climate risk into planning decision-making processes so that any development project planned to take place in the future is more resilient and will not be adversely affected by impacts of climate change (Yang, Keating, & Sourn, 2024).

Another factor in disaster preparedness resilience is local knowledge and community participation. In most vulnerable regions, communities have developed indigenous knowledge systems that help them cope with environmental challenges (Schweikert & Deinert, 2021). Local knowhow in traditional resource use, traditional preparedness for seasonal weather patterns, and skills for disaster response have been passed down from generation to generation. Such knowledge has to be considered while learning about prevention and adaptation in the context of disasters and climate, as contextually relevant and culturally appropriate solutions must be assured (Rani, Kamarudin, & Razak, 2020). As long as communities are involved in designing and implementing measures, they will be more likely to embrace resilience-building.

Economic resilience is the fourth essential component for disaster preparedness and climate adaptation. Disaster loss ruins local economies-besides killing businesses and infrastructure-also livelihoods, taking long years before the affected population returns to the economy (Su, Chang, & Pai, 2022). Building economic resilience becomes a critical task involving diversification of sources of income, providing safety nets for vulnerable sections, and investments in infrastructure designed to be safe from disasters (Gaborit, 2022). For instance, a farming-dependent community would have to switch to climate-resilient crops or income sources that are not as vulnerable to economic impacts. Access to financial services, such as insurance and credit systems, can help individuals to recover quickly after the disaster so that they could rebuild and regain their livelihoods (Busayo & Kalumba, 2021). Psychological resilience is also key in disaster preparedness and climate adaptation. Such a disaster can have devastating emotional and psychological impacts, particularly for people who might have lost family members, houses, or their source of income. Psychological resiliency building can be appreciated through mental health support to individuals while attaining the sense of community cohesiveness and solidarity (Dookie & Osgood, 2021). People who feel part of their community and who are given emotional support will better cope with the stress and trauma associated with disasters. Programs that emphasize social inclusion and mental health and emotional well-being are important for building psychological resilience in individuals and communities (Ruble, Bills, Sorensen, & Lemery, 2021).

Disaster preparedness-related resilience also depends on the learning experiences about past events and how to change these practices or actions. In the aftermath of a disaster, communities and governments conduct after-action reviews and determine what was done wrong and how to do better regarding response (Rockloff, Anderson, Burton, & Terry, 2024). This would be important in building resilience as it enables communities to discover weaknesses in their preparedness systems, thus offering room for necessary adjustments to reduce potential consequences in the future. Building resilience through this call for a higher degree of flexibility and adaptability since each disaster offers new lessons and insights that would be put into use in the course of future preparedness.

Technological innovation continues to play a more fundamental role in enhancing resilience to disasters and climate change. Developments in early warning systems, satellite monitoring, and predictive modeling enable the presumption of high accuracy in anticipating the possibilities of disasters and thus provide communities with more time to prepare for them (Eslamian & Eslamian, 2023). Through such technologies as mobile communications, drones, and renewable energy sources, improvement may be possible in disaster response efforts and support adaptation measures. Numerous persons can be saved during a disaster by mobile apps with real-time updates on weather conditions and evacuation routes, while solar-powered water pumps may be relied upon for community adaptation to drought conditions (Ngcamu, 2022). There is an urgent need for incorporating these technologies with disaster-preparedness and adaptation strategies to enhance resilience in the context of growing environmental risks. Even government policies or international cooperation will have significant roles in large-scale building of resilience. National governments can, of course, make regulations, provide funds, and coordinate the efforts that take place across regions. International organizations, like the United Nations and the World Bank, assist by providing technical expertise and financial assistance coupled with a framework for disaster risk reduction and climate adaptation (Alibasic, 2022). A solid proof of the resilience of communities, especially in resource-constrained developing countries, would be needed at the global, national, and local levels supported by effective policies that advance disaster risk reduction, climate adaptation, and sustainable development-all integrating resilience building as part of broader national and global agendas.

Finally, resilience in disaster preparedness and climate adaptation is always an ongoing process since it requires continuous effort and investment. Evolving threat, climate change will make the frequency and severity of disasters more common in the future. Building resilience is not a one-year project but a long-term commitment towards protecting communities and preparing them for tomorrow. That requires sustained funding, political will, and collective commitment to act at the root causes of vulnerability-breadth poverty, inequality, and environmental degradation. By building resilience, communities can survive disasters but come out stronger and more prepared to face the calamities that await them.

Sustainable Relocation and Resettlement Practices. There is growing recognition of sustainable relocation and resettlement as important components of population displacement because of environmental hazards, natural disasters, and the consequences of climate change. Climatic change and global warming raise this danger with increasing force, putting vulnerable communities-at-risk-exposed groups who normally inhabit low-lying coastal areas, flood-prone regions, and other environmental hotspots (Xu, Pittock, & Daniell, 2022). These communities have to be addressed through thoughtful, long-term strategies, considering the fact that relocated populations not only survive but also thrive in the new environments. Well-designed social, economic, and environmental approaches assure sustainable

relocation, maximizing resilience and welfare of affected populations while minimizing harm to the environment (Bower, Badamikar, & Wong-Parodi, 2023).

This is one of the underpinning principles of sustainable relocation: engage communities being relocated in the decision-making process. Because relocation involves leaving homes, livelihoods, and cultural ties, it is traumatic. Involving affected populations in the planning and implementation processes about relocation is also essential in making relocation strategies successful (Otsuki, 2021). Proactive engagement of communities would be helpful for planners to obtain a better sense of local needs, cultural considerations, and challenges when developing more balanced and contextually appropriate relocation strategies (Downing, Shi, & Zaman, 2021). This approach creates an element of ownership and cooperation, which is one of the significant determining factors for the long-term sustainability of resettlement efforts.

Environmental sustainability in relocation practices is also crucial in this regard. Lack of proper planning in resettlement projects may generate environmental degradation at either the origin or destination areas, thereby increasing vulnerability among relocated communities (Bergmann, 2021). Sustainable resettlement has the aspect of a new settlement that takes environmental considerations into account. This could be the consideration of sites that avoid the same hazards which occasioned the original displacement. Furthermore, the resettlement site should be constructed using sustainable building practices to include renewable sources of energy, sustainable water management as well as other material used to be environmentally friendly (Garakani, Lak, & Niyasati, 2020). Green infrastructure can importantly contribute to the sustainability of new communities by controlling their ecological footprint and ensuring that they are resilient to the future environmental challenges.

Economic sustainability is also pertinent to relocation and resettlement. Relocation frequently disrupts the local economy through the absence of people who otherwise would have gone about their traditional livelihood, such as farming, fishing, or small-scale trading (Cilali, Barker, & Gonzalez, 2021). Any successful relocation strategy must be directly complemented by economic self-sufficiency for the relocated populations in their new homes. This would include retraining programs, credits and financial services where possible, and job opportunities in viable sectors of the locality (Johnson, Jain, & Lavell, 2021). It also entails a tremendous investment in the local infrastructure of, for instance, schools, healthcare facilities, and markets to support the economic and social welfare of the community.

Displacement from one's homestead is not merely about redistributing people to a new location but rather an essential component of sustainable relocation practices. Often, people relocated to a new location often find it difficult integrating with the host community or adapting to the new social and cultural environment (Beier, Spire, & Bridonneau, 2021). An essential aspect in ensuring the well-being of such people would be that relocated populations can preserve their social network, cultural practices, and identity. Activities like community-building programs, cultural exchanges, and inclusive governance structures that have a potential to prevent conflict can promote good relations between relocated and host communities (Zaman, Nair, & Guoqing, 2021). This too should be preserved as part of the culture of the people since it makes the psychological trauma experienced by them due to forced removal even worse. Relocation practices that are sustainable should consider the details of long-term impacts on human health and well-being. Stress and uncertainty of a dislocation may negatively affect the physical and mental health of displaced persons, as well as poor conditions in transitional shelters or new settlement areas (Forsyth & Peiser, 2021). It is therefore important that the health and resilience of relocated communities are supported through ensuring access to proper health care, safe water, sanitation, and nutrition. Another important

factor is mental health support services to individuals and families, which will help them cope with relocation and resettlement problems due to emotional and psychological factors. In addition, public health infrastructure in areas of resettlement should be built with both the relocated and host populations in mind (Silva & Ballinger, 2021).

Land use and tenure are also critical issues in the context of successful sustainable relocation efforts. Many of the resettlement sites are on land that is contested, or rights to land tenure are blurred (Luchi & Mutter, 2020). Thus, secure land tenure on return is a base foundation for economic and social stability in relocation populations. This means not only legal recognition of land ownership or the right to its use but that the resettlement process does not infringe upon the rights of host communities and thus does not bring about potential conflicts over land and resources (Wu, Zhang, & Yang, 2023). Clear and fair policies over land, created with consultation between all stakeholders, will guard against future disputes and ensure relocated communities can reconstruct their lives on their new grounds as secure and productive as possible.

Relocation efforts also depend on effective governance and coordination between various actors. Most of the time, relocation and resettlement will require the involvement of many levels of government, international organizations, NGOs, and local communities (Lauer, Delos Reyes, & Birkmann, 2021). Coordination among these actors would therefore be crucial in ensuring that relocation projects are properly thought out, adequately funded, implemented on time, and undertaken cost-effectively. Sustaining long-term management structures of resettlement areas to include services, infrastructure, and addressing disputes arising in the resettlement process entails a lot (Rogers & Wilmsen, 2020). It calls for leadership, with transparent, accountable, and responsible decision-making processes.

Monitoring and evaluation are essential components in sustaining relocation and resettlement. Relocation is a very complex process spanning over several years and for this reason, the effects of resettlement projects should be checked periodically to know if they are in line with their intended objectives (Sharma, 2022). Monitoring allows detection of any problems or issues that may crop up in the course of resettlement such as lack of infrastructural development, lack of economic opportunities, or social tensions. The evaluation of the resettlement outcome also gives better insight into what works and what doesn't, thus continuously improving the relocation approach. Involving relocated communities in the monitoring process can also provide valuable feedback and ensure that their voices are heard throughout the implementation of the project. Sustainable relocation does not mean the mere physical movement of people from one location to another; it means making communities robust and resilient in adversity (Lin & Yao, 2023). The ultimate measure of success of any relocation effort depends upon making some or the other attempt to deal with complex social, economic, and environmental issues arising in the process. These best practices allow sustainable relocation to rebuild the lives of evacuated populations in equitable, environmentally sound, and economically viable ways. Sustainable relocation forms an essential tool for battling the surging displacement challenges emerging from climate change and other environmental hazards (Schopp, 2020).

Fourth, prudent relocation and resettlement practices have to be adaptive. Climate change continues its journey in evolution, and new risks start bursting in views, while relocation efforts have to remain in-step with the growing horizon of the environment. Ongoing research, innovation, and pertinent sharing of best practices across regions and countries will help ensure relocation efforts never get any less conversational. In as much as sustainable relocation practices are continually learned from past experiences, adapting and

considering new challenges, they can play a very key role in ensuring the long-term resilience of vulnerable communities and protecting them from future displacement.

Community Participation and Stakeholder Engagement in Relocation Planning. Participation and engagement of stakeholders in communities, therefore, are central to relocation planning in situations where removals of communities are necessitated by external threats such as natural disasters or climate change. As a process, relocation is complicated; it interferes with the lives, economies, and social structures (Kim, Newman, & Jiang, 2020). If people are not directly involved in relocation, it may fail or even increase the vulnerabilities of the communities it tries to relocate. Positive community and other key stakeholders' participation at planning, decision-making, and implementation phases is one way of ensuring that the needs, concerns, and aspirations of those being relocated are well addressed and, hence lead to the attainment of more sustainable and equitable outcomes (Campbell-Arvai & Lindquist, 2021). A participatory approach helps to engender a feeling of ownership and responsibility within the community. There is a strong likelihood that people will be supportive and participate more in the relocation process if they have had some say in the decisions that directly affect their lives. This remains very important in the long term, because relocation in the sustainable sense should not only deal with physically moving people but also setting up new communities that are socially and economically viable (Hui, Chen, Lang, & Ou, 2021). Through participation, community members become proprietorial about maintaining and enhancing their new surroundings, allowing the resettlement site to evolve in ways that surface and meet the needs of the community over time.

Community participation also ensures that social and cultural ties important for resilience in the event of displacement are maintained. Displacement may also break social cohesion due to the fact that people are often forced to be relocated from their original homes, taking them far from extended family members and community support structures; this can be fixed by involving communities in the planning process (Goodman, Zwick, & Spicer, 2020). Thus relocation efforts may be planned for maintaining or replicating those networks. For instance, planners might consider relocating whole communities together, rather than dispersing individuals and families to different sites. This maintains the social fabric of the community and allows access to mutual support systems, which are required for adaptation and recovery (Hugel & Davies, 2020). Relocation plans also require stakeholder engagement, which is essential because any resettlement effort will only be successful if the concerned and various actors are involved. These stakeholders may include local and national governments, NGOs, private sector corporations, international organizations, and academic institutions (Salvioni & Almici, 2020). These actors bring along with them different resources, expertise, and perspectives to the table and are important in giving form to the solution for the broad range of challenges that can result from relocation. For example, land acquisition and legal frameworks for resettlement may be roles for government agencies, while technical support, social services, and advocacy may be rendered by NGOs (Chan, Marzuki, & Mohtar, 2021).

Relocation efforts also depend on the private sector, for instance, to build infrastructure and provide economic opportunities to relocated populations. The engagement of businesses and investors with the resettlement planning would lead to new resettlement sites being integrated into regional economies and accessing goods, services, and jobs that are necessary for sustainability (Scott, Lennon, Tubridy, & Marchman, 2020). Public and private sector collaboration can also be the source of innovative ideas, such as partnerships between the public and private sectors in designing low-cost, environment friendly housing in resettlement sites or upgrading green infrastructure that mitigates the negative environmental effects of resettlement (Daniel & Kim, 2020).

Pooling resources and knowledge is one of the most significant benefits of stakeholder engagement. Resettlement is expensive and logistically daunting, and no single actor can alone attend to all the complexities involved (Akbar, 2021). In such situations, the input of various stakeholders can therefore be used whereby planners leverage the insight and knowledge each group holds for the successful creation of relocation plans that are holistic and effective. For instance, academic institutions may provide research documents on climate risks and sustainable development as international organizations may provide funding, besides offering examples of best practices from other location projects worldwide. Collaboration can also enhance coordination of efforts and subsequently reduce duplication while maximizing the efficient use of available resources.

The effective management of stakeholder interests also includes transparency and accountability in decision-making processes. Often, relocation becomes a sensitive political matter, especially through land acquisition or displacement of subordinate groups. As such, making aware of all involved stakeholders about the aims, processes, and outcomes of relocation planning builds trust and legitimacy (Wehn, Collins, & Anema, 2020). Clear communication and establishing formal mechanisms for both feedback and dispute resolution should be very critical in enabling issues or conflicts that may arise during the process and this communication is essential to voice out even vulnerable groups like women and the indigenous people, elderly, who may be not included in the planning process (Levenda, Keough, & Rock, 2020). Community participation and stakeholder involvement should be considered as an ongoing process rather than being limited to just the planning stage. However, relocation is neither an action that is undertaken once and for all nor without change. Over the years, there can be many quite significant challenges and opportunities arising there; consultation has to be maintained regularly with relocating communities and relevant stakeholders to identify emerging issues which may include gaps in services or infrastructure, existing social tensions, and environmental risks within the new location (Kujala, Sachs, & Leinonen, 2022). Communication and cooperation for example, therefore, means that planners will be in a position to change towards ensuring that relocated communities adapt and settle well after some time.

Community participation and stakeholder involvement are crucial elements of successful relocation planning. Such involvement will ensure that relocation efforts are sensitive to the needs of affected people and better positioned to face emerging challenges. At the same time, this will ensure that such relocation efforts are sustainable and equitable. Moreover, it will empower communities not just to take charge of their own resilience but also to participate in taking control of their futures in the face of displacement.

Synthesis

In search of a proper look at such climate-induced displacement, relocation of communities has to be followed by some kind of integrated approach that has dimensions both in terms of social and economic viability as well as environmental responsibility. Relocation due to the new trend of climate change should not just make it a physical exercise of moving away from the place of current threat from natural calamity only, rather resilience in the relocation strategies often needs to be interwoven with sustainability to have long-term solutions towards better resolution of displacing communities. This synthesis discusses the integration of multiple concepts and practices that offer an integral comprehension of relocation strategies, such as resilience building, sustainability, and community involvement. Resilience is therefore a critical component in addressing displacement caused by climate-related disasters. The community must be resilient and have the ability to absorb shocks, recover, and adapt to continuous environmental changes. This has seen research on resilience focusing more on the factors of assembling a strong network of social

capital, productive economic opportunities, and psychological support systems as critical bases to work with when helping communities work through their displacement. Relocation calls for conceptualizing resilience as something more integrated than infrastructural structures-only but as addressing the deeper social and emotional needs of communities. These are crucial aspects to making sure populations dislodged from their homes live, rather than mere survival in a new place.

The long term success of any relocation strategy is also reliant on the strategy's sustainability. Social, economic, and environmental consensus is required in sustainable relocation practices. For instance, relocated communities need access to livelihoods that not only pay for local economies but serve them economically and yet are responsible for the environment. Housing and infrastructure have to be constructed in ways that mitigate environmental impacts but are equally strong enough to last long and still be habitable. Making sure that relocation is pursued with sustainability principles means that it is not merely a temporary palliative but can serve as a foundation for a future that reduces risks and vulnerabilities. Relocation planning integrates sustainability by making a shift from reactive to proactive strategies. Traditional strategies on displacement mostly concentrate on short-term emergency responses to ensure the populations' immediate safety rather than long-term results. Recent literature, however, presents the imperative need for forward-looking strategies that can facilitate strategies for handling future challenges such as rising sea levels and extreme weather conditions and resource depletion. Meaningful community participation ensures that communities are better prepared to adapt to future environmental changes as they are factored into planning and the execution of relocation with sustainable practices; thus, reducing their vulnerability to future displacements.

Relocation efforts towards building resilience and sustainability without meaningful community participation cannot be accomplished. The dislodged communities have valid inputs on their peculiar needs and conditions, and community involvement in the relocation process will make the relocation policy more relevant and effective. Various studies suggest that when the community is involved in relocation planning, the outcome has been better because of increased cohesion and satisfaction within the group and for longer duration. This participatory approach is helpful in developing relocation solutions that are both technically sound and culturally appropriate and socially equitable.

Community participation in relocation helps develop a feeling of ownership and empowerment. That is, if communities are involved in shaping their future, they are likely to take forward-looking steps toward adaptation to new environments and challenges. Such empowerment would be very crucial to the vulnerable sections who feel marginalized or helpless in the face of displacement. Since their voice would resonate with those in policy making positions, resilience would begin to build from within as any solution developed would be sustainable and align with the aspirations of people they serve.

Moreover, engaging communities helps relocation strategies that are culturally sensitive and contextually appropriate. Apart from the physical displacement itself, there is usually dislocation of relations with social networks, cultural practices, and even livelihoods. Such significant issues are normally overlooked in dislocation strategies where only marginalization will be enhanced or further destitution created among relocated individuals. By engaging communities in planning, policymakers may arrive at solutions that are both respectful of the existing local cultures and traditions and responsive to some of the economic and environmental problems entailed in a policy of displacement.

One common problem with relocation is social cohesion and identity in a community being lost. Displacement can break social relationships, leaving individuals alienated and cut off from their networks of support. Research reveals that the secret to effective relocation is keeping or acquiring a new social

network in a city. This calls for careful planning of the relocation sites in ways that foster community interaction, group decision-making, and cultural continuation. Social resilience in relocation policies allows displaced populations to retain an element of identity and belonging even amid intense dislocation. Economic stability is another recipe that should be included in any relocation process. The displaced often struggle to gain a livelihood, especially where the main relocation sites are inaccessible to markets and resources or to work opportunities. Thus, relocation and sustainability strategies must emphasize aspects of economic resilience-giving resettled groups access to employment, skills building, and overall economic opportunity. All this improves the short-term living standards of dispersed individuals but goes toward ensuring the long-term sustainability of the community. Through economic resilience, it makes the community self-reliant, reducing its dependency on external aid, therefore, bringing a sense of power to them. Another environmental consideration is the sustainability of the relocated site. Climate change has indicated that any resettlement strategy should take into consideration the environmental aspect of new settlements as it would require dealing with the factors like usage of water and energy, waste management, and land conservation. Sustainable relocation processes need to achieve ecologically responsible communities with the ability to reduce ecological footprints while maximizing the use of renewable resources. Beyond their environmental friendliness, such communities have a lesser potential risk exposure to future environmental hazards.

Resilience and sustainability together in relocation processes present some central challenges of coordination. Successful relocation in process integrates all stakeholders of government, the non-governmental organizations, the private sector actors, and the local communities. These stakeholders have unique resources, expertise, and perspectives regarding relocation strategies and effective strategies depend on mobilizing such diverse contributions in a coordinated manner. The multi-stakeholder collaboration literature above supports these facilitators, including clear communication, shared goals, and mutual accountability, which ensures relocation success.

Stakeholder involvement is critical in attaining the financial and technical resources needed for sustainable relocation. Relocation operations are very expensive and require a lot of resources, especially in infrastructure, housing, and services. Involvement of stakeholders in initial stages of planning ensures that the required resources are mobilized and the relocation strategy applied can be sustained over a long time. Financial sustainability concerns the possibility of only partially achieving or not at all satisfactory outcomes from under-resourced displacement efforts, which often leaves vulnerable people at a higher risk for further displacement or adversity in the future. The combination of these components – resilience, sustainability, and community engagement – therefore provides a general framework for understanding climate-related displacement challenges and opportunities. Relocation cannot be a one-size-fits-all solution, but rather each community has its needs and circumstances, making relocation complex and context-specific. Instead of having relocation strategies without notions of resilience and sustainability, policymakers will know that displaced populations would then have far more strength in the face of future challenges in their new environment. In the broad approach, it is realized that relocation is not a relocation of people from one place to another, but rather the final creation of conditions for long-term stability, well-being, and sustainability.

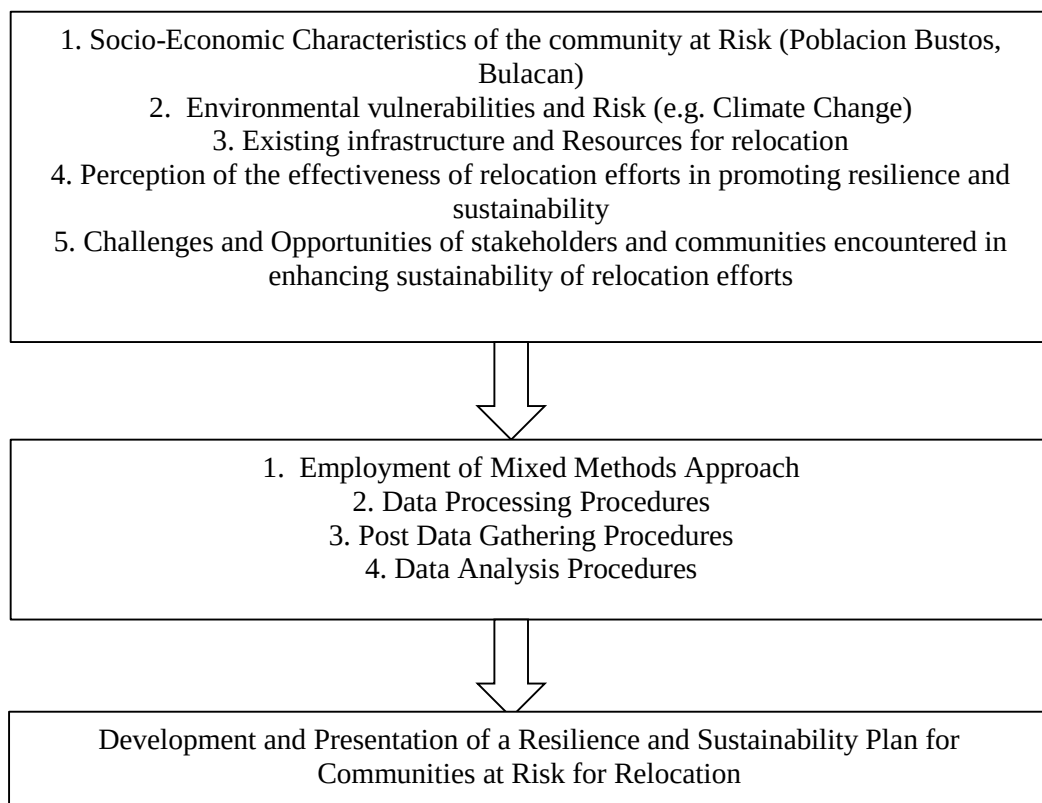
Finally, this synthesis asserts the need for an active, proactive relocation policy. The threat of climate change is dynamic and constantly evolving, and its strategies must be crafted with an eye toward the future. With the involvement of resilience building, sustainable development, and community engagement in the planning process, policies can be developed for relocation solutions that are adaptable, flexible, and

responsive to future challenges. The result will ensure that displaced communities not only survive but thrive amidst adversity, finding their ways through uncertain futures with the help of tools and resources needed to do so.

Conceptual Framework

After the review of related studies and consideration of different literatures, the following conceptual framework will be used.

Figure 1
Research Paradigm



The study "Integrating Resilience and Sustainability: Relocation Approach for Communities at Risk in Poblacion, Bustos, Bulacan" followed a flowchart that methodically guided the research from data gathering to the development of a thorough relocation plan. During the first phase, the researcher collected necessary data sets to fully grasp the state of the community and its relocation issues. These inputs helped to evaluate the vulnerabilities of the at-risk population by including socio-economic traits, including income levels, employment position, education, and service access. To grasp the urgent need for migration, the study also gathered data on environmental concerns, particularly those connected to natural disasters and climate change. Moreover, studied were current infrastructure and resources accessible for relocation to assess their sufficiency and possible sustainability. The views of community members and stakeholders on past relocation initiatives were investigated to determine their efficacy in fostering resilience. Challenges and possibilities faced by the community and engaged stakeholders were also noted to help clarify elements supporting or impeding long-term success.

In the next stage, the researcher employed a mixed-method approach, combining both quantitative and qualitative strategies to ensure a balanced and in-depth investigation. Surveys, interviews, and focus group discussions let the researcher gather both statistical patterns and nuanced viewpoints. Processing the data, the researcher made sure it was methodically categorized, cleansed, and coded for consistency and dependability. Member checking and triangulation, among other post-data gathering techniques, helped to confirm the results and guarantee they represented the participants' lived experiences. The researcher aimed to provide a data-driven yet context-sensitive knowledge of the relocation situation by means of statistical analysis and thematic interpretation.

The output of the study was the development and presentation of a Resilience and Sustainability Plan for communities at risk of relocation in Poblacion, Bustos, Bulacan. Being the researcher, I set myself not just as an academic observer but also as a supporter of community-centered and participatory planning. I thought that attempts to move should target long-term sustainability, social cohesion, and restoration of livelihood as well as physical transfer. The last strategy showed this viewpoint by providing strategic advice combining socioeconomic growth, environmental adaptability, and inclusive governance. It was a tool for empowering communities to be active agents of their own resilience and a policy guide for decision-makers. By means of this study, I hoped to provide a useful, people-oriented framework that might be modified by other at-risk communities confronting the same difficulties.

Statement of Purpose

Communities in climate-vulnerable areas such as Poblacion, Bustos, Bulacan, face increasing risks of displacement due to environmental hazards. Gaps remain in understanding the effectiveness of these efforts in fostering resilience, especially in terms of stakeholder involvement, infrastructure support, and the integration of cultural and social dimensions of displacement.

Specifically, this study aimed to answer the following questions:

1. What are the effective ways that promote community engagement and the integration of local knowledge in the relocation process in terms of:
 - a. Stakeholder involvement:
 - b. Decision-making processes:
 - c. Access to relevant information:
 - d. Participation in relocation planning: and
 - e. Consideration of cultural sensitivity and respect in relocation policies?
2. How may the socio-economic and environmental impacts of existing relocation strategies be described in terms of:
 - a. Income stability:
 - b. Employment opportunities:
 - c. Environmental conditions:
 - d. Access to basic services such as water, healthcare, and education: and
 - e. Effectiveness of post-relocation support in facilitating long-term adaptation?
3. How do community members perceive the effectiveness of relocation efforts in promoting resilience and sustainability, based on their lived experiences?
4. What challenges and opportunities do stakeholders and communities encounter in enhancing the sustainability of relocation efforts?

5. How may the findings of this study contribute to the development of a Community Relocation and Displacement Plan that may strengthen resilience and ensure the sustainability of relocated communities?

Scope and Delimitation

This study focused on examining the integration of resilience and sustainability into relocation efforts for communities at risk, with a specific emphasis on Poblacion Bustos, Bulacan. The scope includes analyzing socio-economic characteristics, environmental vulnerabilities, existing infrastructure, and stakeholder involvement to develop a Community Relocation and Displacement Plan. The study assessed the effectiveness of current relocation strategies in promoting long-term stability, environmental adaptation, and social well-being. It evaluated best practices in community engagement, decision-making, and access to information, as well as the socio-economic and environmental impacts of relocation. Additionally, the study considered community perceptions of relocation efforts, identifying strengths and areas for improvement. By incorporating cultural sensitivity, respect for local traditions, and post-relocation support, the research ensures that relocation policies align with the needs and identities of displaced communities.

The research is limited to the case of Poblacion Bustos, Bulacan, meaning its findings may not be fully generalizable to other disaster-prone regions with different socio-economic, environmental, or governance contexts. While the study incorporated diverse perspectives from community members, stakeholders, and policymakers, it did not include a longitudinal assessment of relocation outcomes over extended periods. The evaluation of relocation efforts is based on existing policies and the experiences of affected residents, which may be influenced by subjective perceptions and recent events. To address potential biases, multiple sources of data, including surveys, interviews, and document analysis, were used to triangulate findings and enhance reliability.

Another limitation of the study is the reliance on self-reported data, which may be affected by recall bias or personal viewpoints. While efforts were made to ensure participant diversity, the sample size may not capture all variations in community experiences. Furthermore, due to logistical constraints, this study did not conduct experimental interventions or pilot-test relocation strategies in real-time. Instead, it provided a theoretical framework and policy recommendations based on empirical data, which served as a guide for future implementation.

Despite these limitations, this research contributes valuable insights into the intersection of disaster risk reduction, urban planning, and sustainable development. By identifying challenges and opportunities, the study provides practical recommendations for improving relocation policies and strengthening community resilience. It serves as a foundation for further studies that can expand on its findings through comparative analyses, policy evaluations, and long-term impact assessments.

Significance of the Study

This study holds considerable importance as it offers practical and sustainable relocation strategies for vulnerable communities in Poblacion Bustos, Bulacan. Using the integration of resilience and sustainability, valuable insights are provided for enhancing disaster response and facilitating long-term planning. The results are intended to bolster local initiatives and enhance overarching strategies related to climate adaptation and the mitigation of disaster risks. This paper is significant for the following group of individuals:

Academics and Researchers in Disaster Risk Reduction and Sustainability. This study contributes to the growing body of literature on disaster risk reduction, sustainable development, and urban planning. Academics and researchers in these fields can benefit from the study's comprehensive approach to examining relocation efforts through a resilience and sustainability lens. The study expands theoretical discussions by bridging socio-economic, environmental, and governance perspectives in analyzing relocation strategies. By aligning its research problems with the conceptual framework, this study ensures a methodologically sound approach that future researchers can build upon. The findings provide empirical data that can be used for comparative studies, particularly in understanding how different communities respond to relocation in various socio-political and environmental contexts. This study also highlights gaps in existing relocation research, identifying areas that require further investigation, such as the long-term socio-economic integration of displaced populations. Moreover, the study's insights into stakeholder involvement and participatory governance can inform future research on inclusive disaster risk management practices. By contributing to academic discussions on climate adaptation and sustainable urban development, this research lays the groundwork for more effective and community-centered relocation policies.

Community Members at Risk for Relocation. This study is particularly significant for communities in Poblacion Bustos, Bulacan, who are vulnerable to displacement due to environmental risks and socio-economic challenges. Relocation often presents significant hardships for affected residents, including the loss of livelihoods, social networks, and cultural ties. By examining the integration of resilience and sustainability into relocation efforts, this research seeks to identify ways to improve the overall relocation experience for these communities. The study emphasizes the importance of participatory planning, ensuring that relocated individuals have a voice in decision-making processes. By exploring post-relocation support mechanisms, this research aims to provide insights into how displaced families can be better assisted in rebuilding their lives. Furthermore, the study highlights the necessity of incorporating cultural sensitivity and respect into relocation planning, ensuring that the traditions, values, and unique identities of communities are preserved despite geographical displacement. By addressing these concerns, this research contributes to the development of policies and frameworks that prioritize the well-being, dignity, and long-term stability of relocated communities.

Policymakers and Urban Planners. The findings of this study are crucial for policymakers, urban planners, and government agencies responsible for designing and implementing relocation programs. Many existing relocation efforts focus primarily on the physical movement of communities without adequately considering the long-term sustainability and resilience of the resettled populations. This research provides empirical evidence on best practices for integrating resilience and sustainability into relocation policies, offering a structured framework that decision-makers can adopt or adapt. The study's emphasis on stakeholder participation, socio-economic stability, and environmental adaptation ensures that relocation plans are not merely reactive solutions to immediate displacement but proactive strategies for long-term community development. The inclusion of cultural sensitivity and post-relocation support in the analysis provides policymakers with critical insights into how to make relocation more inclusive and effective. Additionally, by assessing the challenges and opportunities faced by relocated communities, this study can guide legislative and administrative reforms that promote equitable and just relocation policies. It serves as a valuable resource for local and national governments in improving disaster risk reduction strategies and ensuring that relocation efforts align with broader goals of sustainable development.

Non-Governmental Organizations and Humanitarian Agencies. Organizations involved in disaster response, humanitarian aid, and community development will find this study valuable in enhancing their relocation support programs. Many NGOs and international agencies focus on providing immediate relief following climate-related disasters, but long-term relocation efforts often require sustained interventions to ensure affected populations can rebuild their lives. This study provides evidence-based recommendations on how NGOs can integrate resilience and sustainability into their initiatives, moving beyond short-term assistance to comprehensive, community-driven solutions. By highlighting the role of participatory planning and stakeholder engagement, the research underscores the importance of working closely with displaced communities to design relocation strategies that align with their needs and aspirations. The findings can help NGOs refine their advocacy efforts, pushing for policy reforms that prioritize equitable and just relocation frameworks. Additionally, the study's emphasis on post-relocation support offers insights into how humanitarian organizations can develop programs that facilitate economic opportunities, social cohesion, and environmental sustainability in resettled communities. Through these contributions, the research aids NGOs in strengthening their role as key facilitators in sustainable and resilient community development.

Definition of Terms

For a better understanding of the study, the following terms are operationally defined.

Access to Relevant Information. Access to relevant information refers to the extent to which affected communities were able to receive timely, accurate, and understandable information about relocation plans, risks, timelines, available support, and their rights. In this study it measured the availability and clarity of communication channels between authorities and residents.

Community Engagement. Community engagement is the process of involving community members in decision-making, planning, and implementation activities that affect their lives. In the relocation context, this means involving local residents, stakeholders, and leaders in discussions around the planning and management of relocation efforts. Effective community engagement ensures that relocation strategies are tailored to meet the community's needs, enhance ownership and acceptance, and foster a sense of collaboration and trust among stakeholders, leading to more successful and sustainable relocation outcomes.

Community Relocation. Community relocation refers to the planned, organized, and permanent migration of residents from high-risk areas in Poblacion Bustos, Bulacan, to safer sites in reaction to climate-related concerns like as flooding and land instability. It includes the actual movement of individuals as well as the offering of suitable housing, infrastructure, job opportunities, and social services to assist their long-term resettlement and integration.

Consideration of Cultural Sensitivity and Respect in Relocation Policies. This term refers to how well relocation policies and practices recognized and respected the traditions, beliefs, social structures, and way of life of the affected communities. It measured the degree to which cultural values were preserved and integrated into planning, site design, and support services.

Cultural Sensitivity. Cultural sensitivity refers to the consideration and respect for the beliefs, practices, social norms, and values of the displaced community in both the planning and implementation of relocation strategies. Its evaluation is based on how well relocation operations follow community customs, maintain social cohesiveness, and involve people respectfully and inclusively.

Decision-Making Processes. Decision-making processes refer to the series of steps and actions through which stakeholders, particularly community members, local government units, and partner organizations, collaborate to plan and implement relocation efforts. This includes how decisions were made, who was involved, and how transparent and inclusive these processes were.

Disaster Preparedness. Disaster preparedness involves the proactive planning, measures, and resources put in place to reduce the impacts of potential disasters on communities. It includes risk assessment, community education, resource allocation, and the establishment of emergency response protocols. About relocation, disaster preparedness helps communities be better equipped to handle and respond to environmental hazards, minimizing loss and supporting a smoother relocation process.

Preparedness fosters resilience by empowering communities with the skills, knowledge, and resources needed to face emergencies effectively.

Displacement Plan. A displacement plan is a systematic, pre-established set of policies and procedures created to control the movement of communities from hazard-prone regions like Poblacion Bustos. It covers timetables, logistics, communication plans, temporary and permanent resettlement provisions, community profiling, risk assessments, and more. The strategy is assessed on how well it minimizes disturbance, guarantees safety, and enables seamless transitions for affected residents.

Environmental Impact. Environmental impact refers to the changes to the natural environment that occur due to human actions, including relocation projects. This can include alterations in land use, water resources, biodiversity, and local ecosystems. Assessing environmental impact is crucial in planning sustainable relocation efforts, as it helps to mitigate potential damage to the new environment and ensures that relocation does not result in unintended ecological degradation. Sustainable practices are integral to minimizing environmental impacts, fostering harmony between relocated communities and their new surroundings.

Employment Opportunities. Employment opportunities refer to the availability and accessibility of sustainable and resilient livelihood options for relocated individuals or households in Poblacion, Bustos, Bulacan. This includes formal and informal jobs, skills-based work, self-employment, and community-based enterprises that are directly or indirectly facilitated by the relocation program. It will be measured through indicators such as employment rate, income level, job stability, skill match, and access to livelihood support services post-relocation.

Income Stability. Income stability is the ability of relocated people or families to sustain or enhance their financial security and sources of livelihood after displacement. Indicators include job continuity, access to livelihood programs, affordability of living in resettlement locations, and lowering of economic vulnerability post-relocation help to define it.

Policy Recommendations. Policy recommendations are proposed courses of action or guidelines designed to address specific issues or improve processes. In the context of relocation, policy recommendations provide guidelines for creating effective and sustainable relocation strategies, drawing on best practices and research insights. These recommendations can help local governments, NGOs, and other stakeholders implement relocation projects that enhance community resilience and sustainability. Well-crafted policy recommendations are based on empirical data and stakeholder feedback, ensuring that they address real needs and challenges within the relocation process.

Relocation. Relocation is the process of moving individuals, families, or communities from one place to another, often due to environmental hazards, natural disasters, or development projects. It is a critical component of disaster management strategies when communities are at risk in hazardous locations.

Relocation efforts require careful planning to address housing, socio-economic conditions, and cultural adaptation for relocated populations. Sustainable relocation aims to provide not only safe and stable environments but also opportunities for growth and development, allowing communities to rebuild and adapt effectively.

Resilience. Resilience refers to the ability of individuals, communities, and systems to withstand, adapt, and recover from adverse conditions, such as natural disasters, environmental changes, and socio-economic challenges. In the context of relocation, resilience encompasses strategies that enable displaced communities to not only survive immediate displacement but to thrive in their new environment. Resilience involves adaptive measures, community engagement, and sustainable practices that help communities handle future disruptions effectively, ensuring long-term stability and self-sufficiency.

Socio-Economic Impacts. Socio-economic impacts refer to the effects that a particular event, policy, or action has on the social and economic conditions of individuals or communities. In the context of relocation, these impacts may include changes in employment, income levels, education access, and overall quality of life. Understanding socio-economic impacts is essential for assessing how relocation affects a community's well-being and economic stability. Identifying and addressing these impacts allows planners to create relocation strategies that minimize disruption and foster positive socio-economic outcomes for relocated populations.

Stakeholders' Involvement. Stakeholder involvement refers to the active participation of individuals, groups, and organizations with an interest or stake in a specific project or decision-making process. In relocation planning, stakeholders may include local government officials, NGOs, community leaders, residents, and environmental agencies. Engaging stakeholders ensures a broader perspective and diversity of input, allowing for more comprehensive and equitable relocation strategies. Effective stakeholder involvement can bridge gaps between authorities and communities, ensuring that relocation efforts align with the community's priorities and resilience goals.

Sustainability. Sustainability is the practice of meeting current needs without compromising the ability of future generations to meet their own needs. This concept integrates environmental, social, and economic dimensions to create systems and communities that remain viable over time. In relocation efforts, sustainability involves ensuring that relocated communities have access to resources, maintain economic stability, and preserve environmental quality in their new settings. Sustainable relocation practices aim to reduce the ecological footprint of communities and promote social equity and economic resilience.

Participation in Relocation Planning. This term refers to the level of involvement of community members in designing, planning, and evaluating the relocation process. It includes attending consultations, voicing concerns, suggesting solutions, and actively contributing to decision-making activities related to the relocation. The study assessed how such participation influenced the quality and acceptance of relocation outcomes.

Policy Recommendations. Policy recommendations are proposed courses of action or guidelines designed to address specific issues or improve processes. In the context of relocation, policy recommendations provide guidelines for creating effective and sustainable relocation strategies, drawing on best practices and research insights. These recommendations can help local governments, NGOs, and other stakeholders implement relocation projects that enhance community resilience and sustainability. Well-crafted policy recommendations are based on empirical data and stakeholder feedback, ensuring that they address real needs and challenges within the relocation process.

RESEARCH METHODOLOGY

This chapter presents the research methodology employed in the study, which includes the research design, the selected locale of the study, and the respondents involved. It further outlines the data gathering instrument and procedures used to collect information, followed by the methods applied for data analysis and treatment. Additionally, the chapter addresses the ethical considerations considered throughout the research process to ensure the integrity and confidentiality of the study.

Research Design

The increasing frequency and intensity of environmental hazards, exacerbated by climate change, pose significant threats to vulnerable communities worldwide. In the Philippines, a country highly susceptible to natural disasters, proactive measures such as community relocation are being considered to safeguard at-risk populations. This study focuses on Poblacion Bustos, Bulacan, an area facing environmental risks that necessitate a careful examination of relocation as a potential resilience-building strategy.

To comprehensively understand the multifaceted aspects of relocation – from its initial impacts to its long-term viability – this research employs a sequential explanatory mixed methods design. This approach involves two distinct phases:

The initial phase of the study will focus on collecting and analyzing quantitative data to evaluate the resilience and sustainability of the relocation efforts in Poblacion, Bustos. This phase involves the use of structured surveys aimed at generating measurable insights across several key areas. Specifically, data will be gathered on household socio-economic status, including income levels, employment conditions, and access to essential resources. It will also examine the quality of infrastructure and housing by assessing the durability of structures and availability of basic services such as water, sanitation, and energy. Social capital will be evaluated through indicators like the strength of community networks, existing support systems, and the extent of participation in local decision-making processes. Additionally, environmental conditions will be assessed by examining the community's exposure to natural hazards and access to green or open spaces. Finally, the availability and quality of livelihood opportunities will be analyzed, focusing on job access, skills matching, and the potential for economic diversification in the new location.

Building upon the findings from the quantitative phase, the second phase of the study will focus on gaining a deeper understanding of the experiences and perspectives of relocated community members and relevant stakeholders. This will be achieved through qualitative methods that allow for rich, detailed insights. In-depth interviews will be conducted to capture individual narratives, including personal coping mechanisms, perceptions of resilience and sustainability in their new environment, and the challenges faced throughout the relocation process. Additionally, focus group discussions will be held to explore collective experiences, social dynamics, and community cohesion. These discussions will provide a broader view of how the relocation has impacted their daily lives and the environment, revealing shared perspectives that may not emerge through individual accounts alone. The qualitative data will provide rich contextual information, explain the quantitative results, and uncover underlying factors influencing the success and challenges of the relocation approach in fostering long-term resilience and sustainability.

By integrating the quantitative data on measurable outcomes with the qualitative insights into lived experiences, this sequential explanatory mixed methods design offers a robust and nuanced understanding of how relocation efforts in Poblacion Bustos, Bulacan, can contribute to building a more resilient and sustainable future for the community at risk. The findings will provide valuable lessons for future relocation initiatives in similar contexts.

At the same time, qualitative methods, including interviews and participatory workshops, offer an in-depth understanding of the lived experiences of community members and stakeholders. This aspect is critical in capturing the social and cultural dimensions of relocation, which may not be evident through quantitative data alone. By incorporating direct narratives, perspectives, and case-specific challenges, qualitative analysis enriches the study by providing context to statistical findings. The mixed-method approach ensures that the research questions are addressed holistically, combining the reliability of quantitative data with the depth of qualitative insights. This integration strengthens the study's ability to assess the effectiveness of resilience-building strategies and the sustainability of relocation efforts in a way that is both empirically grounded and contextually relevant.

In conclusion, this hypothetical research study using a concurrent embedded design demonstrates how the strengths of both quantitative and qualitative methods can be leveraged to provide a more in-depth and nuanced understanding of community engagement in the relocation process. The embedded qualitative data serves to enrich and explain the broader patterns identified through the quantitative survey, leading to more actionable insights for policy designers, researcher and other experts in-terms or relocation.

Locale of the Study

The study was conducted in Poblacion Bustos, Bulacan, a municipality located in the Central Luzon region of the Philippines. Bustos is known for its agricultural landscape and proximity to bodies of water, which makes it both economically significant and vulnerable to environmental risks, particularly flooding and other climate-induced hazards. As a low-lying area with an intricate network of rivers and streams, Bustos faces recurring natural disasters, exacerbated by climate change, that put communities at constant risk. Poblacion, being the urban center of Bustos, is a critical area for studying relocation efforts due to its dense population, infrastructure, and susceptibility to flooding. These geographical characteristics make it a suitable setting for analyzing the effectiveness of disaster preparedness and relocation strategies in at-risk communities.

Additionally, the socio-economic diversity of the population in Poblacion Bustos allows for a more inclusive understanding of the challenges faced by various demographic groups during relocation efforts. The local government's involvement in disaster preparedness initiatives and the community's active participation in previous relocation programs provide a strong foundation for studying the integration of resilience and sustainability into these processes. By conducting the study in this specific locale, the research aims to contribute not only to the immediate needs of Bustos but also to provide insights that can be applied to other flood-prone or disaster-vulnerable areas in the Philippines and beyond.

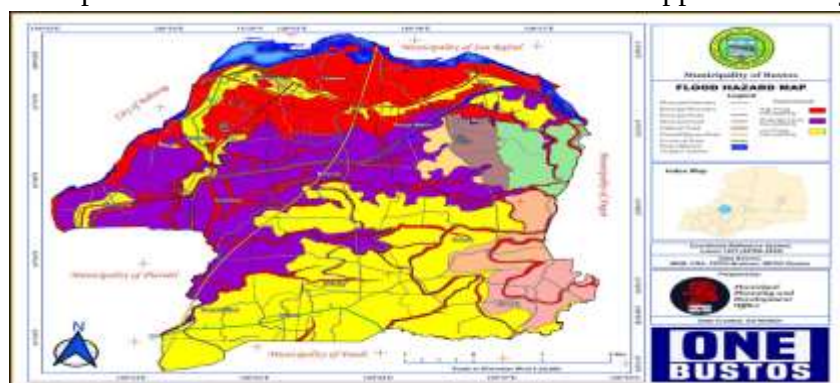


Figure 2
Vicinity Map

Respondents

The respondents of this study consist of a diverse group of stakeholders who play critical roles in the relocation and disaster preparedness process. The primary population includes community members, particularly residents of vulnerable areas in Poblacion Bustos, Bulacan, who have been affected by environmental risks and relocation efforts. Their first-hand experiences provide essential insights into the socio-economic challenges they encounter, their resilience strategies, and their expectations regarding relocation policies. Understanding their perspectives is crucial in assessing the effectiveness of relocation programs and identifying areas for improvement. A stratified sampling approach will be employed to ensure representation across different demographic groups, including various age groups, occupations, and lengths of residency in relocation areas. This will allow for a balanced understanding of how different segments of the community experience and adapt to relocation efforts.

Local leaders and community organizers were also key respondents, as they act as intermediaries between residents and government authorities. Their role in grassroots mobilization and advocacy allows them to offer valuable perspectives on community engagement, stakeholder participation, and the incorporation of local knowledge into broader relocation policies. By including representatives from these groups, the study ensures that relocation strategies account for the voices of those directly affected by displacement. Purposive sampling was used to select individuals who have been actively involved in relocation discussions, ensuring that the data gathered is rich in detail and directly relevant to the study's objectives. Local government officials, including urban planners, disaster risk reduction officers, and emergency management coordinators, provide insight into the logistical, financial, and regulatory aspects of relocation efforts. Their expertise is critical in understanding the constraints and challenges in planning and implementing sustainable relocation strategies. The study also involves professionals from the fields of engineering and urban development, who can provide technical perspectives on infrastructure resilience and adaptive urban planning solutions. Snowball sampling was employed to identify officials with direct involvement in relocation projects, as these individuals may not be readily accessible through conventional sampling methods.

Non-governmental organizations (NGOs) engaged in environmental advocacy, disaster response, and humanitarian assistance will be included to provide perspectives on how external organizations support displaced communities. Their role in bridging gaps between communities and government agencies ensures that relocation efforts align with sustainability and resilience principles. The study also considers funding agencies and policymakers involved in financing relocation projects, as their decisions shape the allocation of resources for housing, infrastructure, and livelihood support. Public health officials will be included to assess the impact of relocation on access to healthcare, sanitation, and other essential services, ensuring that relocation does not compromise community well-being.

Table 1
Hypothetical Table-Distribution of Respondents

Category	Population Size (N)	Sample Size (n)	Percentage of Population Sampled	Method of Selection (Quantitative)	Method of Selection (Qualitative)
Total Relocated Households	94	76	80.85%	Stratified Random Sampling	Purposive Sampling

By Experience:	Diverse				
Residents in Vulnerable Area	94	76	80.85%	Proportionate Stratified Random	Selected from an area with diverse experiences
NGOs, Local Government Officials, Community Leaders	10	10	100%	Proportionate Stratified Random	Selected from officials and NGOs experiences

The sample size for the quantitative part of the study (the survey) was determined using a statistical formula to ensure adequate representation of the population and sufficient statistical power for analysis. Several factors were considered:

1. Estimated Population Size (N): First needed was an estimate of the total number of relocated households in the specified region within the given timeframe. Through coordination with relevant government agencies (e.g., local disaster risk reduction and management offices, housing agencies) and NGOs, it was estimated that this population is 94 households.
2. Desired Confidence Level: We aimed for a 95% confidence level. This means that if the study were repeated many times, it could be expected that the true population parameter (e.g., average resilience score) may fall within the calculated confidence interval 95% of the time.
3. Margin of Error: A margin of error of +/- 5% was set. This indicates the acceptable range of error in our sample estimates compared to the true population value.
4. Statistical Formula: Using these parameters, the required sample size using a formula for finite populations can be calculated the required sample size using a formula for finite populations (since there is an estimated population size).

The sample size for the quantitative survey in this study was determined using a statistical formula for finite populations to ensure adequate representation and reliability. The estimated total number of relocated households in Poblacion, Bustos, Bulacan was 94, based on data gathered from local government agencies and NGOs. A 95% confidence level and a 5% margin of error were used to guide the calculation. Assuming a population proportion of 0.5 to maximize variability, the formula yielded a required sample size of approximately 76 respondents. This number ensures that the results were statistically valid and reflective of the target population.

The qualitative part of the study aimed to gain an in-depth understanding of the lived experiences, perspectives, and coping mechanisms of relocated households regarding resilience and sustainability. Therefore, the respondents for the qualitative interviews were selected using purposive sampling.

1. Purpose of Qualitative Sampling: The goal was not to achieve statistical representativeness but rather to select information-rich cases that could provide detailed insights into the research questions.
2. Selection Criteria: The selection of qualitative respondents was guided by the following criteria:
 - Diversity of Experiences: We aimed to include individuals and households with a range of experiences related to relocation, including:
 - Households relocated at different times since the hazard event.
 - Households with varying levels of integration into the new community.

- Households reporting different levels of access to resources and support.
- Households with different livelihood strategies in the relocation site.
- Households with varying perceptions of their resilience and the sustainability of their new living conditions.

The Key Informants:

The researcher also interviewed key informants such as community leaders in the relocation sites, representatives from local government units involved in the relocation process, and staff from NGOs providing support to the relocated communities. Their perspectives on the overall process, challenges, and successes were valuable. Varying Levels of Resilience and Sustainability (Potentially): While not always possible to know beforehand, the researcher aimed to include individuals who appeared to be coping well (high resilience) and those facing significant challenges (low resilience) based on initial observations or information from community leaders. Similarly, researchers sought perspectives on the long-term viability and environmental soundness of the relocation sites.

3. Selection Process: The selection process involved:

- Initial Contact and Coordination: Working with community leaders, local authorities, and NGOs to identify potential participants who met the selection criteria.
- Snowball Sampling (Potentially): Asking initial interviewees to recommend other individuals or households with relevant experiences.
- Researcher Judgment: Researchers used their judgment based on available information and initial interactions to select participants who could provide rich and diverse perspectives.
- Ensuring Saturation: Data collection continued until saturation was reached, meaning that no new significant themes or insights emerged from the interviews. The number of qualitative respondents is not predetermined but depends on the complexity of the data and when saturation occurs. Typically, this could range from 10-15 individual interviews or household representatives, and a few key informant interviews.

In summary, the quantitative part aimed for broader generalizability through stratified random sampling, while the qualitative part focused on in-depth understanding of specific experiences through purposive sampling of information-rich cases. The findings from both parts were then triangulated and integrated to provide a more comprehensive picture of the resilience and sustainability of relocation efforts.

Research Instrument

This study aimed to describe the current state of relocation efforts without attempting to alter or influence existing conditions. The study sought to obtain essential data that would support a well-founded and evidence-based conclusion. To achieve this, the researcher will employ a researcher-made survey questionnaire, which has been developed under established survey design principles to ensure reliability and validity. Before full implementation, the questionnaire underwent a pilot test with 27 respondents to assess its clarity and consistency, yielding a Cronbach's alpha of 0.718, which indicates acceptable reliability. This process ensures that the instrument effectively captures the intended data while minimizing ambiguity. The survey utilizes a 4-point Likert Scale, removing the Fair/Neutral response to encourage respondents to take a definitive stance on each item. The instrument follows standardized procedures for researcher-made surveys, including expert validation and revisions based on pilot test feedback.

This study employed a researcher-developed survey questionnaire to evaluate the effectiveness and sustainability of relocation efforts using both quantitative and qualitative methods. The framework comprises structured indicators across four sub-problems (SOPs), addressing areas such as stakeholder participation, socio-economic and environmental impacts, community resilience, and sustainability challenges and opportunities. Each area is assessed using a 4-point Likert Scale to promote clear responses. The instrument was subjected to expert validation and a pilot test involving 27 respondents, resulting in a Cronbach's alpha of 0.718, which demonstrates acceptable reliability. Qualitative data will be collected through interviews with key stakeholders and document reviews to provide a comprehensive and evidence-based understanding of relocation outcomes. The self-made questionnaire's validity was confirmed via expert evaluation, emphasizing the relevance of each item. The experts evaluated the items, and the Content Validity Index (CVI) was calculated for each item as well as for the overall instrument. The scale-level CVI (S-CVI/Ave) was determined to be 0.92, indicating a high level of content validity. The high score indicates that the items are suitable, pertinent, and consistent with the study's objectives, thereby ensuring that the instrument effectively gathers data on socioeconomic and environmental impacts related to relocation efforts.

To address SOP 1, the questionnaire is composed of five (5) domains based on the knowledge and experiences that adhere to the best practices on Stakeholder involvement, Decision-making processes, Access to relevant information, Participation in relocation planning, and Consideration of cultural sensitivity and respect in relocation policies. Each domain is composed of ten (10) indicators to measure their perspective to agree or disagree using a Likert scale. By observing the best practices, relocation processes can move beyond mere physical displacement to become opportunities for sustainable development, improved livelihoods, and the preservation of cultural identity. Prioritizing community engagement and the integration of local knowledge is not only ethically sound but also crucial for achieving successful and lasting outcomes for all stakeholders.

To address SOP 2, how may the socio-economic and environmental impacts of existing relocation strategies compose of five (5) domains, and each domains has ten (10) indications that deals with Income stability, Employment opportunities, Environmental conditions, Access to basic services such as water, healthcare, and education, Effectiveness of post-relocation support in facilitating long-term adaptation by evaluating through Likert scale. By carefully designing and implementing a research instrument that incorporates these considerations, researchers can effectively describe the multifaceted socio-economic and environmental impacts of existing relocation strategies and provide valuable insights for improving future relocation policies and practices. The findings can inform evidence-based decision-making aimed at ensuring more sustainable and equitable outcomes for displaced populations.

To address SOP 4, how do community members perceive the effectiveness of relocation efforts in promoting resilience and sustainability, based on their lived experiences, yhe research instrument is designed to capture these lived experiences needs to be quantitative - qualitative and participatory, allowing for nuanced perspectives and in-depth understanding with a given ten (10) statement indicators using Likert scale. By employing a well-designed research instrument that prioritizes quantitative - qualitative and participatory methods, researchers can gain a rich understanding of how community members perceive the effectiveness of relocation efforts in promoting their resilience and sustainability. This knowledge is essential for ensuring that future relocation initiatives are more people-centered, equitable, and contribute to positive long-term outcomes for affected communities.

To address SOP 4, what challenges and opportunities do stakeholders and communities encounter in enhancing the sustainability of relocation efforts? This SOP is composed of two (2) domains with ten (10) statement indicators, such as Challenges in Enhancing Sustainability of Relocation Efforts and Opportunities in Enhancing Sustainability of Relocation Efforts, using a Likert scale. This captures the perspectives of diverse actors involved in the relocation process, considering both the obstacles and the potential avenues for creating more sustainable outcomes. By systematically exploring both the challenges and opportunities, this research can contribute significantly to making relocation efforts more effective, equitable, and environmentally sound in the long term.

The study integrates both qualitative and quantitative methods to ensure a comprehensive assessment of relocation and disaster preparedness. Qualitative data were collected through interviews with key stakeholders, including community members, local leaders, government officials, and representatives from non-governmental organizations (NGOs). These interviews provide a deeper understanding of the social, economic, and policy-driven dimensions of relocation, capturing insights into the successes and challenges faced in implementing resilience-based strategies. The case study approach will further enhance this qualitative analysis by focusing on communities that have undergone relocation or disaster preparedness initiatives. By examining real-world cases, the study extracted best practices, lessons learned, and innovative solutions that contributed to more sustainable relocation strategies. The document review method supplements these findings by analyzing government reports, relocation plans, and relevant policy documents to assess how official strategies align with community experiences and needs.

Quantitative data were gathered through surveys administered to a broader sample population, ensuring a measurable and statistically valid analysis of relocation outcomes. These surveys captured respondents' satisfaction with relocation services, perceptions of disaster preparedness efforts, and socio-economic conditions following relocation. To maintain data integrity, non-responses or incomplete responses were addressed through a data cleaning process, where incomplete surveys with significant missing values will be excluded from statistical analysis, while minor gaps will be handled using appropriate imputation techniques where feasible. Additionally, follow-up attempts will be made to encourage respondents to complete missing sections, minimizing data loss..

Data Gathering Procedures

The data gathering procedures for this study began with an initial phase of planning and coordination with relevant stakeholders to ensure smooth data collection. This phase will involve reaching out to community leaders, local government officials, and non-governmental organizations (NGOs) in Poblacion Bustos, Bulacan, to secure their participation and cooperation. A clear timeline will be established, detailing when and how interviews, surveys, and case studies will be conducted. Ethical considerations will be integrated from the start, with informed consent obtained from all participants and confidentiality maintained throughout the process. This initial phase will also include a review of existing documents, such as local government reports, relocation policies, and disaster preparedness plans, to gather background information that will help contextualize the primary data.

The next phase involved the actual collection of data using the selected instruments. For qualitative data, semi-structured interviews were conducted with key respondents, including residents from vulnerable areas, local leaders, government officials, urban planners, and NGOs. These interviews allowed the respondents to share their personal experiences and insights on the relocation process, disaster preparedness, and the integration of resilience and sustainability strategies. Once the data collection was

completed, the final phase involved organizing and analyzing the gathered information. Data from the interviews were transcribed and coded thematically to identify patterns and key insights. Surveys were statistically analyzed to quantify the outcomes of relocation and disaster preparedness strategies. Document reviews were synthesized to compare the stated goals of policies with the actual experiences of the communities. Throughout the analysis, data triangulations were used to cross-verify the findings from different sources, ensuring the study's conclusions are well-supported and reliable. This comprehensive approach to data gathering may provide a well-rounded, detailed understanding of the factors that contribute to successful relocation practices and community resilience in the face of disasters.

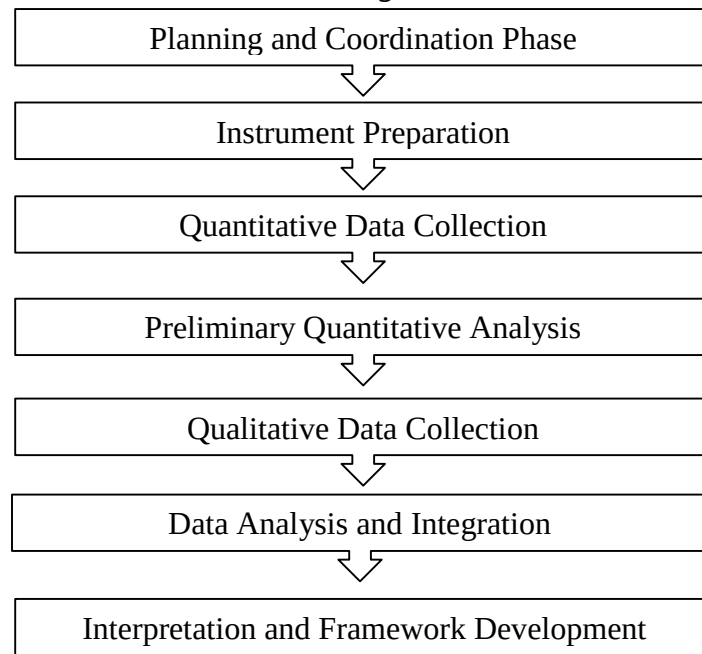
For the Quantitative Phase of collecting data, the primary goal of the quantitative phase was to gather broad, generalizable data on the resilience levels, sustainability indicators, and influencing factors across a statistically representative sample of relocated households. A structured survey questionnaire was developed. This instrument includes demographic information, Resilience scales, Sustainability indicators, and potential influential factors. The survey questionnaire was pilot-tested with a small group of relocated households (not included in the final sample) to assess clarity, comprehensibility, cultural appropriateness, and the time required for completion. Feedback from the pilot test was used to refine the instrument before the main data collection. Before data collection, ethical clearance was obtained from the relevant university research ethics board. Informed consent forms, explaining the study's purpose, procedures, risks, and benefits, were prepared in the local language. Participants were assured of anonymity and confidentiality.

The qualitative phase aimed to provide an in-depth understanding and context to the quantitative findings, exploring the lived experiences, perceptions, and narratives of relocated households regarding their resilience and the sustainability of their new living conditions. A semi-structured interview protocol was developed. This protocol included a list of open-ended questions and probes related to experience with relocation, perceptions of resilience, factors influencing resilience, and sustainability. Participants for the qualitative interviews were purposively selected based on the criteria outlined earlier (diversity of experiences, potential key informants). This selection was partly informed by the initial trends and patterns observed in the quantitative data. For example, we might have specifically sought out individuals who scored particularly high or low on resilience scales or those who reported significantly different experiences with specific sustainability indicators. Researchers also took field notes during and immediately after the interviews to capture contextual information, non-verbal cues, and initial reflections. Before each interview, interviewees were provided with detailed information about the study and their rights, and they signed an informed consent form. They were assured of anonymity and confidentiality.

The integration of the quantitative and qualitative data occurred primarily during the data analysis and interpretation phases. The chosen integration strategy was a Nested design, where the quantitative results were used to inform the selection of participants and the focus of the qualitative data collection, and the qualitative findings were then used to explain and provide deeper meaning to the quantitative results.

By employing this method's design and carefully integrating the quantitative and qualitative data, the study aimed to provide a robust and nuanced understanding of the factors influencing the resilience and sustainability of households relocated due to environmental hazards, ultimately contributing to more effective and people-centered relocation policies and practices.

Figure 3
Data Gathering Flowchart



Data Analysis, Treatment, and Techniques

The following formulas were used to process data for the research questions:

Frequency and Percentage Distribution were used to assess the demographic profiles of the respondents. *Weighted Mean* was used in the assessment of the integration of resilience and sustainability into relocation approaches for communities at risk in Poblacion Bustos, Bulacan.

Likert Scale

The Likert scale is a rating scale that quantitatively assesses opinions, attitudes, or behaviors. In this study, the following measures were used in assessing the integration of resilience and sustainability into relocation approaches for communities at risk in Poblacion Bustos, Bulacan.

A Likert Scale is composed of a series of four or more Likert-type items that represent similar questions combined into a single composite score/variable.

All the respondents were given a chance to rate each statement in the questionnaire. Their answers were given a corresponding number as follows:

Table 2: Likert Scale Table Descriptor and Interpretation

To facilitate the interpretation of the average responses for each Likert scale item or composite scale (created by averaging responses to multiple related items), the following verbal descriptor scale was adopted. This scale is aligned with the general positive or negative connotation of the constructs being measured (resilience and sustainability).

Table 2
Likert Scale Table Descriptor and Interpretation

Mean Range	Equivalent Rubric Value	Verbal Description	Interpretation
1.00 - 1.75	1	Strongly Disagree	The respondents, on average, indicate a very low level of the attribute (e.g., very low resilience, very poor sustainability).
1.76 - 2.50	2	Disagree	The respondents, on average, indicate a low level of the attribute (e.g., low resilience, poor sustainability).
2.51 - 3.25	3	Agree	The respondents, on average, indicate a high level of the attribute (e.g., high resilience, considerably sustainable).
3.26 - 4.00	4	Strongly Agree	The respondents, on average, indicate a very high level of the attribute (e.g., very high resilience, highly sustainable).

The qualitative data collected through semi-structured interviews were analyzed using Thematic Analysis. This is a widely used and flexible method for identifying, organizing, and reporting patterns (themes) within a dataset. The process involved the following steps such as familiarization with data, generating initial codes, searching for themes, reviewing themes, defining and defining themes, and producing the report.

By employing these specific data analysis treatments and techniques for both the quantitative and qualitative data, the study aimed to provide a robust and comprehensive understanding of the resilience and sustainability of relocated households, leveraging the strengths of both methodological approaches. The integration of the findings from these analyses allowed for a richer and more nuanced interpretation of the research outcomes.

Standard Deviation

The standard deviation is calculated as the square root of the variance by determining each data point's deviation relative to the mean. This was used to quantify the amount of variation.

Ethical Consideration

Ethical considerations are critical in conducting any research, especially in studies that involve human subjects and vulnerable communities. Informed consent is the cornerstone of ethical research and has been the primary focus of this study.

All participants were fully informed about the purpose, scope, and methods of the study before their involvement. A clear explanation of what the research aimed to achieve, how their data were collected, and used. Participants understood the potential risks and benefits of their participation and were provided the opportunity to ask questions before consenting. Consent was documented, either through signed forms or recorded verbal agreements, ensuring that all respondents agreed to participate with full awareness of the study's intentions.

Confidentiality and privacy were also paramount in this research. Personal data collected from participants, such as their names, addresses, and specific circumstances, will be protected. This means that any identifying information will be anonymized in reports and publications to prevent any breach of privacy. Data storage will also follow strict protocols, with access limited to authorized personnel and measures such as encryption employed for digital records. Ensuring confidentiality not only fosters trust between the researchers and participants but also encourages openness in responses, as participants are more likely to share their true experiences and opinions when they feel their privacy is respected.

Voluntary participation is another crucial ethical principle in this study. All participants had the right to decide whether they wanted to be involved in the research without any form of coercion or undue pressure. Furthermore, participants were informed that they can withdraw from the study at any time without facing any negative consequences. This ensures that their participation is based entirely on free will, aligning with the ethical standards that prioritize respect for individuals' autonomy. Additionally, the study actively avoided any incentives that might unduly influence participation, ensuring that those involved do so out of genuine interest or concern for the topic.

Cultural sensitivity is especially important in a study like this, which involves diverse communities that may have distinct values, traditions, and perspectives on relocation and disaster preparedness. The researcher took care to approach the participants in a manner that respects their cultural context. This means being mindful of local customs, communication styles, and social norms, as well as ensuring that research materials (surveys, interview questions) are translated into local languages if necessary. By respecting cultural differences, the study aimed to build stronger rapport with the community, which can lead to richer, more authentic data collection and ensure that the study's recommendations are culturally appropriate and relevant.

Transparency and accountability are vital ethical concerns to maintain the integrity of the research. Throughout the study, the researchers were transparent about their methods, goals, and the potential impacts of the research. Participants were kept informed not only during the initial consent process but also throughout the study's progress. Findings will be shared with the community and other stakeholders in clear, accessible formats to ensure that the research serves those who are directly impacted by relocation efforts. Accountability means that the researchers will be responsible for their actions, ensuring that the study is conducted fairly, ethically, and in line with both academic and community expectations.

Stakeholder engagement also played a significant role in the ethical considerations of the study. Since the research involves multiple stakeholders—including community members, local government officials, NGOs, and urban planners—it is important that their voices are heard and their concerns addressed. Engaging stakeholders early in the research process ensures that their input is incorporated into the study design, data collection, and analysis. This collaborative approach not only strengthens the study's relevance but also fosters a sense of ownership among the participants, which can lead to more sustainable and community-driven outcomes. Ethical research does not just extract data from participants but actively involves them in shaping the research itself. Another critical factor is the ethical review process. Before data collection begins, the research will be submitted to an institutional review board (IRB) or equivalent ethical review body to ensure that it adheres to the highest ethical standards. The review process evaluates the research methods, potential risks to participants, and the strategies in place to mitigate those risks. Gaining approval from an ethical review board is essential for maintaining the credibility and integrity of the research. It ensures that the study is not only scientifically valid but also ethically sound, protecting the rights and well-being of all involved.

RESULTS AND DISCUSSION

The results of the study are presented in this chapter, which is based on data from the survey and the interviews with the residents of Poblacion Bustos, Bulacan, and local government officials and people in the related fields. The study results offer a holistic and all-inclusive perspective regarding perceptions, fears, and experiences associated with the possibility of moving communities at risk in the face of environmental hazards.

1. Best practices that promote community engagement and the integration of local knowledge in the relocation process in terms of:

Table 3			
<i>Stakeholder involvement</i>	Mean	Std. Deviation	Verbal Meaning
I feel that local government officials are actively involved in our relocation process.	2.6393	.94926	Agree
Community leaders regularly engage with us to understand our needs and concerns about relocation.	2.3279	.76858	Disagree
I see non-governmental organizations (NGOs) actively participating in our relocation efforts.	2.2131	.79822	Disagree
There are clear communication channels between stakeholders and residents in the relocation process.	2.3607	.68393	Disagree
I believe that stakeholders genuinely listen to the residents' concerns during the relocation process.	1.8033	.77071	Disagree
Stakeholders provide us with timely updates about relocation activities and plans.	2.0820	.71403	Disagree
I feel that there is strong support from community organizations in addressing relocation issues.	2.0164	.84640	Disagree
Stakeholders, such as government agencies, show transparency in the relocation process.	1.8852	.85826	Disagree
Community members are encouraged to express their views to the stakeholders involved.	2.1967	.81281	Disagree
I am confident that stakeholders have our community's best interests in mind during the relocation process.	2.1148	.93271	Disagree
Composite Mean	2.16394		Disagree

Table 3 gives an overview of how residents view stakeholder engagement. It is clear from the findings that many residents are worried about not being sufficiently involved in the relocation process. The average of 2.16 in the “Disagree” range suggests that a majority of respondents see that stakeholders do not involve themselves enough in crucial aspects related to using local information and relocation with people’s input. Though local government officials are seen in a positive light by many (2.6393 Agree), the rest of the topics show general dissatisfaction. Residents did not strongly support that frequent interaction happens between community leaders and the villagers (mean = 2.3279) or that NGOs are engaged in helping their community (mean = 2.2131). Worsening the situation is that those responsible do not pay enough attention to concerns shared by residents (mean = 1.8033) and that certain government agencies are not as transparent as they should be (mean = 1.8852). By looking at the standard deviations, we get

another idea about the range of views expressed by the respondents. The idea that local government is involved in education has the highest level of approval, but the standard deviation is relatively high at 0.94926, pointing out that while a few people may agree, others may disagree and back up this disagreement with their own experiences. However, small numbers such as 0.68393 for communication channels and 0.71403 for timely updates show that residents generally share the same opinion about these issues. Also, with a standard deviation of 0.77071 for the stakeholder statement, it's clear that most respondents saw the negative impact, making it more likely that this approach was rote or forced upon them. This highlights the importance of practices that encourage to-and-fro communication, openness, and decisions that involve every community. It is important to create ways to get feedback, involve local leaders, and ensure that NGOs help support dialogue. Trust, open spaces for communication, and everyone being responsive are key to making use of local knowledge.

These findings have implications of great scope. If the process of stakeholder engagement is not effective, community members will be mistrustful and dissatisfied with the process of relocation, which can impede the success of such efforts. If residents feel their interests are not being heard or supported, we may see their concerns go unaddressed, and there will be negative consequences for the individual as well as the community at large. As a result, this disconnect is evidence of a crucial necessity for more effective approaches regarding collaborations and mediations between stakeholders and residents.

In line with this view, Chico et al.,(2021) show that incorporating the disaster risk reduction strategies alongside relocation when their efforts during the preparedness phase further improve long-term adaptation outcomes. In addition, as argued in Aquino and Palarca (2021), community engagement is key in devising useful plans of resettlement. Stakeholders can achieve more effective and sustainable relocation strategies by giving priority to the participation of affected communities and by incorporating such communities' knowledge at the planning stage.

Table 4			
<i>Decision-making processes</i>	Mean	Std. Deviation	Verbal Meaning
I have opportunities to participate in decisions about our community's relocation.	2.5082	.74438	Agree
The decision-making process allows community members to voice their opinions before final decisions are made.	2.3607	.83731	Disagree
I feel that my input is taken seriously in the relocation decisions affecting my family.	2.4262	.80538	Disagree
There are clear guidelines about how decisions are made regarding the relocation process.	2.6066	.78057	Agree
I feel that there is fairness in how decisions are made for all members of our community.	1.9672	.91227	Disagree
Community meetings are held regularly to discuss decision-making in the relocation process.	2.1639	.82017	Disagree
I am informed about the reasons behind the decisions made about our relocation.	2.1475	.81314	Disagree
I believe that community members have a say in the timing and implementation of the relocation plans.	2.7377	.85443	Agree

I feel that our concerns are addressed in the decision-making process.	2.2787	.55170	Disagree
I am aware of the roles and responsibilities of each party involved in making relocation decisions.	2.5410	.88645	Agree
Composite Mean	2.37377		Disagree

Table 4 reveals the composite score of 2.37, which indicates that, in general, respondents do not feel well informed about the process of making and sharing decisions as they relocate. While on the positive side, respondents indicated having some opportunities for decision-making about relocation (mean=2.5082) and understanding the roles of stakeholders (mean=2.5410), there is still some variation in experiences within the scores themselves. The standard deviation for participation opportunities is 0.74438, which suggests the responses are not very spread out. It suggests that even though some people take part, others are not involved as much, demonstrating differences in how policies are carried out in different areas. A similar finding is, "I believe that community members have a say in the timing and implementation of the relocation plans", rated Agree (2.7377) with a high level of variation at least in opinions (0.85443). It points out that involvement in the planning process can make a big difference to people since it connects to who arranges meetings and their closeness to decision-makers. Meanwhile, "I feel that our concerns are addressed in the decision-making process" was rated low and also showed a very low standard deviation (2.2787 and 0.55170, respectively). This means that people in the area seem to consistently feel that their concerns are being ignored by the government. The community feels fairness in decisions is low as a whole, and members have wildly different views on it (mean = 1.9672, SD = 0.91227). The results suggest that citizens feel they can be involved, but this does not always result in a real impact on the decisions made. Although people can join in, the continued lack of fairness and effective communication in the process makes it harder for most to trust the elections. When looking at standard deviations for each indicator, we can see that the way decisions are made is not even for all groups.

These findings are important for encouraging community trust and putting a successful relocation effort on track. This can, in turn, cause residents to feel disenfranchisement and resentful if they are left out of the decision-making process. The lack of community connection may undermine the outcome of relocation initiatives as community support is a prerequisite to successful implementation. Consequently, all stakeholders need to proactively involve residents to allow their voices to be heard and give due consideration to the issues they face.

This perspective is supported by Pante (2024), who put forth a paradigm shift for how communities are to be supported through displacement and relocation in a more inclusive way. In addition, Imperiale and Vanclay (2021) described resilience purely in terms of social, environmental, and economic factors and emphasized that community input should be integrated to enhance the overall height of resilience. If we adopt a more participatory approach, we can get more equitable and efficient processes of relocation that take into consideration the needs and concerns of all the community members.

Table 5			
<i>Access to relevant information</i>	Mean	Std. Deviation	Verbal Meaning
I receive enough information about the relocation plans and timelines.	2.3279	.78996	Disagree

The relocation process information is provided in a language that I understand.	2.4426	.88552	Disagree
I feel that information about relocation policies and guidelines is easily accessible.	2.2787	.79856	Disagree
I know where to find resources and support related to the relocation.	2.5082	.74438	Agree
Information about potential relocation sites and amenities is provided to us clearly.	2.2623	1.06304	Disagree
I am informed about any changes in the relocation plans as soon as they occur.	2.3279	.81079	Disagree
The community has access to legal and financial information related to relocation.	2.3115	.97538	Disagree
I am aware of the environmental impact and safety considerations of our new relocation site.	2.5738	.95671	Agree
There are community sessions or pamphlets that inform us about relocation procedures.	2.2295	.64274	Disagree
I feel that the relocation information shared with us is accurate and reliable.	2.2787	.81917	Disagree
Composite Mean	2.35411		Disagree

Table 5 shows that many people in the community were unhappy with how much information they got about what was happening next, with an overall score of 2.354, which means most people disagreed. This suggests that most people moving think they didn't get enough helpful information about things that matter most when moving to a new place. While some statements got slightly higher scores, like "I know where to find resources and support related to the relocation" (mean = 2.5082) and "I am aware of the environmental impact and safety considerations of our new relocation site" (mean = 2.5738), the spread of answers for both is still fairly large (.74438 and .95671). This shows that while some people might be able to get information, others can't, which just proves that how information is shared isn't the same for everyone in the community. The biggest differences in perceptions are found in answers to the question "Information about potential relocation sites and amenities is provided to us clearly," as people gave tallies that were on average 1.06 points higher or lower than the overall average. This widespread means there's a big chance that some people will know about these new changes, but quite a lot of others probably haven't heard about them yet. Similarly, how easy people find it to get legal and financial information also varies a lot (SD = 0.97538), which means some folks might have an easier time understanding these topics than others, or just not be able to get good information. On the other hand, the lowest amount of variation was seen in the question "There are community sessions or pamphlets that inform us about relocation procedures" (SD = 0.64274), and this question also got one of the lowest scores on average (2.2295). This suggests that almost everyone seems to think this kind of information is not enough or just not available enough. These findings show that there are two main issues when it comes to communication during a corporate relocation: not talking about it early enough and not helping people find out all the necessary information. first, there isn't enough information to go around, and second, when information is given, it often doesn't reach everyone in the same way, so some people don't understand what's happening. The fact that the simplest things like getting updates on time, having them in ways people can easily use, and

making them clear aren't always done right shows there's a big problem with how people are planning how to communicate.

The implications of these findings are significant because a lack of information could cause confusion and distrust among community members. In a system where the information that residents have regarding relocation plans is not clear and reliable, it can prevent residents from making informed decisions and participating in this process. Such a lack of transparency may worsen those feelings of vulnerability and anxiety that ultimately thwart the success of the relocation in its entirety.

In line with this view, Rendon, Osman, and Faust (2021) argue that community resilience involves social networks, governance structures, and an important aspect of that is accessible information that encourages resilience. Zeng et al. (2022) also pointed out that such an integrated scheme (resilience and development) requires clear communication and information sharing with the community for a balance. Access to information that is appropriate for the issue at hand will contribute to building the trust and engagement of the stakeholders, which in turn can create better relocation results and outcomes.

Table 6 <i>Participation in relocation planning</i>	Mean	Std. Deviation	Verbal Meaning
I feel that I am encouraged to participate in planning activities for our relocation.	2.3770	.83992	Disagree
Community members are involved in creating the layout and infrastructure of the new area.	2.2623	.81449	Disagree
I am invited to workshops or meetings about planning the relocation site.	2.0656	.87310	Disagree
Our community has a say in the allocation of resources in the new relocation area.	2.3443	.72767	Disagree
I am given opportunities to share my expectations and ideas about the relocation site.	2.0820	.89991	Disagree
I feel that residents' input is valued in the planning stages of the relocation.	2.2623	.77248	Disagree
I am confident that my feedback in planning meetings influences the relocation outcomes.	2.1967	.87216	Disagree
We are invited to discuss potential challenges and solutions in the relocation plan.	2.4426	.88552	Disagree
I feel that my community's local knowledge is considered in the relocation planning process.	2.4262	.80538	Disagree
I am aware of the timeline and progress in the relocation planning process because of my participation.	2.3443	.89229	Disagree
Composite Mean	2.28033		Disagree

Table 6 shows that most people do not feel they are closely involved in planning for relocation, as the composite mean is 2.28, which means "Disagree." The findings show that many respondents experience some form of exclusion from the development of planning. The values for standard deviation, from around 0.72 to 0.89, provide extra information on how similar these perceptions are. Take, for example, standard deviations of 0.72767 and 0.77248, indicating a consistent feeling of exclusion among many members of

the community. As a result, the finding that there are few chances for people to engage becomes more believable. However, certain items have much higher standard deviations, from 0.87 to 0.89, which shows that respondents gave answers with a greater spread. While there is a lot of disagreement overall, it's possible that a few members have not taken part as much due to limited time, but the general feeling has not changed. Such diversity in opinion allows us to see that some people or groups could be part of the process, but many others may be left behind. Generally, the low average scores combined with large differences in standard deviation mean that participation in the relocation planning process is uncoordinated in most communities. If communities feel that some people are favored, it may erode the sense of trust and involvement of everyone.

These findings are important in terms of helping to shape community resilience and facilitating the success of the relocation initiative. Widespread mistrust and disengagement can result if community members feel that they are being disrespected, marginalized, and unheard, which undermines the efforts aimed at relocating the population. This is not only for gathering various perspectives effectively in a process, but it is also for giving locals a sense of ownership and accountability. A relocation can proceed without meaningful community involvement and may not have the degree of need and desire expressed by the people involved, which can be satisfied, and possibly conflict is generated.

This perspective is supported by Talubo, Morse, and Saroj (2022), who suggested a full approach to disaster resilience considering community participation in the processes of planning. In addition, Logan et al. (2022) recommended that resilience science should develop a dynamic systems perspective for the importance of incorporating locally relevant and pragmatic knowledge and input in decision making. The goal of enhancing participation in relocation planning is to create more inclusive and effective strategies, allowing stakeholders to accommodate the community's needs and increase overall resilience.

Table 7
Consideration of cultural sensitivity and respect in relocation policies

	Mean	Std. Deviation	Verbal Meaning
I feel that my cultural background is valued and considered during the relocation process	2.1475	0.74913	Disagree
Our relocation policies demonstrate a strong commitment to respecting the cultural differences of the individual.	2.082	0.55663	Disagree
The relocation policy takes into account the importance of family and community ties for employees from diverse backgrounds.	1.8033	0.67872	Disagree
The relocation process provides guidance on navigating local food and dietary restrictions related to cultural or religious practices.	2.1639	0.66283	Disagree
Relocation support is provided in a manner that avoids cultural biases.	1.8033	0.81281	Disagree
Language barriers are adequately addressed during the relocation process.	1.9344	0.65495	Disagree

The Government agency helps in locating places of worship, culturally relevant markets, and other culturally significant locations.	1.8361	0.68752	Disagree
The Government agency provides resources to help individuals integrate into the social and cultural environment of their new location.	2.1967	0.79204	Disagree
The government agency considers the religious and social needs of individuals during relocation	2.0656	0.60191	Disagree
The government agency actively seeks feedback on how to improve the cultural sensitivity of its relocation policies.	1.9508	0.76215	Disagree
Composite Mean	1.99836		Disagree

Table 7 results concerning cultural sensitivity and respect in relocation policies highlight a worrying development. A composite mean of 1.99836 for "Disagree" reveals that most respondents strongly believe that cultural matters are left out of the current system for relocation. Considering the standard deviation values, in the range of 0.56 to 0.81, we learn some important points. Lower standard deviations, for example, for 0.55663 and 0.60191, show that most respondents had the same view, making it clear that people are dissatisfied with how cultural matters are managed. The lack of respect for different cultures during relocation is a broader issue that is seen consistently throughout each part of the relocation process. Still, slightly wider standard deviations in certain items (for example, 0.79204 and 0.81281) mean that people have slightly varying opinions, even though the majority preferences are still against it. Differences in experience may simply be due to personal skills, local support, or the level of support sought from official bodies. All in all, the mean and standard deviation show that not enough is being done, and that there is shared dissatisfaction about how culture is addressed in relocation projects. It appears that very little has been done to meet the needs related to culture, religion, and different communities, and sometimes not at all.

These findings are significant for several reasons, as neglecting cultural sensitivity can result in feelings of alienation and resentment among community members. If policies disregard and fail to integrate local values, such a lack of respect and integration will degrade community trust, and at the same time increase social tensions. This lack of cultural consideration of the benefits of migration can hinder the adoption of maximization of the process as it leads to resistance towards change, which is not compatible with their sense of cultural identity and practice.

This is supported by Choudhury et al. (2021), who studied how indigenous and local knowledge can strengthen community resilience through disasters based on the need to incorporate a cultural perspective in the processes of planning. Yabe et al. (2022) also urged the use of complex systems modeling to predict and abate the impacts of disasters by considering the cultural setting of affected communities. Focusing on cultural sensitivity in relocation policies will aid in developing a more inclusive environment that acknowledges and acknowledges different cultural identities within the community, and in turn, will facilitate more successful relocation outcomes.

2. The socio-economic and environmental impacts of existing relocation strategies are described in terms of:

Table 8			
<i>Income stability</i>	Mean	Std. Deviation	Verbal Meaning
My family's income has remained stable since relocating to this area.	2.3115	.71974	Disagree
The relocation process has provided opportunities that help maintain my income level.	2.3770	.77812	Disagree
I am able to manage my expenses as well as I did before the relocation.	2.1639	.82017	Disagree
Relocation has not significantly impacted my family's financial stability.	2.1148	.79788	Disagree
I have access to resources that support my family's income in the relocation area.	2.3115	.94058	Disagree
My income has been predictable and steady since moving to this community.	2.1803	.78546	Disagree
The relocation process has not disrupted my primary sources of income.	2.1475	.87247	Disagree
I feel that the new community supports income-generating activities.	2.4262	.74070	Disagree
My income level has improved since relocating to this area.	2.1639	.73440	Disagree
Relocation has made it easier for me to sustain my family's financial needs.	2.0820	.71403	Disagree
Composite Mean	2.22786		Disagree

Table 8 shows an overall average score of 2.22786, which suggests that respondents do not see positive effects on their finances after the relocation. The standard deviations show that responses were not too similar, ranging from about 0.71 to 0.94. Lower standard deviations (e.g., 0.71403, 0.71974, 0.73440) suggest more accord between the respondents on their feelings about income challenges. As a result, quite a few people are convinced that their financial gap has remained the same or increased since they moved to another country. Higher standard deviations (for example, in 0.94058 and 0.87247) underline that income-support resources are not shared equally or that people use different ways to cope in each household. Such kind of differences may arise due to varied work options available or because of extra money from remittances or odd jobs by family members. All in all, even with these variations, all the items mean are still below the neutral point, further pointing to lower outcomes from relocation. According to the study, there is evidence that many forced resettlements have either cut off income or have not led to stable new financial opportunities.

These findings bear greatly on both the individual family and, more generally, the community. Families face increased stress and poorer quality of life after relocation to Oregon due to the instability of their incomes. In addition, the relocation process cannot ensure sufficient economic engagement and support to the community, as it may lead to a persistent issue of socio-economic challenge, such as a high level of

poverty rate and weakened community cohesion over a long time. This is crucial because it addresses these issues that help to create a sustainable and resilient community.

This is supported by the argument that community involvement is pivotal to sustainable rural development, as noted by Zhang et al. (2022), who advocated for policies that ensure economic opportunities. Furthermore, according to DiBella et al. (2023), SMEs can also be instrumental in developing the capacity towards resilience through sustainable business practices. If stakeholders can focus on income stability through creating supportive economic environments, relocation efforts should contribute to making families and the community as a whole financially healthy.

Table 9			
<i>Employment opportunities</i>	Mean	Std. Deviation	Verbal Meaning
I have access to more job opportunities in this new location compared to where I lived before.	2.2787	.85890	Disagree
Relocation has improved my chances of finding stable employment.	2.4262	.80538	Disagree
The relocation area has job options that match my skills and experience.	2.2131	.79822	Disagree
Relocation has provided me with better networking opportunities for employment.	2.2787	.75567	Disagree
I feel that there are enough job opportunities in the relocation area for me and my family.	2.3443	.87341	Disagree
The relocation area is close to job centers or businesses that could offer employment.	2.2459	.82977	Disagree
Relocation has made it easier for me to participate in livelihood programs.	2.4754	.84866	Disagree
I have access to job training or skill-building programs in the relocation area.	2.3279	.65119	Disagree
My employment prospects have improved since the relocation.	2.2951	.66694	Disagree
I feel supported in finding employment or work opportunities within the relocation area.	2.1803	.74180	Disagree
Composite Mean	2.30656		Disagree

Table 9 shows that, compared to the scores given to other factors, the one related to employment after relocation is quite low, indicating many respondents disagree that the jobs available are adequate and of good quality. By looking at the standard deviations, from 0.65119 to 0.87341, we better understand how respondents viewed the subject. When SDs are about 0.65 to 0.75, employees consistently report being dissatisfied with roles at work, skill-gaining opportunities, or the support they receive. Therefore, most people do not get many job-related perks after moving, despite having different experiences and abilities. With SD values going up above 0.80 and reaching 0.87, there is a higher chance of unequal responses, perhaps resulting from different amounts of help received through livelihood programs, more schooling among some people, or having more resources than others. Although the programs varied, the typically low mean scores imply that most participating individuals felt their employment situation remained

unsatisfactory. With a mean of 2.4262 and a standard deviation of 0.80538, some people may have had a small improvement, but this did not change the overall negative result of the survey.

These findings are of major importance. It may result in a worsening financial situation in families and increase the chance of poverty and instability. Supportiveness of people's job search leads to hopelessness and a sense of lack of community engagement. The disconnection has serious implications for the individual's well-being and can also impede in development of communities by channeling the development of the community and community cohesion through economic activity.

According to this, Junaid et al. (2023) examine how technology augments resilience in other sectors, such as employment, and how this serves as an argument for the need for more innovative solutions to address problems of employment access. Amirzadeh, Sobhaninia, and Sharifi (2022) additionally discussed the evolution of urban resilience, leading to this being created in environments where jobs are growing and are stable. Stakeholders will be better able to support families and promote sustainable community development if they address barriers to employment in relocation areas.

Table 10			
<i>Environmental conditions</i>	Mean	Std. Deviation	Verbal Meaning
The relocation area has clean air and a healthy environment.	2.7213	.93329	Agree
I feel that the new location is free from pollution and environmental hazards.	2.5082	.92417	Agree
The relocation area is less prone to natural disasters than my previous location.	2.4262	.80538	Disagree
I am satisfied with the cleanliness and sanitation in the relocation area.	2.5574	.69581	Agree
The relocation area has green spaces or parks that improve the quality of life.	2.6066	.84219	Agree
I feel that the environment here supports a safe and healthy lifestyle.	2.4754	.74401	Disagree
There is minimal noise pollution in the relocation area.	2.6393	.93154	Agree
Water sources in the relocation area are clean and accessible.	2.6557	.68032	Agree
The relocation area's environmental quality positively impacts my health.	2.4918	.64866	Disagree
I am comfortable with the environmental conditions of the relocation area.	2.4918	.84898	Disagree
Composite Mean	2.55737		Agree

Table 10 shows that people's opinions about the environment after moving to a new place are mixed, as the average score of 2.55737 points to a general understanding that the environment is of good quality. Still, the different spread of responses, as seen in the standard deviation values from 0.64866 to 0.93329, brings a new perspective to this result. When SD values like 0.93329 and 0.93154 occur, it means there is a lot of diversity in how people view air quality and noise pollution. From this, it seems that some

respondents have better environmental conditions following relocation, depending on the part of the site they are living in, as others may not. Conversely, when the SD is low, say 0.64866 or 0.68032, it points to more agreement on topics such as water and the environment. Because spreads are narrower, it's likely that, for certain aspects of nature, individuals in the region share a similar experience, good or bad. Regardless of the approval of the environment's livability, there are certain binding problems. A range of mean scores just below 2.5 and average SDs shows that respondents are uncertain or unsure about how safe or unsafe the area is. They may point to risks to the environment or infrastructure in different places across the country.

The findings have importance to community health and well-being. Respondents value environmental aspects such as population, but the concern of pollution and safety point to continued monitoring and continual improvement in environmental quality. A secure environment is very important to create a healthy environment for creating a sense of security as well as for a better quality of life. Residents may feel anxious if they perceive environmental hazards, which would then result in them being less willing to become involved in the community and to social cohesion.

In accordance with this point, Lin et al. (2021) also asserted that integrated solutions within urban planning are necessary to promote environmental quality and community resilience. In addition, Tubridy, Lennon, and Scott (2022) also suggested using a managed retreat strategy for climate adaptation, and climate adaptation that addresses environmental risks to be more socially equitable. Through placing emphasis on environmental improvement and safety, stakeholders can impact a healthier and more resilient community for all residents.

Table 11
Access to basic services such as water, healthcare, and education

	Mean	Std. Deviation	Verbal Meaning
I have easy access to clean and safe drinking water in the relocation area.	2.5574	.90415	
Healthcare services are available and accessible in my new community.	2.4754	.76608	Disagree
My children have access to quality education facilities nearby.	2.3770	.87871	Disagree
Basic services, like electricity and sanitation, are reliably available in this area.	2.5082	.82912	Agree
I feel that healthcare services in the relocation area meet my family's needs.	2.2787	.85890	Disagree
The relocation area has accessible public transportation to reach essential services.	2.2623	.85443	Disagree
I am satisfied with the availability of educational services for my family.	2.3115	.99232	Disagree
The relocation area has social services that support my family's well-being.	2.5410	.76537	Agree
I have reliable access to resources for food and basic necessities here.	2.3443	.65537	Disagree

The availability of basic services in the relocation area has improved my quality of life.	2.2951	.82349	Disagree
Composite Mean	2.39509		Disagree

Table 11 shows how people feel about getting access to water, healthcare, and education, where they will relocate. The group believes that the vital services are inadequate or unreliable after their moving experience. This points to concerns about how well the new neighborhood fits with everyone's needs and family life. Based on the standard deviation values, there is significant variance in how residents feel about the area. For example, high SDs, mainly above 0.9, suggest that answers or opinions about educational services differ greatly among people. So, while certain families have secure access, some are still struggling a lot. On the other hand, an SD as low as 0.65537 for access to food marks a more predictable situation for all countries, regardless of the scores being low. This result could mean that similar troubles happen in many neighborhoods instead of only in individual ones. A small number of items that indicate a higher average and moderate level of variation could mean that the community is only slightly happy with the basic amenities of electricity and sanitation. At the same time, the wide variety in reports shows that healthcare and education are still not equally available for all citizens.

The immediate need for such improvements in basic services points to the quality of life for residents. Clean water, healthcare, and education are a must if the community is to be able to function and individuals to be well. Absence of reliable access to these services aggravates stress, burdens health, and impedes educational opportunities of the children, thus entrenching the pattern of disadvantage. Both these gaps require addressing by the community to foster resilience and social equity.

This is supported by Cantelmi, Di Gravio, and Patriarca (2021), who advocated for an integrated resilience proposition to critical infrastructure, where one must guarantee that the critical services are both robust and available. Hariram et al. (2023) further suggest a model that combines efforts in building resilience with sustainable development goals, and therefore propose that service provision needs to resonate with community needs to bring about durability and growth in the long run. Stakeholders can positively impact the living conditions and well-being of families in the relocation area by giving priority to the improvements in basic services.

Table 12
Effectiveness of post-relocation support in facilitating long-term adaptation

	Mean	Std. Deviation	Verbal Meaning
I believe that the relocation has made our community more resilient to natural disasters.	2.4918	.82912	Disagree
The relocation efforts have improved our community's ability to recover from challenges.	2.4754	.74401	Disagree
I feel safer in this relocation area compared to my previous community.	2.3607	.77530	Disagree
Our new location has sustainable features that improve the quality of life.	2.5738	.74070	Disagree
The relocation area promotes a sustainable way of living (e.g., energy-saving initiatives, waste management).	2.5410	.94117	Agree

I am confident that the relocation efforts have made our community more resilient in the long term.	2.3934	.71365	Disagree
I feel that the relocation efforts support the sustainability of our environment and resources.	2.5082	.80876	Agree
I see improvements in the community's infrastructure that enhance our resilience.	2.6721	.65119	Agree
The relocation area provides opportunities for us to build a sustainable livelihood.	2.5902	.66776	Agree
The relocation efforts help us prepare for future challenges and uncertainties.	2.5246	.88707	Agree
Composite Mean	2.51312		Agree

Table 12 shows how community members see the effects of relocation on helping the community resist and adapt to changes. Based on the composite mean of 2.51312, there is a slight agreement, and optimism is present in the replies. At the same time, the diversity in how people responded to each question suggests there was a complex and blended experience for residents. As the standard deviation numbers are in the range of .65119 to .94117, there is moderate to high variability in what residents think about living here. Fluctuations over .9 in the SDs show there are significant differences in the experiences of people, linked mainly to how they live sustainably and get ready for future issues. As a result, we see that while some members of the community have noticed the effects of relocation, some still feel they have not benefited as much. On the other hand, items with small SDs such as 0.65119 for infrastructure improvements, show that people have more similar opinions. It seems that the built elements of relocation, such as roads and bridges, are more likely to be planned and built in a similar way in different countries. The results show that people's trust in their ability to recover from disasters is not strong and that their self-confidence may be lacking for rebuilding in the long run. While people acknowledge some sustainability issues, many are not sure if these actions truly lead to lasting safety.

These results emphasize the reconsideration of strategies of relocation with the aim not only to support sustainability but also to reinforce community resilience and fitness. Indeed, the perception of safety and recovery capabilities within the community is expedient for the development of security and trust within relocation efforts. The defectiveness of the relocation process rests partly in residential dissatisfaction, especially if residents don't perceive their new environment aiding their needs or in preparation for future challenges.

In support of this perspective, Suprayitno et al. (2024) argued that the adaptive and inclusive public policy is required to support the effective relocation planning that needs to be applied so that it considers the particular needs and views of the affected communities. Graveline and Germain (2022) also present a historical analysis of disaster risk resilience: It is important to learn from the past to set up effective policies. Stakeholder efforts to improve the effectiveness of relocation efforts and transform a more resilient and satisfied community are structured around community engagement and the use of adaptive strategies.

3 How do community members perceive the effectiveness of relocation efforts in promoting resilience and sustainability, based on their lived experiences?

Table 13
Lived Experiences of the Community Members

Themes	Sub Themes
Risk Perception and Experience	• Environmental Risks • Frequency of Impact
Relocation Preferences and Concerns	• Attitudes Towards Relocation • Important Factors for New Location
Community and Social Aspects	• Impact on Social Relationships • Maintaining Community Bonds
Livelihood and Economic Considerations	• Economic Impact of Relocation • Support for Economic Stability
Participation and Decision-Making	• Community Involvement • Role of Community in Planning
Sustainability and Resilience	• Integration of Sustainable Practices • Long-term Viability Measures
Community Engagement and Participation	• Engagement Strategies • Transparency and Accountability
Resource Allocation and Implementation	• Key Challenges • Timelines for Implementation
Monitoring and Evaluation	• Measuring Success • Long-term Monitoring
Technical Expertise	• Best Practices for Resilience • Key Environmental and Social Factors
Policy and Governance	• Policy Recommendations • Strengthening Local Governance
Community and Social Dynamics	• Maintaining Social Capital • Cultural Heritage Preservation
Economic and Livelihood Strategies	• Creating New Opportunities

	● Long-term Economic Impacts
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A complex set of themes and subthemes derived from the qualitative findings regarding the challenges and potential of relocation is presented here. This diversity of experiences and perceptions regarding relocation is reflected in each theme.

Theme 1 Risk Perception and Experience

Environmental Risks. The message of Risk Perception and Experience is that community members are aware of risks like floods, landslides, and different types of pollution. Their attitudes about safety and their health are shaped a lot by these risks. People who have gone through major weather and environmental disasters are especially concerned about these risks, as they have seen firsthand the results of such events. Because people are now more sensitive, they often want to move to somewhere new, as they weigh up the pros and cons of saying goodbye to their usual place of residence. Seeing the trauma together, the community demands that better living spaces be found, even if that means relocating. Policymakers and planners need to realize that community members are guided by their past experiences as well as recent challenges. By understanding these effects, new relocation strategies can be designed that help address both body and mind concerns of the community.

Frequency of Impact. This sub-theme discusses how continuous environmental hazards fill residents with unrest and a feeling of vulnerability. When communities keep being threatened, it can become normal for individuals to feel anxious and stressed all the time. Living with risk all the time can shape people to worry about survival instead of enjoying good lives. Because of this, moving seems to be the only option for them. Also, as these events happen more often, people might become less alarmed, seeing them as a usual part of life, which makes deciding to leave more difficult. Local people might slowly come to accept their situation, constantly going through risk and recovery. Planners must communicate with the community to know about their lives and base their relocation plans on this knowledge. Pointing out that environmental damage is common and can be serious can encourage people in the community to be more helpful with relocation schemes

Theme 2 Relocation Preferences and Concerns

Attitudes Towards Relocation. Relocation Preferences and Concerns highlights the many different feelings people have about relocating. There is a wide range of emotions in the community about moving, including joy at the prospect of safely leaving and worry about saying goodbye to what is known to them. Many hope for increased safety when they decide to move, while some are fearful of moving away and losing their community life. It shows that we should take both individual and group preferences into account when making plans to move. Planners should be able to handle these feelings and make sure everyone is safe, the continuity of family life is maintained, and they all feel they belong. Getting to know the opinions of community members can give them a greater sense of involvement in the process.

Important Factors for New Location. This sub-theme highlights the importance of checking what services and amenities are available in the places being considered for a new location. Many community members express worries that the new site may not give them access to healthcare, education, and jobs they depend on. These aspects play a key role in the quality of their lives. People might not want to leave their homes if they think the new location won't provide all the necessary services. Thus, making sure that

any new communities are ready for the needs of the population is necessary for planners. Putting these factors first makes it likelier that relocation will go well and the community will accept the plans.

Theme 3 Community and Social Aspects

Impact on Social Relationships. Relocation significantly influences the social lives of people and is the main focus of the Community and Social Aspects theme. Relocating usually means giving up the social networks that keep you emotionally connected. A lot of people find that close family and friend relationships are important to who they are and how they feel. Not wanting to lose contact with friends, family, and nearby people can cause people to be reluctant about moving. Having a strong sense of community is very important for being resilient, particularly when going through changes. Planners thus need to find ways to support continuous contact among those who relocate, for example, by creating communities that make it easier for them to connect with others.

Maintaining Community Bonds. This sub-theme points out that keeping community ties is very important during a military move. Placing families who relocate nearby each other can help ease feelings of loneliness and keep the community strong. Having them in your life helps you emotionally and also helps you establish new ties in your new community. Methods to encourage people in the community to interact include arranging social events or making dedicated spaces where everyone can interact. Providing a community center and continuous activities makes new places easier to adjust to and helps residents stay happier.

Theme 4 Livelihood and Economic Considerations

Economic Impact of Relocation. The theme of Livelihood and Economic Considerations deals with the main economic issues that people face during their relocation. Lots of residents are worried about losing their jobs and financial stability, mainly if they depend a lot on the local economy and its available jobs. Fears about the economy often stand in the way of people being open to relocation plans. People in the community might be concerned that adequate jobs will be hard to find elsewhere, mainly because some of them have special skills tied to the local work environment. The prospect of taking a financial risk can stop people from making a move to a safer area.

Support for Economic Stability. Helping people resettle in a new place by providing them with adequate support for their economy is necessary. For example, this means setting up work skill programs, offering funding, and working with small businesses in the area to make sure available jobs suit what residents have already learned. In this way, stakeholders can address peoples' worries and develop a better attitude about moving. Focusing on economic stability for people moving new allows them to focus on their future and also increases the chance the relocation will be successful, as a financially stable community tends to adapt well to change.

Theme 5 Participation and Decision-Making

Community Involvement. The theme of Participation and Decision-Making underlines the fact that communities play a crucial part in how relocation is carried out. For relocation to work well, local people should be actively involved and speak out about what they need. When people participate in deciding, they tend to support the action to relocate. Even so, many community members expressed in interviews that they believe they have not been included in the planning process and are dissatisfied as a result,

leading to a sense of resistance. Community involvement relies on making sure information is clear, and every resident has their say about what is discussed and decided.

Role of Community in Planning. Community perspectives in planning focus on the importance of including the community when planning any relocation. Discussing plans and expectations with the residents supports the formation of trust and the urge to collaborate in the planning process. When the local community participates in planning, strategies will be made to meet the local residents' particular challenges and possibilities. When community members, government, and non-governmental organizations join forces, it increases the possibilities for a successful relocation and allows people to take an active part in creating their future.

Theme 6 Sustainability and Resilience

Integration of Sustainable Practices. Sustainability and Resilience as a theme show how important it is to use sustainable methods during the process of relocation. When communities look at relocation, planning methods should consider both the present and the future health of their environment and society. Using eco-friendly methods, strengthening infrastructure within the area, and planning new constructions to withstand future changes to the climate are important for this process. When sustainability is a priority, planners can build environments that are gentler on nature and improve the lives of those who live in them.

Long-term Viability Measures. It stresses the point that relocated communities should have their sustainability practices regularly checked over time. Making sure that the environment, society, and the economy are protected in new developments greatly helps them to flourish for years to come. When planning, efforts must be made to help residents feel like they own the changes happening in their community. Creating a sustainable way of life allows communities to prepare for future problems and provide stability for everyone living there.

Theme 7 Community Engagement and Participation

Engagement Strategies. Community Engagement and Participation as a theme underscores the importance of good engagement tactics in relocations. Using workshops, surveys, and local meetings provides community members with a chance to work and feel connected. The strategies should ensure that all members of the community, especially those feeling left out, can participate. Including residents in the relocation planning can create trust and increase the community's support for the move.

Transparency and Accountability. This sub-theme brings attention to the significance of explanations and updates during the entire process of moving house. For residents to take part in community matters, it is first important that they trust the people in charge. A feeling of being involved and kept informed by the community helps them be more open to redevelopment initiatives. Creating simple and honest channels can assure the community and make the transition for the new residents easier.

Theme 8 Resource Allocation and Implementation

Key Challenges. Resource Allocation and Implementation focuses on the key problems that may occur when relocating a company. Proper implementation relies on enough resources, infrastructure, and support being already set up. Even so, issues such as not having enough funds, dealing with paperwork, and organizing tasks can slow down improvement. To ensure that community members have a good time relocating, these challenges must be found and solved.

Timelines for Implementation. Ensuring there are set timeframes for carrying out work helps keep the community informed and makes sure resources are not wasted. If community members join in deciding on the use of resources, greater transparency can be had, and public funds can be allocated to plans that support the community's values. When stakeholders solve resource allocation issues and work out helpful timelines in advance, the community is likely to be less affected by any hiccups.

Theme 9 Monitoring and Evaluation

Measuring Success. The theme of Monitoring and Evaluation points out that checking and looking at results periodically is important to see if the relocation plan is working as expected. For monitoring to work, one needs to collect information on a range of indicators, including how satisfied the community is, how stable the economy is, and the quality of the environment. Having clear measures for success allows stakeholders to monitor the effect of the move as it happens. For instance, regular surveys can help show how people feel about their lives once they have moved, and looking at things like job and income numbers can tell us if residents have stable jobs and enough money to live on. By using data, planners can make decisions and changes that help the relocation process go more smoothly. Furthermore, having a good system for checking how things went can help find what worked well and what didn't, which is useful for planning similar moves in the future. When success is continually measured, stakeholders both become more accountable and build a culture where the community feels safe to ask questions.

Long-term Monitoring. It stresses the importance of keeping an eye on relocation programs to guarantee they still meet the changing needs of the community over time. By holding regular community meetings and conducting surveys, stakeholders can find out what residents think and feel as time goes on. Having a long-term goal helps planners update their plans and activities to match the changing needs and developments within the community. If residents share their concerns about some aspects of living in the new area, stakeholders can resolve them fast, which improves the results of the project. Staying focused on monitoring in the long run allows new difficulties to be detected that may have gone unnoticed when people first moved to the area. Iterative evaluations help stakeholders confirm that relocation strategies meet what the community wants and help residents get used to their new lives.

Theme 10 Technical Expertise

Best Practices for Resilience. Technical Expertise points out the value of making use of best practices to maintain resilience throughout relocation. Bringing experts from urban planning, environmental science, and social work together can help create healthy and sustainable areas. They use their expertise to improve the design and running of relocation initiatives to ensure that both effectiveness and cultural appropriateness are upheld. As an example, urban planners might create new communities with more green areas and public transport, while social workers look after the psychological needs of those who have been relocated. It is important to incorporate technical knowledge during the planning stage so that stakeholders can come up with solutions for both short-term and long-term problems related to moving. Furthermore, bringing together various experts can result in finding new strategies that increase how prepared communities are and how they cope with such relocation efforts.

Key Environmental and Social Factors. Knowing the most important social and environmental conditions helps create plans that address the individual needs of the community. A thorough understanding of the local situation, like understanding what problems people face in the area and their way of life, lets planners come up with solutions that really help that community. Having an understanding

of the region's environmental risks can guide the authorities where to relocate and which kinds of infrastructure should be improved. It is also important for planners to consider how relocation could change the relationships and cultural identities found in the community. Getting technicians involved in the initial planning makes the relocation more likely to succeed. In this way, plans are realistic and encourage local people to take part in designing their own future, making them more likely to believe in and help with the relocation process.

Theme 11 Policy and Governance

Policy Recommendations. This topic reminds readers how necessary it is to have suitable policies in place to support the relocation of people. Planning strategies should include the thoughts and wishes of community members to be inclusive and fair. Doing this means talking to community members to understand their needs, worries, and dreams, which can result in guidelines that value what is important to the community. When relocation plans are tailored to the local community, stakeholders receive more buy-in from residents. Also, clear and easy-to-follow policies help everyone trust and feel responsible toward those making important decisions. As policies are carried out, their effects should be monitored, and changes should be made when required to keep them up to date with changing conditions. This way of creating policies speeds up relocation and also improves how the community is managed, supporting future development.

Strengthening Local Governance. The sub-theme Strengthening Local Governance points out that improving the capacity of local governments to enforce relocation helps ensure plans are carried out successfully. The partnership between government and community teams usually leads to outcomes that help people and are successful. Encouraging involvement from community partners can lead to well-informed and supported public policies. Making sure there is accountability helps the government gain the trust of the public. Residents are more willing to take responsibility when decision-makers are accountable and listen to them. Teamwork like this ensures that everyone in the community is involved and engaged in making the relocation happen.

Theme 12 Community and Social Dynamics

Maintaining Social Capital. It stresses the key role social capital plays in the process of moving to a new community. Strong social networks help a community stay strong by giving people comfort and making them feel like they belong. Efforts to preserve these connections can make it much easier for people who move to a new place, because they have friends and family they know to help them adjust to a big change. To make this happen, stakeholders should focus on efforts that help people in the community get to know each other, like arranging events or having common areas where people can hang out and talk. By working together to build social capital, stakeholders can help create a more supportive community where everyone feels better and stronger. Additionally, keeping in touch with friends and family helps people feel more at home in a new place, since things they do together and the people they know can make it easier to adjust to their new life.

Cultural Heritage Preservation. The sub-theme of Cultural Heritage Preservation highlights how important it is to take care of and keep alive cultural identity when people move to a new place. As communities move, they sometimes end up leaving behind the customs and traditions that help make them who they are. Strategies that help keep up cultural heritage can make it easier for people in a community to feel connected and like they belong. Engaging community members in the design of new public spaces

and projects helps make sure that the new place still reflects their culture and makes life easier for people who move there. For instance, using some of the local building styles, arts, and traditions in new construction can help keep things feeling connected to the area's past. By focusing on keeping cultural traditions strong, people working in relocation can help residents keep their identity and stay strong, so they feel proud and at home where they are now.

Theme 13 Economic and Livelihood Strategies

Creating New Opportunities. This topic is about finding new chances for people who move to new locations due to floods. It is important to help entrepreneurs, local businesses, and provide job training so individuals can financially support themselves in a new country. Creating new economic channels helps residents adapt better to changes in their community. you could do this by forming partnerships with businesses in the area, which help new immigrants find work and get the correct training. Giving support and access to useful resources for small business development can help support the local economy and inspire self-belief in people living there. Thinking about economic opportunities first can help ensure individuals prosper after relocating and not just survive in their new lives.

Long-term Economic Impacts. To understand the full impact of relocation, we need to look at how it will affect the economy long-term. Those involved should assess the effects of relocation on people as well as on the whole economy in the area. Investing in local infrastructure and support services can boost the local economy and ensure a positive transition for those who move there. This means spending money on roads, transit, and supporting services so that businesses can grow. By understanding the economic effects of moving, decision-makers can plan accordingly and work in line with the community's long-term plans. If stakeholders promote sustainable economic growth, it becomes easier for the community to grow and become prosperous in the future.

Synthesis of Themes

The themes and subthemes are studied more thoroughly to understand the challenges and factors influencing the move. This process brings to light the difficulties in communities and also shows the chances for growth and change. To develop strategies that help communities get through changes, learn to bounce back, and stay strong for the long haul, it's important to look at all these issues together as one package. Stakeholders need to work on community engagement so that residents have a chance to participate and feel cared for throughout relocation. It is also very important to sustain a stable economy, because having financial security matters a lot to the willingness of residents to open their mind to changes. By starting up job training programs and supporting local businesses, stakeholders can help ease worries about job loss and give people the chances they need to do well in their new communities. Furthermore, making sure that culture and nature are kept safe is very important for keeping the special ways and traditions of different communities alive. It means preserving traditions, while also ensuring life becomes more sustainable and kinder to nature with new development. Supporting and involving all people in the city during this big change calls for a range of actions. Special efforts should be made to satisfy the community's different preferences and needs with the services and strategies used. Taking into account social, economic, and environmental factors of relocation encourages residents to feel at home and involved, which can help make the outcomes better and longer lasting. Thus, the process of moving can bring about new opportunities and advantages for individuals and the community alike.

The implications of these findings have far-reaching implications for stakeholders at the center of the relocation process. By and large, they emphasize the immediate need for planning that is inclusive in every

sense, considering community participation and input. If stakeholders are to develop strategies that meet likewise concerns of immediate relocation and long-term sustainability and resilience, they must understand the diverse perspectives and experiences of the community members. Firstly, community engagement in decision-making processes is empowering for the people to be involved with matters, as well as increasing the chances of successful relocation outcomes. The need for forums to foster dialogue and collaboration is crucial and should entail that the voices of the community are heard and utilized in the planning and doing phases.

This is supported by the findings of Aktürk and Lerski (2021), which look at the role of intangible cultural heritage in creating adaptive strategies, as the preservation of cultural identities helps a lot in making the community resilient. Through an awareness of and respect for community traditions and ways of working, stakeholders can develop more culturally sensitive relocation strategies that people will have to agree to. Schweikert and Deinert (2021) furthermore pointed out that local knowledge plays a role in disaster management, thus indicating the necessity of community involvement when developing context-specific, effective relocations. Using this data, stakeholders can build a more resilient, involved, and cohesive community throughout the entire process of relocation that can create better outcomes for all.

4 Challenges and opportunities that stakeholders and communities encountered in enhancing the sustainability of relocation efforts.

Table 14			
<i>Challenges</i>	Mean	Std. Deviation	Verbal Meaning
Limited funding and resources are a major challenge in making relocation efforts sustainable.	2.5574	.84705	Agree
There is insufficient support from local authorities to make our community more sustainable.	2.5246	.78754	Agree
Our community lacks proper waste management and recycling options.	2.4590	.78685	Disagree
Poor infrastructure and utilities make it challenging to maintain a sustainable lifestyle here.	2.6230	.73403	Agree
Limited job opportunities affect the economic sustainability of relocated families.	2.6721	.92595	Agree
Environmental issues (e.g., pollution, water scarcity) pose a challenge to sustainability here.	2.5246	.84866	Agree
Limited community engagement affects the success of sustainability efforts in relocation.	2.6557	.96411	Agree
Accessibility to basic services remains a challenge for our community.	2.5574	.82714	Agree
I feel that sustainability was not a priority during the relocation planning process.	2.5574	.80673	Agree
Our community lacks awareness and training on sustainable practices.	2.6066	.98790	Agree
Composite Mean	2.57378		Agree

Table 14 outlines what stakeholders and communities struggle with as they work towards increasing the sustainability of relocation. On average, people who took the survey agree that many problems continue in the relocated communities. The range for standard deviations is 0.73 to 0.99, meaning there is a reasonable to high difference in how people answered each item. If the standard deviation around an item is higher, especially if it is over 0.9, it usually indicates that opinions on community challenges can vary and many may face them less seriously. Things like poor infrastructure and utilities tend to have a low standard deviation, suggesting that a lot of participants agreed that the issue makes sustainability difficult. While there was strong agreement on the appeals of low funding, unsupportive local administrations, and insufficient community awareness, waste management stands out as not being perceived as challenging by all stakeholders. This may explain why community contexts are different or environmental concerns do not affect them all the same way. On the whole, the results indicate that stakeholders are aware of the difficulties they encounter after moving, yet perceptions of the difficulties vary greatly among the community. It underlines the benefit of specific measures designed to tackle shared problems and those that affect people of different backgrounds differently.

The findings validate this need for targeted interventions designed to address the concerned challenges. Without adequate funding and support, sustainability efforts could fail, which could result in long-lasting detrimental effects on the community's resiliency and general quality of life. Stakeholders must, however, consider these challenges to ensure that the relocation efforts not only meet their end but also that they are sustainable for the long term.

According to Uchiyama, Ismail, and Srevenson (2021), investments in infrastructure play a very important role, particularly in disaster risk reduction, and enhancing infrastructure is a strategy that could promote sustainability. Additionally, de Murieta, Galarraga, and Olazabal (2021) underlined the need for communities themselves to creatively adapt to changing environments, for meaningful action towards building resilience, and the fact that this requires appropriation of funding, resources as well. Stakeholders can create a more sustainable and conducive environment for the relocated families by paying attention to these areas.

Table 15			
<i>Opportunities</i>	Mean	Std. Deviation	Verbal Meaning
There are opportunities for creating community-led sustainability initiatives in the relocation area.	2.5902	.73885	Agree
Our community has the potential to develop local businesses that support sustainability.	2.6393	.75350	Agree
Collaboration with NGOs and local organizations could improve our sustainability efforts.	2.7377	.98152	Agree
The relocation area has resources (e.g., land, water) that can support sustainable practices.	2.5902	.76107	Agree
I see potential for educational programs that teach sustainability to community members.	2.5246	.92388	Agree
Our community is willing to adopt sustainable practices if given the right tools and resources.	2.6557	.85411	Agree
The relocation area has space and potential for green initiatives like urban gardening.	2.6885	.90445	Agree

Partnerships with the private sector could help improve our community's sustainability.	2.6557	.83437	Agree
There are opportunities to improve infrastructure in ways that promote resilience.	2.7541	.80944	Agree
I believe that the community's resilience could be strengthened with more resources for sustainable development.	2.8197	1.07251	Agree
Composite Mean	2.66557		Agree

Table 15 lists what locals think could be done to improve sustainability in the relocation area. The overall score suggests that those taking part in the study are mainly hopeful about sustainable development initiatives. From about 0.73 to 1.07, the standard deviations point to some uniformity in how people view the opportunities on offer. Among the items studied, the one with the highest standard deviation (1.07251) measures the belief that available resources could build stronger communities. As a result, there are different opinions within the community, with some individuals being very optimistic while others may doubt or be unsure. Likewise, the partnership NGOs and local organizations depends a lot on the country (0.98), meaning that some countries feel more experienced with these partnerships than others. When potential for local efforts and community initiatives have less variation, it means there is a higher level of trust and shared enthusiasm for working toward sustainability. This contract recognizes the community's positive attitude towards sustainability when given the right help. On the whole, people think that there are opportunities for sustainable development, but the differences in their answers prove that it is necessary to pay attention to the needs and expectations of each community. Success in this area would depend a lot on choosing strategies that use nearby resources, encourage teamwork, and supply needed education and tools.

These findings demonstrate how the efforts of the community should be prioritized to provide sustainability. Recognizing these opportunities enables stakeholders to develop initiatives that will promote and enable active participation in sustainability efforts on the part of the residents. The fact that the community is willing to adopt sustainability practices shows that the time is ripe for change, and can therefore be used to influence positive movement.

In support of this point, Yang, Keating, & Sourn (2024) described how community involvement is necessary for the success of 'adaptive capacity.' Additionally, Rani, Kamarudin, and Razak (2020) also insisted on the incorporation of local knowledge and practices in disaster management as it could make sustainability initiatives more effective. The study argues that if we focus on these opportunities, there will be a resilient community, and they will take part in sustainable development efforts.

Summary of Quantitative Result

The implications of these findings are important for exploring attitudes of the resettlement community toward relocation. Since the respondents are predominantly young, any strategies of relocation will need to take into account the values, aspirations, and concerns of this demographic. They (young people) tend to be more inclined to sustainability, to be more innovative. And that could perhaps generate demand for more resilient, innovative relocation solutions. Inviting this age group to engage in the process of planning could improve the relevance and utility of the relocation strategies to be in line with this community's vision for the future.

Research suggests that diversity should be included in the age perspective of any disaster management and relocation planning. To have effective disaster mitigation strategies, communities must be engaged comprehensively, where there is engagement of the communities with various experiences and needs of diversified age groups, as reported by ReliefWeb (2022). It also notes that the UNHCR (2023) points out that understanding the profile of populations affected is key to delivering adequate responses that consider their vulnerabilities and support resilience. Stakeholders can better ensure inclusive and effective relocation decisions by allowing the younger members of the community to have their say.

Data backs up the need to consider gender dynamics in the process of disaster management and relocation planning. In the context of the differentiated impacts on displacement of different demographic groups, especially women, Collado and Orozco (2020) argue for the need for innovative solutions. According to Abenir, Manzanero, and Bollettino (2022), women experience disruptions to social, economic status that render them unable to fully participate in recovery efforts; accordingly, there is a need for planning inclusive of the distinct vulnerabilities and opportunities presented by women in disaster contexts. The relocation process must be a participatory, not an approach embodied in planners, as this will assist in achieving a more equitable and effective response to the threats of environmental hazards.

The residency data has important implications for planning and policymaking. The assumption of dominant long-term residents suggests that residents who have a strong connection and stake in the place can contribute to social cohesion and collective resilience. But it also indicates that relocations must consider the existing ties and histories of these residents. The attachment the long-term residents have for their homes and livelihoods becomes a reason to develop approaches that respect it, as long-term residents have specific needs and concerns based on where their homes and livelihoods are.

Existing research emphasizes that long-term residency views must be included in relocation planning. According to Santos and Membrebe Jr. (2023), resilience and sustainability should be incorporated, and humans who have been living in the area for more than twenty years must be considered as they develop relocation strategies. Tan (2022) also points out how important a factor good planning is in shaping economic opportunities as well as helping sustainable development, especially for prior communities who settled elsewhere. Stakeholders can cultivate more effective and inclusive relocation strategies that live up to these commitments to community ties in the light of environmental changes if they prioritize the voices of long-term residents.

Development Plan: Integrating Resilience and Sustainability through Relocation in Poblacion Bustos, Bulacan

I. Executive Summary:

Poblacion Bustos, a central community in Bulacan, Philippines, faces significant and recurring risks, primarily from flooding exacerbated by its proximity to the Angat River and the operational dynamics of the Bustos Dam. This vulnerability undermines the community's long-term sustainability across environmental, social, and economic dimensions. This Development Plan proposes a strategic and integrated approach centered on the relocation of highly vulnerable populations and critical infrastructure within Poblacion Bustos to safer, less hazard-prone areas. This proactive measure is envisioned not merely as a reactive response to existing risks but as a catalyst for building a more resilient and sustainable future for the entire community.

The plan recognizes the interconnectedness of resilience and sustainability. By carefully selecting relocation sites and employing sustainable construction practices, green infrastructure, and resource-

efficient technologies, the development aims to minimize environmental impact while enhancing the community's capacity to withstand future shocks and stresses.

II. Context and Needs Assessment:

A.1. Contextual Overview:

Geographic Location and Demographics: Poblacion is the central administrative and commercial hub of Bustos Municipality in Bulacan Province, Central Luzon, Philippines. It is characterized by a relatively high population density compared to other *barangays* in Bustos. The population likely comprises a mix of age groups, with a significant proportion of younger individuals, and varying household sizes.

Socio-economic Profile: The community in Poblacion likely exhibits a diverse range of livelihoods, including small businesses, market vendors, local government employees, service sector workers, and potentially some residents engaged in agriculture in the periphery. Income levels are likely moderate, reflecting Bustos' classification as a 2nd class municipality, with the presence of marginalized sectors potentially facing financial constraints. Housing conditions may vary from more permanent structures to informal settlements, particularly in hazard-prone areas. Access to basic services is generally better in Poblacion compared to more rural *barangays*.

Cultural and Social Fabric: Poblacion likely possesses a strong sense of community, with established social networks and traditions of mutual help (*bayanihan*). Cultural practices, local festivals (e.g., related to the patron saint, Santo Niño, and broader Bulacan festivals like *Pabuklod* and *Singkaban*), and historical attachment to the area are important aspects of the community's identity.

Environmental Context and Hazard Exposure: Poblacion Bustos is situated within the Angat River Basin and is highly susceptible to flooding. This is exacerbated by heavy monsoon rains, typhoons, and the operational dynamics of the Bustos Dam. The risk of sudden and intense flooding poses a significant threat to lives, livelihoods, and infrastructure. While less prominent, other potential hazards could include localized landslides in adjacent hilly areas and periods of water scarcity.

Governance and Infrastructure: Poblacion is the seat of the local government, housing municipal offices and essential services. Existing infrastructure includes roads, drainage systems, water and electricity supply, and communication networks. The capacity and resilience of this infrastructure to withstand and recover from hazards are critical concerns.

A.2. Needs Assessment:

Enhanced Understanding of Vulnerability:

Detailed Hazard Mapping: Precise and updated maps delineating specific flood-prone zones and other potential hazards within Poblacion are needed.

Vulnerable Population Identification: Comprehensive data on the location, specific needs, and capacities of vulnerable populations (elderly, children, PWDs, low-income households) within these hazard zones is crucial for targeted interventions.

Infrastructure Risk Assessment: An assessment of the vulnerability of critical infrastructure (schools, health centers, markets, government buildings, transportation networks) to identified hazards is necessary.

Improved Disaster Preparedness and Risk Reduction:

Effective Early Warning Systems: Strengthening and disseminating timely and accessible early warnings for flood events and other hazards is paramount.

Accessible Evacuation Centers: Ensuring the availability of adequate, safe, and accessible evacuation centers equipped to meet the needs of all community members, including vulnerable populations.

Community-Based Disaster Risk Reduction (CBDRRM): Empowering residents with knowledge and skills in disaster preparedness, response, and first aid through community-led initiatives.

Household-Level Preparedness: Increasing the adoption of household-level preparedness measures, such as emergency kits ("go-bags") and family disaster plans.

Sustainable Relocation Planning and Implementation (if deemed necessary):

Participatory Relocation Strategies: If relocation of highly vulnerable populations is considered, a transparent and inclusive process that respects the rights and preferences of affected communities is essential.

Suitable and Sustainable Relocation Sites: Identification of safe and environmentally sound relocation sites with access to essential services and livelihood opportunities.

Culturally Sensitive Housing and Community Development: Development of housing and community spaces in relocation areas that are culturally appropriate, resilient to future hazards, and environmentally sustainable.

Strengthened Adaptive Capacities and Livelihood Resilience:

Livelihood Diversification Programs: Supporting initiatives that promote diverse and sustainable livelihood options to reduce economic vulnerability to disasters.

Skills Training and Education: Providing access to training and education programs that enhance employability and adaptability in the face of environmental and economic changes.

Financial Inclusion: Improving access to financial resources, such as savings and credit facilities, to support recovery and build resilience.

Environmental Sustainability Initiatives:

Improved Waste Management: Strengthening the implementation of ecological solid waste management practices, including segregation, recycling, and composting.

Water Resource Management: Promoting sustainable water usage and protecting local water sources.

Green Infrastructure Development: Integrating green spaces and nature-based solutions to mitigate flood risks and enhance the urban environment.

Enhanced Governance and Collaboration:

Strengthened Local Government Capacity: Providing resources and training to the LGU and MDRMO to effectively plan and implement resilience and sustainability initiatives.

Multi-Stakeholder Collaboration: Fostering partnerships among government agencies, civil society organizations, the private sector, and the community to address shared challenges.

Integration of DRRM and CCA into Development Planning: Ensuring that disaster risk reduction and climate change adaptation are central considerations in all local development plans and policies.

A.3. Conclusion:

Understanding the specific context and addressing the identified needs of the community profile in Poblacion Bustos is crucial for developing effective and sustainable solutions to the persistent challenges posed by hazards, particularly flooding. A comprehensive and participatory approach that integrates resilience and sustainability principles is essential to building a safer, more prosperous, and environmentally sound future for the residents of Poblacion Bustos. This assessment provides a foundation for developing targeted interventions and a strategic development plan that prioritizes the well-being and long-term resilience of the community.

B. Risk and Vulnerability Assessment:

A comprehensive Risk and Vulnerability Assessment (RVA) is a critical first step towards developing effective strategies for integrating resilience and sustainability, particularly in the context of potential relocation efforts in Poblacion Bustos, Bulacan. This document outlines the essential context and identifies the key needs that necessitate a thorough RVA.

Context:

Poblacion Bustos, as the central hub of the municipality, is characterized by a relatively high population density, a mix of residential, commercial, and administrative functions, and significant social, economic, and cultural importance. Situated within the Angat River Basin and downstream of the Bustos Dam, the community faces a **significant and recurring threat of flooding**. Recent events, such as the damage to the Bustos Dam's rubber gate in May 2025 and historical flooding incidents, underscore the urgency of understanding and addressing these risks.

The existing context reveals several factors that contribute to the vulnerability of Poblacion Bustos:

Geographic Location: Proximity to the Angat River and its low-lying topography make it inherently susceptible to riverine and flash flooding, particularly during heavy monsoon rains and dam releases.

Climate Change Impacts: Increasing frequency and intensity of extreme weather events due to climate change are likely to exacerbate the existing flood risks.

Infrastructure Limitations: Existing drainage infrastructure may be inadequate to handle extreme rainfall events, contributing to localized flooding. The structural integrity and operational management of the Bustos Dam directly influence downstream flood risks.

Socio-economic Conditions: A significant portion of the population may belong to marginalized sectors with limited resources for preparedness, response, and recovery. Housing conditions in vulnerable areas may be substandard and highly susceptible to damage.

Demographic Profile: The presence of vulnerable populations such as the elderly, children, and persons with disabilities necessitates a nuanced understanding of their specific needs and challenges during hazard events.

Land Use Patterns: Unplanned development in flood-prone areas may have increased the community's exposure to risks.

Limited Localized Data: While some provincial-level hazard maps and studies exist, detailed, community-specific data on the frequency, intensity, and localized impacts of various hazards within Poblacion Bustos may be limited.

Needs Assessment for Risk and Vulnerability Assessment:

To effectively inform a development plan focused on integrating resilience and sustainability through potential relocation, a comprehensive RVA for Poblacion Bustos must address the following key needs:

1. Detailed Hazard Identification and Mapping:

Need: Precise mapping of all potential hazards affecting Poblacion Bustos, including varying flood depths and extents for different return periods, potential landslide-prone areas (especially in the periphery), and areas susceptible to water scarcity or other climate-related risks.

Why: Accurate hazard maps are crucial for identifying the most at-risk zones and informing decisions regarding relocation suitability and infrastructure development.

2. In-depth Vulnerability Assessment:

Need: A thorough assessment of the vulnerability of different population groups, critical infrastructure

(schools, hospitals, government buildings, utilities), housing types, and economic activities to the identified hazards. This includes analyzing their physical, social, economic, and environmental susceptibility.

Why: Understanding the specific vulnerabilities of different elements within the community is essential for tailoring risk reduction measures and ensuring equitable relocation strategies.

3. Analysis of Frequency, Intensity, and Impact of Hazards:

Need: Historical data analysis and modeling to determine the frequency and intensity of past hazard events, particularly flooding, and to project potential future scenarios under changing climate conditions. Assessment of the direct and indirect impacts of these hazards on lives, livelihoods, infrastructure, and the environment.

Why: This analysis will quantify the level of risk and justify the need for proactive interventions like relocation, as well as inform the design standards for resilient infrastructure.

4. Evaluation of Existing Coping Mechanisms and Adaptive Capacities:

Need: An assessment of the current strategies employed by the community and local institutions to cope with and adapt to hazards. This includes evaluating the effectiveness of early warning systems, evacuation procedures, community networks, and existing infrastructure.

Why: Identifying existing strengths and weaknesses in coping mechanisms and adaptive capacities will inform the development of targeted interventions and support programs.

5. Identification of Vulnerable Populations and their Specific Needs:

Need: Detailed identification and mapping of vulnerable populations (elderly, children, PWDs, low-income households) within Poblacion Bustos, along with an understanding of their specific vulnerabilities, needs, and capacities in the context of different hazards.

Why: This ensures that any relocation or resilience-building efforts are inclusive and address the unique challenges faced by these groups.

6. Assessment of Governance and Institutional Capacity:

Need: Evaluation of the capacity of local government units (LGUs), disaster management agencies (MDRRMO, PDRRMO), and other relevant institutions to conduct risk assessments, implement risk reduction measures, and manage potential relocation processes.

Why: Identifying gaps in institutional capacity will inform the need for training, resource allocation, and inter-agency coordination.

7. Community Participation and Stakeholder Engagement:

Need: Active and meaningful engagement of all stakeholders, particularly the affected communities, in the RVA process. This ensures that local knowledge and perspectives are incorporated and builds trust and ownership in subsequent development plans.

Why: Community participation is crucial for the success and sustainability of any relocation or resilience-building initiative.

C. Sustainability Assessment of Current Situation:

Context:

Geographic and Environmental Setting: Poblacion Bustos is the central area of the municipality of Bustos, located in Bulacan Province, Central Luzon, Philippines. It is situated within the Angat River Basin, making it susceptible to flooding from the river and potential releases from the Bustos Dam upstream. The area experiences a tropical monsoon climate with distinct wet and dry seasons. Understanding the specific topography, water systems, and natural resources of Poblacion is fundamental.

Socio-demographic Profile: As the central hub, Poblacion likely has a higher population density compared to other barangays in Bustos. Understanding the demographic composition (age structure, household size), socio-economic conditions (income levels, employment sectors), cultural aspects, and the presence of vulnerable populations (elderly, children, PWDs, low-income families) is essential for a socially informed sustainability assessment.

Economic Activities: Poblacion serves as the commercial and administrative center of Bustos. Key economic activities likely include small businesses, market trade, local government services, and potentially some light industry or agriculture in the periphery. Assessing the environmental and social impacts of these economic activities is crucial.

Existing Infrastructure and Services: Evaluating the current state of infrastructure in Poblacion, including water supply, sanitation, waste management, transportation, energy, and communication networks, is necessary to determine their sustainability and resilience. Access to social services like healthcare and education also plays a significant role in social sustainability.

Governance and Policy Framework: Understanding the local governance structures, development plans (if any specific to Poblacion), environmental regulations, and disaster risk reduction and climate change adaptation strategies at the municipal and provincial levels provides the policy context for the sustainability assessment.

Historical and Cultural Context: Recognizing the historical development and cultural heritage of Poblacion can inform sustainable development strategies that respect local traditions and values.

Recent Events and Trends: The recent damage to the Bustos Dam's rubber gate (May 2025) and the recurring history of flooding highlight the urgent need to address disaster risks sustainably. Trends in urbanization, population growth, and climate change impacts on the region also need consideration.

Needs Assessment:

A sustainability assessment of Poblacion Bustos is needed to:

Identify Key Sustainability Challenges and Opportunities: Pinpoint the most pressing environmental, social, and economic issues facing Poblacion, as well as potential pathways for more sustainable development. This includes understanding the impacts of flooding, waste management practices, resource consumption, and economic activities.

Establish Baseline Data and Indicators: Develop a set of measurable indicators across the environmental, social, and economic pillars to assess the current state of sustainability in Poblacion. This baseline data will be crucial for tracking progress and evaluating the effectiveness of future interventions.

Inform Development Planning and Policy Decisions: Provide evidence-based information to guide local government units, businesses, and community organizations in formulating sustainable development plans, policies, and programs specific to Poblacion Bustos. This includes informing decisions related to land use, infrastructure development, resource management, and disaster risk reduction.

Enhance Community Awareness and Engagement: Raise awareness among residents, businesses, and other stakeholders about the importance of sustainability and encourage their active participation in sustainable practices and initiatives.

Support Resource Mobilization: A well-articulated sustainability assessment can help in identifying funding opportunities from government agencies, NGOs, and international organizations for sustainable development projects in Poblacion.

Monitor Progress and Evaluate Impact: Provide a framework for monitoring the effectiveness of sustainability initiatives over time and evaluating their impact on the environment, society, and economy of Poblacion Bustos.

Address Specific Vulnerabilities: The assessment should specifically address the sustainability challenges faced by vulnerable populations within Poblacion, ensuring that development initiatives are inclusive and equitable.

Integrate Disaster Risk Reduction and Climate Change Adaptation: Given the high vulnerability to flooding, the sustainability assessment must explicitly integrate DRR and CCA considerations into all three pillars (environmental, social, and economic). This will ensure that development efforts enhance resilience and reduce future risks.

D. Stakeholder Analysis:

To effectively plan for the integration of resilience and sustainability through relocation in Poblacion Bustos, a thorough **Stakeholder Analysis** is crucial. This analysis identifies all relevant individuals, groups, and organizations who have an interest in or can influence the relocation project. Understanding their context, needs, potential impacts, and levels of influence is fundamental for successful planning and implementation.

Context of Stakeholder Analysis in Poblacion Bustos: The context for a stakeholder analysis in this scenario is shaped by several key factors:

Environmental Vulnerability: Poblacion Bustos faces significant risks from flooding, primarily due to its proximity to the Angat River and the operational dynamics of the Bustos Dam. This shared vulnerability creates a common concern among many stakeholders.

Proposed Relocation: The central element is the proposed relocation of at-risk communities and infrastructure. This will directly and indirectly affect various stakeholders, creating potential for both support and resistance.

Sustainability Goals: The project aims to integrate sustainability principles, which introduces another layer of stakeholders interested in environmental protection, resource management, and long-term community well-being.

Local Governance and Development Plans: The Municipality of Bustos, guided by provincial development plans, will play a central role in the project. Their priorities, resources, and political considerations are critical.

Community Dynamics: Poblacion Bustos has its own social structures, cultural norms, and power dynamics that will influence stakeholder engagement and the acceptance of the relocation plan.

Economic Activities: Various economic activities within Poblacion, from small businesses to agriculture in surrounding areas, will be impacted by relocation and sustainability initiatives.

Needs Assessment of Stakeholders:

A comprehensive needs assessment is essential to understand the specific concerns, priorities, and requirements of each stakeholder group. This will inform how they might be affected by and how they can contribute to the development plan. Key stakeholder groups in Poblacion Bustos and their potential needs include:

1. At-Risk Communities in Poblacion Bustos:

Needs: Safe and secure housing in the relocation site, minimal disruption to livelihoods and social networks, culturally appropriate housing and community design, access to basic services (water,

sanitation, electricity, healthcare, education), clear and transparent communication about the relocation process, participation in decision-making, and support for the transition.

Concerns: Loss of ancestral homes and community ties, uncertainty about the new environment and livelihoods, adequacy of compensation and support, potential for social fragmentation in the new site.

2. Local Government Unit (Municipality of Bustos):

Needs: Effective and efficient relocation planning and implementation, financial and technical resources, community acceptance of the plan, alignment with local development goals, mitigation of potential social unrest, and demonstration of good governance.

Concerns: Financial burden of relocation, logistical challenges, political implications of displacement, ensuring the sustainability of the new development, and managing potential conflicts among stakeholders.

3. Provincial Government of Bulacan:

Needs: Alignment with provincial development and disaster risk reduction plans, ensuring the safety and well-being of its constituents, sustainable development within the province, and effective use of provincial resources.

Concerns: Potential strain on provincial resources, ensuring the project's long-term viability, and addressing potential cascading impacts on other municipalities.

4. National Government Agencies (e.g., National Housing Authority, Department of Social Welfare and Development, Department of Environment and Natural Resources, National Disaster Risk Reduction and Management Council):

Needs: Adherence to national policies and guidelines on housing, social welfare, environmental protection, and disaster risk reduction, efficient allocation of national resources, and successful implementation of a potentially replicable model.

Concerns: Ensuring accountability and transparency in the use of funds, coordinating efforts across different agencies, and addressing potential legal and regulatory hurdles.

5. Businesses and Market Vendors in Poblacion:

Needs: Minimal disruption to business operations during relocation (if applicable), opportunities for economic activity in the new location, clarity on future economic development plans for both the original and relocated areas, and a stable and conducive business environment.

Concerns: Loss of customers and market access during transition, uncertainty about the economic viability of the new location, and potential changes in local economic dynamics.

6. Landowners and Developers in Potential Relocation Sites:

Needs: Fair compensation for land acquisition (if applicable), clear guidelines and processes for development, and potential opportunities for investment and economic growth.

Concerns: Potential for land speculation, environmental regulations, and community resistance to new developments.

7. Civil Society Organizations (CSOs) and Non-Governmental Organizations (NGOs):

Needs: To advocate for the rights and needs of vulnerable populations, ensure community participation and social justice in the relocation process, and promote sustainable development practices.

Concerns: Potential for displacement to exacerbate existing inequalities, lack of transparency or accountability in the process, and inadequate attention to the needs of marginalized groups.

8. Religious Institutions and Community Leaders:

Needs: To provide spiritual and social support to affected communities, maintain community cohesion, and facilitate communication and understanding among stakeholders.

Concerns: Disruption of community life and religious practices, and the potential for social fragmentation.

9. General Public (Residents of Poblacion Bustos not directly relocated):

Needs: Assurance that the relocation plan will benefit the entire community in the long run (e.g., reduced flood risk for all, improved infrastructure), minimal disruption to their daily lives, and transparency in the planning and implementation process.

Concerns: Potential for increased traffic or strain on resources in relocation areas, and the future use and development of the vacated high-risk zones.

10. Media:

Needs: Access to accurate and timely information about the project to inform the public.

Concerns: Potential for misinformation or misinterpretation, and the need to balance reporting on the challenges and the potential benefits of the project.

III. Vision and Objectives:

A. Vision Statement

We envision a **vibrant and thriving Poblacion Bustos** where communities, once vulnerable to environmental hazards, now reside in **safe, resilient, and sustainably developed environments**. Through a carefully planned and community-driven relocation approach, we aspire to create a future where:

Safety and Well-being are Paramount: All residents live free from the constant threat of environmental disasters, with access to secure housing, essential services, and a healthy environment that safeguards their lives and livelihoods.

Sustainability is integrated: The relocated communities and the broader Poblacion embrace ecological harmony through green infrastructure, resource efficiency, and climate-conscious development, ensuring a healthy planet for present and future generations.

Community Flourishes: Strong social bonds, cultural heritage, and a sense of belonging are preserved and strengthened in the new environments, fostering inclusive and equitable communities where all residents have opportunities to prosper.

Economic Resilience is Built: Diversified and sustainable economic opportunities thrive in both the relocated areas and the revitalized original zones, creating a robust and equitable local economy that can withstand future challenges.

Governance is Collaborative: A transparent and participatory governance framework empowers residents and stakeholders to actively shape their future, fostering trust and ensuring the long-term success and adaptability of the integrated resilience and sustainability initiatives.

B. Strategic Objectives:

Overarching Goal: To establish safe, resilient, and sustainable communities for populations at high risk in Poblacion Bustos through a well-planned and participatory relocation process that integrates environmental, social, and economic considerations.

Strategic Objectives:

1. Enhance the Safety and Reduce Vulnerability of At-Risk Populations:

Specific Outcome: Significantly reduce the exposure of vulnerable communities and critical infrastructure in Poblacion Bustos to identified hazards (primarily flooding) through strategic relocation to safer zones by a specified timeframe.

Key Activities: Identify and prioritize high-risk areas and populations, secure suitable and safe relocation sites, plan and execute the physical relocation of households and essential infrastructure.

2. Develop Sustainable and Resilient Relocation Sites:

Specific Outcome: Establish well-planned relocation sites that adhere to principles of environmental sustainability, climate resilience, and resource efficiency.

Key Activities: Implement sustainable land-use planning, design and construct resilient housing and infrastructure (e.g., elevated structures, flood-resistant materials), integrate green infrastructure (e.g., rainwater harvesting, permeable pavements, urban green spaces), promote renewable energy adoption, and establish efficient waste and water management systems.

3. Ensure a Just and Participatory Relocation Process:

Specific Outcome: Implement a relocation process that is transparent, inclusive, culturally sensitive, and respects the rights and needs of the affected communities.

Key Activities: Conduct thorough community consultations and participatory planning, provide adequate compensation and resettlement assistance, ensure access to information and grievance mechanisms, preserve social networks and cultural heritage in the relocation sites, and build local capacity for self-governance.

4. Promote Sustainable Livelihoods and Economic Opportunities:

Specific Outcome: Facilitate the transition and development of sustainable livelihoods and diverse economic opportunities for relocated communities, contributing to their long-term economic resilience and well-being.

Key Activities: Conduct skills assessments and provide relevant training programs, support the establishment of local businesses and cooperatives, promote sustainable agricultural practices (if applicable in the new location), and foster linkages with existing and new economic sectors.

5. Strengthen Community Resilience and Adaptive Capacity:

Specific Outcome: Enhance the capacity of both the relocated communities and the remaining population in Poblacion Bustos to prepare for, respond to, and recover from future hazards and climate change impacts.

Table 2: Likert Scale Table Descriptor and Interpretation

Key Activities: Implement community-based disaster risk reduction and management (CBDRM) programs, establish effective early warning systems, conduct regular drills and awareness campaigns, strengthen local emergency response capabilities, and promote climate change adaptation strategies.

6. Foster Environmental Sustainability in the Broader Poblacion Bustos Area:

Specific Outcome: Implement measures to improve the environmental quality and sustainability of the entire Poblacion Bustos area, including the vacated high-risk zones.

Key Activities: Rehabilitate vacated high-risk areas through greening initiatives and flood mitigation measures, improve waste management and sanitation systems across Poblacion, promote environmental awareness and education, and protect and enhance local biodiversity.

7. Establish Effective Governance and Collaboration:

Specific Outcome: Create a robust and collaborative governance framework that ensures the efficient, transparent, and accountable implementation, monitoring, and evaluation of the relocation and sustainable development plan.

Key Activities: Establish a multi-stakeholder steering committee, define clear roles and responsibilities for all involved agencies and organizations, develop effective communication and coordination mechanisms, and ensure regular monitoring and evaluation of progress against objectives.

IV. Relocation Strategy and Implementation Plan:

1. Relocation Strategy: A Phased and Integrated Approach

The relocation strategy will be implemented in a phased manner, prioritizing the most vulnerable communities and critical infrastructure. It will be guided by the following principles:

People-Centered: The well-being, safety, and preferences of the affected communities will be paramount throughout the process.

Participatory: Active involvement of all stakeholders, particularly the at-risk communities, in site selection and planning.

Resilience-Focused: Prioritizing sites that significantly reduce exposure to identified hazards (primarily flooding) and enhance the community's capacity to withstand future shocks.

Sustainability-Driven: Selecting sites and planning development in a manner that minimizes environmental impact, promotes resource efficiency, and fosters long-term socio-economic well-being.

Culturally Sensitive: Respecting the existing social structures, cultural heritage, and community identity of the affected populations.

Integrated Development: Viewing relocation not just as a physical movement but as an opportunity for holistic community development, including housing, livelihoods, infrastructure, and social services.

Transparency and Accountability: Ensuring open communication, clear processes, and accountability mechanisms throughout the relocation process.

A.1. Implementation Plan: Site Selection Criteria and Process

The site selection process will be rigorous and multi-criteria based, involving the following phases:

Phase 1: Hazard and Vulnerability Assessment Review (Building upon Previous Analysis)

Objective: To consolidate and refine existing hazard maps (flood, landslide), vulnerability assessments (population density, socio-economic data), and risk analyses specific to Poblacion Bustos.

Activities:

- Review and validate existing hazard maps from PAGASA, PHIVOLCS, and the Bulacan PDRRMO.
- Overlay hazard maps with population density data to identify the most at-risk communities within Poblacion.
- Analyze socio-economic data to understand the specific vulnerabilities of these communities.
- Identify critical infrastructure (schools, hospitals, government buildings, utilities) located in high-risk zones.

Phase 2: Identification of Potential Relocation Zones (Broad Scan)

Objective: To identify a range of potential relocation zones within or near Bustos that are prima facie safer from identified hazards.

Activities:

- Utilize Geographic Information Systems (GIS) to identify areas outside of high-risk flood zones and landslide-prone areas.
- Consider land availability (public and private), current land use, and potential for future expansion.

- Initial consultations with the Municipal Planning and Development Office (MPDO) and local land experts.
- Preliminary environmental screening to identify areas with significant ecological value or potential environmental constraints.
- Consider accessibility to major transportation routes and existing infrastructure networks.

Phase 3: Multi-Criteria Site Evaluation (Detailed Assessment)

Objective: To evaluate the potential relocation zones against a set of weighted criteria that integrate resilience and sustainability principles.

Criteria:

1. Resilience Criteria (Weight: 40%)

Flood Risk: Low probability of flooding based on historical data, hydrological modeling, and elevation. (High Weight)

Landslide Risk: Low susceptibility to landslides based on geological surveys and slope stability analysis. (Medium Weight)

Proximity to Fault Lines: Distance from active fault lines and seismic risk assessment. (Medium Weight)

Accessibility During Disasters: Availability of safe evacuation routes and access for emergency services. (High Weight)

Water Security: Reliable access to potable water sources that are resilient to climate change impacts. (Medium Weight)

2. Sustainability Criteria (Weight: 35%)

Environmental Impact: Minimal impact on existing ecosystems, biodiversity, and protected areas. (High Weight)

Land Suitability: Soil quality and suitability for sustainable development, including potential for urban agriculture. (Medium Weight)

Resource Efficiency: Potential for incorporating renewable energy sources (solar, wind), rainwater harvesting, and efficient waste management systems. (Medium Weight)

Accessibility to Green Spaces: Potential for integrating parks, green corridors, and recreational areas. (Medium Weight)

Sustainable Transportation: Potential for promoting non-motorized transport and access to public transportation. (Medium Weight)

3. Socio-Economic and Cultural Criteria (Weight: 25%)

Proximity to Livelihood Opportunities: Access to existing or potential employment and economic activities. (High Weight)

Social Cohesion: Potential for maintaining existing social networks and community bonds. (Medium Weight)

Access to Social Services: Proximity to existing or planned schools, healthcare facilities, and community centers. (High Weight)

Cultural Sensitivity: Respect for cultural heritage sites and practices. (Medium Weight)

Land Ownership and Acquisition: Feasibility and fairness of land acquisition processes. (Medium Weight)

4. Process:

Data Collection: Gather detailed data for each potential relocation zone against the identified criteria

(e.g., topographic surveys, soil analysis, hydrological studies, socio-economic profiles).

Stakeholder Consultation: Conduct consultations with the at-risk communities, LGU officials, technical experts, CSOs, and other relevant stakeholders to gather their input and perspectives on the suitability of potential sites.

Weighted Scoring: Apply a weighted scoring system to evaluate each site based on the pre-defined criteria.

Comparative Analysis: Compare the scores of the potential relocation zones to identify the most suitable options.

SWOT Analysis: Conduct a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis for the top-ranked sites.

Phase 4: Community Consultation and Site Selection Validation

Objective: To present the findings of the site evaluation to the affected communities and obtain their feedback before a final decision is made.

Activities:

- Organize community meetings and workshops to present the shortlisted relocation sites and the evaluation criteria.
- Facilitate discussions to address community concerns, preferences, and suggestions.
- Conduct surveys or polls to gauge community preferences for the top-ranked sites.
- Incorporate community feedback into the final site selection decision.

Phase 5: Final Site Selection and Official Endorsement

Objective: To formally select the most suitable relocation site(s) based on the technical evaluation and community feedback.

Activities:

- Present the final site selection recommendation, along with the rationale and community consultation outcomes, to the Municipal Council for official endorsement.
- Secure necessary permits and clearances for land acquisition and development.

A.2 Integration of Resilience and Sustainability in Site Development:

The selected relocation site(s) will be developed with a strong emphasis on integrating resilience and sustainability:

Resilient Infrastructure: Construction of flood-resistant housing (e.g., elevated structures, use of water-resistant materials), climate-resilient infrastructure (roads, drainage, water supply), and backup power systems.

Sustainable Housing: Promotion of energy-efficient building designs, use of sustainable building materials, and integration of green spaces within residential areas.

Green Infrastructure: Development of natural flood management solutions (e.g., bioswales, retention ponds), urban green spaces for cooling and recreation, and protection of existing natural features.

Sustainable Resource Management: Implementation of rainwater harvesting systems, promotion of water-efficient landscaping, and establishment of integrated solid waste management systems (reduce, reuse, recycle, compost).

Livelihood Opportunities: Planning for diverse and sustainable livelihood opportunities within or accessible from the relocation site, promoting green jobs and local economic development.

Community Facilities: Development of accessible and resilient social infrastructure (schools, healthcare facilities, community centers) that can also serve as evacuation centers.

A.3. Monitoring and Evaluation:

The site selection process and the subsequent development of the relocation site will be continuously monitored and evaluated against the defined criteria and objectives. This will ensure transparency, accountability, and adaptive management throughout the implementation process.

This comprehensive Relocation Strategy and Implementation Plan, with its focus on transparent, participatory, and evidence-based site selection criteria, aims to lay a strong

A.4. Community Participation and Consultation:

Overarching Principles:

Inclusivity: Engaging all affected individuals and diverse community groups, including vulnerable populations (elderly, children, PWDs, low-income households, indigenous communities, if present).

Transparency: Providing clear, accessible, and timely information about the relocation plan, its rationale, processes, and potential impacts.

Respect: Acknowledging and valuing the cultural heritage, social structures, and existing knowledge of the affected communities.

Empowerment: Creating opportunities for residents to voice their concerns, contribute their ideas, and participate in decision-making processes.

Accessibility: Ensuring that all consultation methods and information are accessible to everyone, considering language, literacy levels, and specific needs of vulnerable groups.

Continuity: Maintaining ongoing communication and engagement throughout all phases of the relocation project.

2. Phases of Community Participation and Consultation:

Phase 1: Information Dissemination and Awareness Building (Months 1-3)

Objectives:

- Introduce the concept of relocation as a potential strategy for enhancing resilience and sustainability.
- Clearly explain the risks faced by the community due to flooding and other hazards.
- Provide preliminary information about the rationale for relocation, potential benefits, and the overall process.
- Establish initial channels for communication and feedback.

Activities:

- **Community Meetings (Barangay Assemblies):** Conduct initial meetings in easily accessible locations within Poblacion Bustos to present information and answer preliminary questions. Use visual aids, local language, and simplified explanations.
- **Information Campaigns:** Utilize various media (local radio, posters, flyers, social media if widely accessible) to disseminate information about the project and upcoming consultations.
- **Establishment of Information Centers:** Set up accessible information centers within the community where residents can obtain information, ask questions, and register their interest in participating.

- **Focus Group Discussions (FGDs) with Key Informants:** Conduct initial FGDs with community leaders, elders, representatives of vulnerable groups, and local organizations to gather initial perspectives and concerns.

Phase 2: Needs Assessment and Feedback Collection (Months 4-6)

Objectives:

- Gather detailed information about the needs, priorities, concerns, and preferences of the affected communities regarding relocation.
- Understand existing social networks, cultural practices, and livelihood patterns.
- Identify potential challenges and opportunities related to relocation from the community's perspective.

Activities:

- **Household Surveys:** Conduct comprehensive household surveys to gather demographic data, assess vulnerability, understand housing conditions, livelihood activities, social networks, and preferences regarding potential relocation sites and housing options. Ensure surveys are culturally sensitive and accessible.
- **Participatory Rural Appraisal (PRA) Tools:** Utilize PRA techniques (e.g., community mapping, focus group discussions, seasonal calendars, wealth ranking) to gain a deeper understanding of community dynamics, resource use, and perceptions of risk and relocation.
- **Targeted Consultations with Vulnerable Groups:** Conduct separate consultations with the elderly, children (through child-friendly methods), PWDs, and low-income households to address their specific needs and concerns. Ensure accessibility (e.g., sign language interpreters, accessible venues).
- **Open Forums and Public Hearings:** Organize open forums where residents can voice their opinions, ask questions, and provide feedback on the proposed relocation strategy. Ensure these are held at convenient times and locations.

Phase 3: Collaborative Planning and Design (Months 7-12)

Objectives:

- Involve the community in the planning and design of the relocation site, housing options, and community facilities.
- Incorporate community preferences and needs into the development plan.
- Foster a sense of ownership and participation in the new community.

Activities:

- **Community Workshops on Site Selection:** Organize workshops where residents can participate in evaluating potential relocation sites based on criteria such as accessibility, safety, livelihood opportunities, and proximity to social networks.
- **Participatory Design Workshops:** Conduct workshops where residents can provide input on the design of housing units, community spaces, and infrastructure, ensuring cultural appropriateness and functionality. Utilize models, drawings, and visual aids.

- **Joint Planning Committees:** Establish joint planning committees comprising representatives from the affected communities, local government, technical experts, and CSOs to collaboratively develop specific aspects of the relocation plan (e.g., housing allocation, livelihood programs, social infrastructure).
- **Study Tours (Optional):** Organize visits to successful relocation projects in other areas to provide residents with firsthand experience and insights.

Phase 4: Implementation and Monitoring (Ongoing)

Objectives:

- Ensure the transparent and equitable implementation of the relocation plan.
- Provide ongoing support and address any concerns that arise during the relocation process.

- Monitor the social, economic, and environmental impacts of the relocation on the affected communities and the wider Poblacion Bustos.

Activities:

- **Regular Communication Channels:** Maintain consistent communication through various channels (regular meetings, newsletters, hotlines) to update residents on the progress of the relocation and address their concerns.
- **Grievance Redress Mechanism:** Establish a clear and accessible mechanism for residents to voice grievances and seek resolution to any issues that arise during the relocation process.
- **Community Liaison Officers:** Appoint community liaison officers from within the affected communities to act as bridges between the residents and the project team.
- **Participatory Monitoring and Evaluation:** Involve community members in monitoring the implementation process and evaluating its social, economic, and environmental impacts through participatory methods (e.g., community-based monitoring, focus group discussions).
- **Feedback Loops and Adaptive Management:** Establish mechanisms for incorporating community feedback into ongoing adjustments and improvements to the relocation plan and its implementation.

3. Resilient Housing and Infrastructure Development:

This Relocation Strategy and Implementation Plan outlines the steps necessary to integrate resilience and sustainability into the relocation of communities at risk in Poblacion Bustos, Bulacan. It emphasizes a phased, participatory, and environmentally conscious approach to ensure the safety, well-being, and long-term prosperity of the relocated population and the broader community.

Phase 1: Preparatory and Planning Phase (Estimated Timeline: 6-12 Months)

1.1 Detailed Risk Assessment and Vulnerability Mapping (Building on Existing Data):

Activity: Conduct a high-resolution mapping of flood-prone zones and other hazards within Poblacion Bustos, overlaying demographic data to pinpoint the most vulnerable communities and critical infrastructure.

- **Sustainability Integration:** Utilize GIS technology and environmental data to identify areas with minimal ecological sensitivity for potential relocation sites.
- **Resilience Integration:** Analyze historical flood data (frequency, depth, velocity) and future climate projections to inform the design standards for resilient housing and infrastructure.

- **Output:** Comprehensive hazard maps, vulnerability profiles of affected communities, and initial suitability analysis of potential relocation sites.

4. Participatory Stakeholder Engagement and Communication:

Activity: Establish a multi-stakeholder committee comprising representatives from at-risk communities, LGU, provincial government, national agencies (NHA, DSWD, DENR, NDRRMC), CSOs, technical experts, and local leaders. Conduct regular consultations, focus group discussions, and public forums to gather input and address concerns.

- **Sustainability Integration:** Incorporate community knowledge about local environmental conditions and sustainable practices into the planning process.
- **Resilience Integration:** Understand community coping mechanisms and incorporate them into the design of resilient housing and community facilities.
- **Output:** Stakeholder engagement plan, documented community feedback, and a shared vision for the relocation.

5. Site Selection and Acquisition:

Activity: Based on the suitability analysis and community consultations, identify and evaluate potential relocation sites considering factors such as safety from hazards, accessibility, availability of basic resources, proximity to livelihoods and social networks, and potential for future expansion. Conduct thorough environmental impact assessments (EIAs) of shortlisted sites. Secure land through appropriate legal and transparent processes (acquisition or donation).

- **Sustainability Integration:** Prioritize brownfield sites or areas with minimal ecological value. Conduct EIAs to mitigate potential environmental impacts of the new development.
- **Resilience Integration:** Select sites located outside identified high-risk zones, considering future climate change scenarios.
- **Output:** Final selection of relocation site(s), land acquisition plan, and completed EIAs.

6. Socio-Economic and Cultural Assessment of Affected Communities:

Activity: Conduct detailed surveys and interviews to understand the socio-economic profiles, livelihoods, social networks, cultural practices, and preferences of the communities to be relocated.

- **Sustainability Integration:** Identify existing sustainable practices within the communities that can be integrated into the new development.
- **Resilience Integration:** Understand how current livelihoods are affected by hazards and identify opportunities for more resilient economic activities in the new location.
- **Output:** Socio-economic and cultural profile reports to inform housing design, livelihood programs, and community development initiatives.

7. Resilient Housing and Infrastructure Design Standards:

Activity: Develop comprehensive design standards for housing and infrastructure (roads, drainage, water supply, sanitation, power, communication) that integrate resilience to identified hazards (primarily flooding) and sustainability principles. Engage architects, engineers, and sustainability experts.

- **Sustainability Integration:** Mandate the use of sustainable building materials (locally sourced, low-embodied energy), energy-efficient designs (passive cooling, natural lighting), water-efficient fixtures,

and provisions for rainwater harvesting and greywater recycling. Plan for green spaces and biodiversity enhancement.

- **Resilience Integration:** Incorporate flood-resistant construction techniques (elevated foundations, water-resistant materials), robust infrastructure design to withstand anticipated hazard intensities, and redundant systems for critical services.
- **Output:** Resilient and sustainable design standards, architectural and engineering plans, and material specifications.

Phase 2: Implementation and Development Phase (Estimated Timeline: 24-36 Months)

2.1 Site Development and Infrastructure Construction:

Activity: Prepare the relocation site(s) according to the approved plans, including land clearing (with proper topsoil management), road construction, drainage systems (including sustainable urban drainage systems - SUDS), water and sanitation infrastructure, power distribution networks (including renewable energy options), and communication infrastructure.

- **Sustainability Integration:** Implement best practices in construction waste management, minimize soil erosion and sedimentation, prioritize the use of eco-friendly construction techniques, and integrate green infrastructure elements (e.g., bioswales, rain gardens).
- **Resilience Integration:** Ensure infrastructure is built to withstand anticipated flood levels and other hazards. Implement early warning systems and evacuation routes.

Output: Developed relocation site(s) with resilient and sustainable infrastructure.

2.2 Resilient Housing Construction:

Activity: Construct housing units adhering to the approved resilient and sustainable design standards. Employ a phased approach to accommodate the relocation of communities. Explore various housing options (e.g., core housing, incremental building) to match affordability and community needs.

- **Sustainability Integration:** Prioritize the use of locally sourced and sustainable building materials. Incorporate energy and water efficiency measures in all housing units. Promote community-based construction and skills development.
- **Resilience Integration:** Ensure all housing units are built to withstand anticipated flood levels (e.g., elevated structures). Incorporate features for natural hazard resistance.
- **Output:** Completed resilient and sustainable housing units ready for occupancy.

2.3 Livelihood Transition and Economic Development Programs:

Activity: Implement programs to support the transition of livelihoods for relocated residents. This may include skills training, entrepreneurship development, access to microfinance, and linkages to new economic opportunities in the relocation area and surrounding regions. Explore opportunities for sustainable livelihoods (e.g., eco-tourism, sustainable agriculture, green industries).

- **Sustainability Integration:** Promote livelihoods that are environmentally sustainable and contribute to a green economy.
- **Resilience Integration:** Support the development of diverse and climate-resilient livelihoods that are less susceptible to the impacts of hazards.

- **Output:** Operational livelihood transition programs and established economic opportunities for relocated residents.

2.4 Community Facilities and Social Infrastructure Development:

Activity: Construct essential community facilities such as schools, healthcare centers, community centers, markets, and religious spaces in the relocation site, ensuring accessibility and resilience.

- **Sustainability Integration:** Design community facilities with energy and water efficiency in mind and incorporate green spaces.
- **Resilience Integration:** Locate and design community facilities to withstand anticipated hazards and serve as potential evacuation centers.
- **Output:** Functional and resilient community facilities.

2.5 Phased Relocation and Resettlement of Communities:

Activity: Implement a phased relocation process, providing comprehensive support to relocating families, including transportation assistance, temporary shelter if needed, information and orientation about the new site, and psychosocial support.

- **Sustainability Integration:** Provide education and awareness programs on sustainable living practices in the new community.
- **Resilience Integration:** Conduct drills and simulations to familiarize residents with evacuation procedures and safety protocols in the new environment.
- **Output:** Successfully relocated communities integrated into the new environment.

Phase 3: Post-Relocation and Sustainability Phase (Ongoing)

8. Community Integration and Social Cohesion Programs:

Activity: Implement programs to foster social integration and cohesion within the relocated community and between the relocated and existing populations. Support the establishment of community organizations and networks.

Sustainability Integration: Promote community-based environmental initiatives and stewardship of local resources.

Resilience Integration: Support the development of community-based disaster risk reduction and management (CBDRM) plans and activities.

Output: Thriving and cohesive relocated community.

8.1 Monitoring and Evaluation:

Activity: Establish a robust monitoring and evaluation framework with clear indicators to track the progress of the relocation, the resilience of housing and infrastructure, the sustainability of practices, and the well-being of the relocated population. Conduct regular assessments and make necessary adjustments to the plan.

Sustainability Integration: Monitor environmental indicators (e.g., water and energy consumption, waste generation, biodiversity).

Resilience Integration: Monitor the performance of housing and infrastructure during hazard events and assess the community's ability to respond and recover.

Output: Regular monitoring and evaluation reports, and adaptive management strategies.

8.2 Maintenance and Capacity Building:

Activity: Establish mechanisms for the long-term maintenance of housing, infrastructure, and green spaces. Provide ongoing capacity building programs for residents and local authorities on resilient and sustainable practices.

Sustainability Integration: Train residents on energy and water conservation, waste management, and sustainable livelihoods.

Resilience Integration: Train residents on disaster preparedness, first aid, and community-based response.

Output: Sustainable and resilient community with the capacity for long-term management and adaptation.

8.3. Livelihood and Economic Development:

This plan outlines the strategy and implementation steps for ensuring the continuity and development of livelihoods and economic opportunities for communities being relocated from high-risk areas in Poblacion Bustos, Bulacan, as part of an integrated resilience and sustainability approach. The overarching goal is to not only provide safe housing but also to foster a thriving and sustainable economic environment for the relocated population and the broader community.

9. Strategic Framework:

The livelihood and economic development strategy will be guided by the following principles:

People-Centered Approach: Prioritizing the needs, skills, and aspirations of the affected communities.

Sustainability: Promoting environmentally sound and economically viable livelihood options.

Resilience Building: Diversifying income sources and enhancing adaptive capacities to future shocks.

Community Participation: Actively involving residents in the planning and implementation of livelihood initiatives.

Partnership and Collaboration: Leveraging the expertise and resources of various stakeholders (government agencies, NGOs, private sector, educational institutions).

Cultural Sensitivity: Respecting and integrating existing skills, traditions, and cultural practices where relevant.

9.1. Implementation Plan:

This plan will be implemented in phases, aligning with the overall relocation timeline:

Phase 1: Assessment and Planning (Prior to and Concurrent with Relocation Site Preparation)

Detailed Livelihood Assessment:

Conduct household surveys: Identify existing skills, occupations, income levels, and economic activities of the at-risk population in Poblacion Bustos.

Map existing economic ecosystems: Analyze local value chains, market linkages, and potential economic opportunities in both the current and potential relocation areas. Consider the specific context of Bustos and its surrounding areas.

Identify vulnerable economic groups: Determine individuals or groups with limited skills, resources, or access to opportunities (e.g., daily wage earners, small vendors).

Assess aspirations and preferences: Understand the preferred livelihood options and entrepreneurial interests of the affected communities.

Identification of Economic Development Opportunities:

Market analysis of relocation areas: Identify potential demand for goods and services in the new locations and surrounding areas. Consider existing industries and potential for new ones aligned with sustainability principles (e.g., eco-tourism, organic farming, renewable energy services).

Value chain analysis: Explore opportunities to enhance existing value chains or create new ones that are resilient and sustainable.

Skills mapping and gap analysis: Compare the skills of the relocating population with the identified economic opportunities to determine training needs.

Development of Livelihood and Economic Development Plan:

Define specific objectives and targets: Set measurable goals for income generation, employment rates, and business creation.

Identify potential livelihood options: Based on the assessment and opportunities, propose a range of sustainable livelihood options (e.g., agriculture, small businesses, skilled trades, services, arts and crafts).

Outline support mechanisms: Detail the types of assistance to be provided (e.g., training, microfinance, business development support, market linkages).

Develop partnerships and collaborations: Identify key stakeholders to collaborate with for training, funding, and market access.

Establish a monitoring and evaluation framework: Define indicators to track the progress and impact of livelihood initiatives.

Phase 2: Capacity Building and Skills Development (Prior to and During Early Relocation)

Targeted Skills Training Programs:

Design and deliver training programs: Based on the identified skills gaps and opportunities, offer relevant vocational and entrepreneurial training (e.g., sustainable agriculture techniques, basic business management, specific trades in demand). Consider mobile training units for accessibility.

Partnerships with technical-vocational institutions: Collaborate with TESDA-accredited institutions and local colleges in Bulacan to provide recognized certifications.

Life skills training: Include modules on financial literacy, business planning, and cooperative development.

Entrepreneurship Development Support:

Business incubation programs: Provide mentorship, workspace, and resources for aspiring entrepreneurs.

Access to microfinance: Partner with microfinance institutions to offer accessible loans for starting or expanding small businesses. Explore community-based savings and credit cooperatives.

Business registration and permitting assistance: Streamline the process for new businesses in the relocation areas.

Linkages to Existing Economic Activities:

Facilitate connections: Connect relocating individuals with existing businesses and employment opportunities in Bustos and nearby areas.

Support local economic initiatives: Integrate the relocated population into existing or emerging local economic development projects.

Phase 3: Economic Integration and Sustainability (Post-Relocation and Ongoing)

Establishment of Market Infrastructure:

Develop accessible marketplaces: Plan and construct appropriate market spaces in the relocation areas, considering the needs of small vendors and local producers.

Promote local sourcing: Encourage businesses and residents in the new areas to prioritize locally produced goods and services.

Support for Sustainable Agriculture and Resource Management:

Promote urban gardening and small-scale farming: Provide training and resources for residents interested in producing their own food sustainably.

Support sustainable agricultural practices: If land is available, encourage environmentally friendly farming methods.

Promote responsible waste management: Integrate waste recycling and upcycling into livelihood opportunities.

Development of Eco-Tourism Potential (If Applicable):

Identify local attractions: Explore opportunities for community-based eco-tourism that highlights the natural and cultural heritage of Bustos.

Provide training for tourism-related services: Offer training in guiding, hospitality, and sustainable tourism practices.

Facilitating Access to Markets:

Establish market linkages: Connect local producers and businesses with broader markets within Bulacan and potentially Metro Manila.

Support the formation of cooperatives and associations: Enable collective marketing and bargaining power for small producers and businesses.

Explore online marketing platforms: Provide training and support for utilizing digital tools to reach wider markets.

Monitoring and Evaluation:

Regularly track key indicators: Monitor employment rates, income levels, business survival rates, and the adoption of sustainable practices.

Conduct periodic evaluations: Assess the effectiveness of the livelihood and economic development initiatives and make necessary adjustments.

Gather feedback from the community: Ensure ongoing engagement and responsiveness to the evolving needs of the relocated population.

10. Enabling Factors and Support Systems:

Land Use Planning: Allocate suitable land for commercial and livelihood activities in the relocation areas.

Infrastructure Development: Ensure adequate infrastructure (roads, electricity, water, internet connectivity) to support economic activities.

Access to Financial Services: Facilitate access to microfinance, grants, and other financial resources.

Business Development Services: Provide ongoing mentorship, training, and technical assistance to entrepreneurs and small businesses.

Policy Support: Advocate for local policies that support sustainable economic development and entrepreneurship.

Community Organizing and Empowerment: Foster strong community organizations that can advocate for their economic interests and participate in decision-making.

11. Collaboration and Partnerships:

Successful implementation will require strong collaboration among:

Local Government Units (Barangay and Municipal): Leadership, coordination, and resource allocation.

Provincial Government: Technical assistance, funding, and alignment with provincial development plans.

National Government Agencies: Policy guidance, funding, and technical expertise (e.g., DTI, DOLE, DA, TESDA).

Civil Society Organizations and NGOs: Community mobilization, specialized expertise, and advocacy.

Private Sector: Investment, job creation, and market linkages.

Educational and Research Institutions: Training, research, and technical support.

Financial Institutions: Microfinance and other financial services.

The Relocated Communities Themselves: Active participation, ownership, and contribution of their skills and knowledge.

12. Social and Cultural Integration:

Integrating resilience and sustainability through relocation in Poblacion Bustos necessitates a carefully planned and executed strategy that prioritizes the social and cultural well-being of the affected communities. This plan outlines the key principles, strategies, and implementation steps to ensure a smooth transition and foster strong social cohesion and cultural continuity in the relocation sites.

Overarching Principles:

People-Centered Approach: The needs, rights, and preferences of the affected communities will be at the forefront of all planning and implementation stages.

Participatory Engagement: Active and meaningful involvement of community members in decision-making processes is crucial for building trust and ownership.

Cultural Sensitivity: Respect for the cultural heritage, traditions, and social structures of the communities will guide the relocation and integration process.

Social Equity: The relocation process will strive to address existing vulnerabilities and ensure fair and equitable access to resources and opportunities in the new locations.

Do No Harm: The relocation process will be carefully managed to avoid or minimize negative social and cultural impacts.

Building Social Capital: The plan will aim to foster strong social networks and a sense of belonging in the new communities.

12.1 Strategic Pillars for Social and Cultural Integration:

1. Pre-Relocation Engagement and Preparation:

Comprehensive Information Dissemination: Provide clear, consistent, and culturally appropriate information about the relocation plan, timelines, site selection, housing options, and support services through various accessible channels (community meetings, visual aids, local media, trusted community leaders).

Participatory Planning Workshops: Conduct workshops and focus group discussions to understand community needs, preferences for housing design, community spaces, and the preservation of cultural practices.

Social Mapping and Network Analysis: Identify existing social networks, community groups, and cultural associations to understand their importance and plan for their continuity in the new locations.

Psychosocial Support and Counseling: Offer counseling services to address anxieties, fears, and potential grief associated with displacement and loss of familiar surroundings.

Exposure Visits to Potential Relocation Sites: Organize visits for community representatives to potential relocation areas to familiarize themselves with the new environment and provide feedback.

Documentation of Cultural Heritage: Work with community elders and cultural practitioners to document important cultural sites, traditions, stories, and practices to ensure their preservation and transmission in the new locations.

2. Facilitating the Relocation Process:

Phased and Organized Movement: Implement a phased relocation process to minimize disruption and allow for adequate support during the transition.

Logistical Assistance: Provide comprehensive logistical support for the safe and efficient movement of people, belongings, and (where feasible and culturally relevant) community symbols and artifacts.

Establishment of Temporary Support Centers: Set up temporary centers at both the origin and destination points to provide information, assistance, and address immediate needs during the move.

Peer Support Networks: Encourage the formation of peer support groups among relocating families to provide emotional and practical assistance to one another.

3. Post-Relocation Integration and Community Building:

Creation of Communal Spaces: Design and develop accessible and culturally appropriate communal spaces in the new locations that facilitate social interaction, cultural activities, and community gatherings (e.g., multi-purpose halls, community centers, open spaces, areas for traditional practices).

Support for Cultural Activities and Events: Provide resources and support for the continuation and adaptation of traditional festivals, celebrations, arts, and cultural practices in the new communities.

Inter-Community Dialogue and Exchange: Facilitate opportunities for interaction and exchange between long-term residents of the relocation areas (if any) and the newly relocated communities to foster understanding and integration.

Establishment of Community-Led Organizations: Support the formation of resident associations and community-led organizations to address local needs, promote social cohesion, and advocate for their interests.

Integration of Cultural Elements in the Physical Environment: Incorporate culturally significant symbols, designs, and landscaping in the new housing and public spaces, where appropriate and desired by the community, to foster a sense of identity and belonging.

Language and Education Support: Provide language support (if necessary) and culturally sensitive educational programs that promote understanding and respect for diverse cultural backgrounds.

Conflict Resolution Mechanisms: Establish culturally appropriate and accessible mechanisms for addressing conflicts and grievances that may arise during the integration process.

Monitoring and Evaluation of Social and Cultural Integration: Develop indicators to monitor the progress of social and cultural integration and regularly assess the well-being and social cohesion of the relocated communities through participatory methods.

Implementation Plan (Phased Approach):

Phase 1: Planning and Preparation (Months 1-6)

Conduct detailed social mapping and network analysis.

Establish a multi-stakeholder Social and Cultural Integration Working Group with community representation.

Develop culturally sensitive communication strategies and materials.

Conduct extensive community consultations and participatory planning workshops.

Document cultural heritage and identify key cultural assets for preservation.

Develop psychosocial support programs and train community facilitators.

Identify and prepare potential communal spaces in the relocation sites.

Phase 2: Relocation and Initial Settlement (Months 7-12)

Implement a phased relocation of communities, providing logistical and emotional support.

Establish temporary support centers at origin and destination points.

Facilitate the formation of peer support networks.

Ensure access to essential services in the new locations.

Organize initial community gatherings and orientation programs.

Phase 3: Integration and Community Building (Months 13-36 onwards)

Support the establishment and functioning of community-led organizations.

Provide resources for cultural activities, events, and festivals.

Facilitate inter-community dialogue and exchange programs.

Develop and implement culturally sensitive education and language support initiatives (if needed).

Establish and promote access to culturally appropriate conflict resolution mechanisms.

Continuously monitor and evaluate social and cultural integration through participatory methods, adapting strategies as needed.

13. Environmental Sustainability Initiatives:

This section outlines the strategy and implementation plan for integrating environmental sustainability initiatives within the relocation approach for communities at risk in Poblacion Bustos. The goal is to ensure that the relocation not only provides safer living conditions but also fosters a more environmentally responsible and sustainable community in the long term.

13.1. Guiding Principles for Environmental Sustainability in Relocation:

Minimize Environmental Footprint: The relocation process and the development of the new site should strive to minimize negative impacts on the environment.

Resource Efficiency: Promote the efficient use of water, energy, and materials in the construction and operation of the new community.

Green Infrastructure Integration: Incorporate natural and semi-natural systems to manage water, reduce heat island effects, enhance biodiversity, and provide ecosystem services.

Climate Change Adaptation: Design the new community to be resilient to the anticipated impacts of climate change, such as increased rainfall intensity and higher temperatures.

Community Engagement and Education: Foster environmental awareness and responsibility among the relocated residents through education and participatory initiatives.

13.2. Relocation Strategy Incorporating Environmental Sustainability:

Phase 1: Planning and Design (Concurrent with overall relocation planning):

Environmental Impact Assessment (EIA) of Relocation Sites: Conduct thorough EIAs for potential relocation sites to identify and mitigate potential environmental risks and impacts (e.g., loss of habitat, soil erosion, water contamination).

Sustainable Site Selection: Prioritize sites with minimal ecological value, good drainage, and potential for green space development. Avoid areas prone to other hazards (e.g., landslides).

Green Infrastructure Master Plan: Develop a comprehensive plan for integrating green infrastructure into the new community design, including:

Stormwater Management: Natural drainage systems, permeable pavements, rain gardens, and constructed wetlands to manage runoff, reduce flooding, and improve water quality.

Urban Green Spaces: Parks, greenbelts, community gardens, and tree planting to enhance biodiversity, provide recreational areas, and mitigate the urban heat island effect.

Wastewater Treatment: Sustainable wastewater treatment systems, potentially including decentralized or nature-based solutions, to minimize pollution of water bodies.

Sustainable Building Design Guidelines: Establish mandatory guidelines for the design and construction of houses and community buildings, focusing on:

Energy Efficiency: Passive design principles, insulation, energy-efficient appliances, and potential for rooftop solar panels.

Water Conservation: Water-efficient fixtures, rainwater harvesting systems, and greywater recycling where feasible.

Sustainable Materials: Prioritize locally sourced, recycled, and low-impact building materials.

Waste Reduction during Construction: Implement strategies to minimize construction waste and promote recycling.

Renewable Energy Integration Plan: Explore the feasibility of integrating renewable energy sources, such as solar power for street lighting and community facilities.

Transportation Planning for Sustainability: Prioritize pedestrian and bicycle-friendly infrastructure and explore options for promoting public transportation or shared mobility within the new community.

Waste Management Plan for the New Community: Develop a comprehensive solid waste management plan based on the principles of reduce, reuse, recycle, and proper disposal, building upon the experiences of Bustos' earlier "Zero Waste" initiatives.

Phase 2: Implementation and Construction:

Environmental Monitoring during Construction: Implement a robust environmental monitoring plan to ensure compliance with EIA recommendations and sustainable building guidelines.

Capacity Building for Sustainable Construction Practices: Provide training to local builders and construction workers on sustainable building techniques and the use of eco-friendly materials.

Establishment of Green Spaces and Infrastructure: Implement the Green Infrastructure Master Plan, including the creation of parks, planting of trees, and construction of stormwater management systems.

Installation of Sustainable Utilities: Install energy-efficient lighting, water-saving fixtures, and renewable energy systems according to the design plans.

Waste Management Infrastructure Setup: Establish the necessary infrastructure for waste segregation, collection, recycling, and composting within the new community.

Phase 3: Community Transition and Engagement:

Environmental Education and Awareness Programs: Conduct workshops, training sessions, and public awareness campaigns for the relocated residents on:

Sustainable living practices (energy and water conservation, waste reduction).

Importance of green spaces and biodiversity.

Proper use and maintenance of green infrastructure.

Climate change adaptation measures.

Participatory Environmental Initiatives: Encourage community involvement in environmental stewardship activities, such as community gardening, tree planting, and waste management programs.

Establishment of Community Environmental Groups: Support the formation of local environmental groups to promote and monitor sustainable practices within the community.

Integration of Traditional Ecological Knowledge: Where relevant, incorporate traditional ecological knowledge and practices of the community into sustainable resource management.

Phase 4: Monitoring and Evaluation:

Environmental Performance Indicators: Establish key environmental performance indicators (e.g., water consumption per household, waste generation rates, energy use, air quality in green spaces, biodiversity levels) to track the sustainability of the new community.

Regular Monitoring and Reporting: Conduct regular monitoring of these indicators and report the findings to the community and relevant authorities.

Adaptive Management: Use the monitoring data to identify areas for improvement and adapt the environmental sustainability initiatives as needed.

Community Feedback Mechanisms: Establish channels for residents to provide feedback on the environmental aspects of the new community and suggest improvements.

13.3. Institutional Arrangements and Responsibilities:

Municipal Government of Bustos: Overall responsibility for the planning, implementation, and monitoring of the relocation and environmental sustainability initiatives.

Relocation Task Force: A multi-stakeholder task force (including representatives from the LGU, national government agencies, environmental experts, community leaders, and CSOs) to oversee the environmental aspects of the relocation.

Environmental Management Unit (within LGU): Responsible for conducting EIAs, developing green infrastructure plans, monitoring environmental performance, and implementing education programs.

Community Environmental Groups: Active participation in promoting and monitoring sustainable practices at the grassroots level.

Partnerships with NGOs and Academic Institutions: Collaboration for technical expertise, capacity building, and research on environmental sustainability.

13.4. Resources and Budget:

Allocate a specific budget for environmental sustainability initiatives within the overall relocation budget. Explore funding opportunities from national government agencies (e.g., DENR), international organizations, and green financing mechanisms.

Prioritize cost-effective and locally appropriate sustainable solutions.

13.5. Timeline:

Integrate environmental sustainability planning into the initial stages of the overall relocation timeline.

Implement green infrastructure development concurrently with housing construction.

Initiate community engagement and education programs before and during the relocation process.

Establish a long-term monitoring and evaluation framework.

14. Phased Implementation Plan:

This outlines a comprehensive relocation strategy and a phased implementation plan for integrating resilience and sustainability in the relocation of communities at high risk in Poblacion Bustos, Bulacan. This plan prioritizes a participatory, transparent, and sustainable approach, ensuring the safety and well-

being of affected residents while fostering long-term community resilience and environmental stewardship.

14.1. Relocation Strategy:

The core of the relocation strategy is to move vulnerable communities from high-risk flood zones within Poblacion Bustos to safer, pre-identified and developed relocation sites. This strategy is guided by the following principles:

Safety First: Prioritizing the safety and minimizing the risks faced by the relocating communities.

Community-Centric Approach: Ensuring the active participation and informed consent of affected residents throughout the entire process.

Cultural Sensitivity: Respecting the cultural heritage, social structures, and existing community networks of the relocating populations.

Sustainability Integration: Embedding environmental sustainability principles in site selection, infrastructure development, housing design, and livelihood opportunities.

Resilience Building: Designing relocation sites and housing to be resilient to future hazards, including flooding and potential climate change impacts.

Equity and Inclusion: Addressing the specific needs of vulnerable populations (elderly, children, PWDs, low-income households) to ensure equitable access to resources and opportunities.

Transparency and Accountability: Maintaining open communication and ensuring accountability in all stages of the relocation process.

Phased and Adaptive Implementation: Implementing the relocation in manageable phases, allowing for learning, adaptation, and adjustments based on feedback and evolving circumstances.

14.2. Phased Implementation Plan:

This plan is divided into four key phases, with specific activities and timelines (which will need to be further detailed based on available resources and the scale of relocation):

Phase 1: Planning and Preparation (Estimated Timeline: 6-12 Months)

1.1 Detailed Risk Assessment and Vulnerability Mapping:

Refine existing hazard maps with higher resolution data for Poblacion Bustos.

Conduct detailed vulnerability assessments of communities, identifying specific households and infrastructure at highest risk.

Overlay hazard and vulnerability maps to prioritize areas and populations for relocation.

1.2 Stakeholder Engagement and Consultation:

Establish a multi-stakeholder committee involving representatives from at-risk communities, LGU, provincial government, national agencies, CSOs, and technical experts.

Conduct extensive community consultations (focus groups, public meetings, surveys) to understand needs, concerns, and preferences regarding relocation.

Develop a comprehensive communication and information dissemination strategy.

1.3 Identification and Assessment of Relocation Sites:

Identify potential relocation sites based on safety criteria (low flood risk, stable land), accessibility, availability of basic services, and potential for future expansion.

Conduct thorough environmental and social impact assessments of potential relocation sites.

Engage community members in the site selection process.

1.4 Legal and Policy Framework:

Review existing legal and policy frameworks related to relocation, land acquisition, and disaster management.

Develop necessary local ordinances or resolutions to support the relocation plan.

Establish clear guidelines for compensation, resettlement assistance, and land titling in the new sites.

1.5 Socio-Economic Profiling and Livelihood Assessment:

Conduct detailed socio-economic profiling of the at-risk communities to understand their livelihoods, skills, and economic activities.

Assess potential impacts of relocation on existing livelihoods and identify opportunities for livelihood development in the new sites.

1.6 Preliminary Site Planning and Design:

Develop preliminary master plans for the relocation sites, incorporating principles of sustainable urban development, green infrastructure, and disaster resilience.

Develop preliminary housing designs that are culturally appropriate, affordable, and resilient to potential hazards.

Phase 2: Site Development and Initial Relocation (Estimated Timeline: 12-24 Months)**2.1 Land Acquisition and Titling:**

Finalize land acquisition for the chosen relocation sites through fair and transparent processes.

Initiate the process of land titling for the relocated households.

2.2 Infrastructure Development:

Develop essential infrastructure in the relocation sites, including roads, drainage systems (designed for flood management), water supply, sanitation facilities, electricity, and communication networks, prioritizing sustainable and resilient designs.

Integrate green infrastructure elements like permeable pavements, rain gardens, and green spaces.

2.3 Housing Construction (Pilot Phase):

Initiate a pilot phase of housing construction based on the approved sustainable and resilient designs.

Involve future residents in the construction process where feasible (e.g., through self-help housing models with technical assistance).

Implement strict quality control and adherence to building codes and sustainability standards.

2.4 Initial Relocation and Resettlement Assistance:

Begin the voluntary relocation of the most vulnerable households to the completed housing units in the pilot relocation site.

Provide comprehensive resettlement assistance, including transportation, temporary shelter (if needed), financial support, and access to basic services in the new location.

Establish community support centers in the relocation site to facilitate social integration and address immediate needs.

2.5 Livelihood Support Programs (Initial Stage):

Implement initial livelihood support programs, such as skills training, micro-grants, and linkages to employment opportunities in and around the relocation site.

Phase 3: Scaling Up Relocation and Sustainable Community Development (Estimated Timeline: 24-48 Months)**3.1 Accelerated Housing Construction:**

Scale up housing construction based on the lessons learned from the pilot phase, ensuring efficiency and

adherence to sustainability and resilience standards.

3.2 Phased Relocation of Remaining Vulnerable Communities:

Continue the phased relocation of eligible households, prioritizing those in the highest-risk areas.

Maintain comprehensive resettlement assistance and community support services.

3.3 Development of Social Infrastructure:

Develop essential social infrastructure in the relocation sites, including schools, healthcare facilities, community centers, public markets, and recreational areas, ensuring accessibility and sustainability.

3.4 Expansion of Livelihood Opportunities:

Expand livelihood support programs, focusing on sustainable economic development opportunities in sectors such as eco-tourism, sustainable agriculture, small-scale industries, and green jobs.

Facilitate partnerships with local businesses and industries.

3.5 Strengthening Community Organizations and Governance:

Support the formation and strengthening of community-based organizations in the relocation sites to promote self-governance, social cohesion, and participation in decision-making.

3.6 Environmental Rehabilitation of Former High-Risk Zones:

Develop and implement plans for the environmental rehabilitation of the vacated high-risk areas, such as reforestation, creation of green buffer zones, and improved drainage systems to mitigate future risks for remaining areas.

Phase 4: Long-Term Sustainability and Resilience Building (Ongoing)

4.1 Continuous Monitoring and Evaluation:

Establish a robust monitoring and evaluation framework to track the progress of the relocation and its impact on the social, economic, and environmental well-being of the community.

Regularly assess the resilience of the relocated communities to hazards and adapt strategies as needed.

4.2 Capacity Building and Training:

Provide ongoing capacity building and training programs for residents, local government officials, and community organizations on sustainable practices, disaster preparedness, and climate change adaptation.

4.3 Integration with Local Development Plans:

Ensure the long-term integration of the relocated communities and the sustainability initiatives into the broader municipal development plans and strategies.

4.4 Promotion of Sustainable Practices:

Implement programs to promote sustainable practices in the relocated communities, such as waste reduction and recycling, water conservation, and energy efficiency.

4.5 Knowledge Sharing and Replication:

Document the lessons learned and best practices from the Poblacion Bustos relocation project to facilitate knowledge sharing and potential replication in other at-risk communities.

V. Governance and Institutional Arrangements:

1. Multi-Level Governance Framework:

A. National Level:

- **Housing and Urban Development Coordinating Council (HUDCC):** Provide overall policy guidance, technical assistance, and potentially funding for large-scale relocation projects. Ensure alignment with national housing and urban development frameworks.

- **National Disaster Risk Reduction and Management Council (NDRRMC):** Offers guidance on disaster risk assessment, relocation strategies in hazard zones, and access to national disaster funds.
- **Department of Environment and Natural Resources (DENR):** Provide expertise on environmental sustainability aspects, conduct environmental impact assessments (EIAs), and ensure compliance with environmental regulations for both relocation and vacated areas.
- **Department of Interior and Local Government (DILG):** Oversee the roles and responsibilities of the local government units (LGUs) and ensure their adherence to national policies.
- **Department of Social Welfare and Development (DSWD):** Provide social support programs for displaced communities during and after relocation.
- **National Economic and Development Authority (NEDA):** Align the project with national and regional development plans and potentially provide funding or facilitate access to financing.

B. Provincial Level (Bulacan Provincial Government):

- **Provincial Disaster Risk Reduction and Management Office (PDRRMO):** Coordinate risk assessments, provide technical assistance to the Municipal DRRMO, and potentially allocate provincial disaster funds.
- **Provincial Planning and Development Office (PPDO):** Ensure alignment with the Provincial Development and Physical Framework Plan (PDPFP), assist in site selection, and provide technical planning expertise.
- **Provincial Social Welfare and Development Office (PSWDO):** Coordinates social support services at the provincial level.
- **Provincial Environment and Natural Resources Office (PENRO):** Assist in environmental assessments and monitoring.

• **Local Level (Municipality of Bustos):**

C. Municipal Mayor's Office: Provide overall leadership, champion the project, and ensure inter-departmental coordination within the LGU.

- **Municipal Disaster Risk Reduction and Management Office (MDRRMO):** Lead the risk assessment efforts, coordinate evacuation and emergency response during the relocation process, and implement community-based DRR programs in both original and relocated areas.
- **Municipal Planning and Development Office (MPDO):** Lead the planning and development of the relocation site, ensuring integration of sustainability principles in infrastructure and housing design.
- **Municipal Social Welfare and Development Office (MSWDO):** Implement social support programs for affected families, including resettlement assistance and livelihood support.
- **Municipal Engineering Office:** Oversee the construction of housing and infrastructure in the relocation site, ensuring adherence to building codes and sustainability standards.
- **Barangay Local Government Units (BLGUs) of Poblacion and**

- **Relocation Sites:** Facilitate community engagement, provide local knowledge, and assist in the implementation of programs at the grassroots level.

2. Key Institutional Arrangements and Mechanisms:

A. Inter-Agency Task Force (IATF) or Project Steering Committee: A multi-stakeholder body composed of representatives from national, provincial, and local government agencies, affected communities, CSOs, and relevant technical experts. This committee will be responsible for:

- Overall project oversight and strategic direction.
- Ensuring coordination and collaboration among different agencies and stakeholders.
- Monitoring progress and addressing challenges.
- Approving key decisions related to planning, implementation, and funding.
- Community Participation and Consultation Mechanisms: Formal and regular platforms for engaging affected communities in all stages of the project, including:
 - Focus group discussions and community meetings for needs assessment and site selection.
 - Representation of community leaders in the IATF or dedicated working groups.
 - Feedback mechanisms for addressing concerns and grievances.

Participatory planning workshops for housing design and community development in the new location.

B. Technical Working Groups (TWGs): Specialized groups focusing on specific aspects of the project, such as:

- **Risk Assessment and Mapping TWG:** Composed of experts in hydrology, geology, and disaster risk management.
- **Relocation Site Planning and Development TWG:** Including urban planners, architects, engineers, and environmental specialists.
- **Social and Livelihood Transition TWG:** Involving social workers, livelihood experts, and representatives from DSWD and relevant NGOs.
- **Sustainability and Environmental Management TWG:** With environmental scientists, renewable energy experts, and waste management specialists.
- **Legal and Governance TWG:** Addressing land acquisition, titling, and legal frameworks.
- **Memoranda of Agreement (MOAs) and Inter-Local Government Unit**
- **Agreements:** Formal agreements outlining the roles, responsibilities, and resource contributions of different government agencies and LGUs involved.
- **Grievance Redress Mechanism:** A transparent and accessible system for addressing complaints and disputes arising from the relocation process.
- **Monitoring and Evaluation (M&E) Framework:** A robust system with clear indicators to track the progress, effectiveness, and impact of the relocation and sustainability initiatives. This should involve both quantitative and qualitative data collection and regular reporting to stakeholders.

- **Transparency and Accountability Mechanisms:** Ensuring open access to information about the project plans, budget, and progress. Establishing clear lines of accountability for all involved agencies and individuals.
- **Capacity Building Programs:** Providing training and resources to local government staff, community leaders, and residents to enhance their skills in disaster risk reduction, sustainable development practices, and project management.

VI. Risk Management and Contingency Planning:

The successful integration of resilience and sustainability through a relocation approach in Poblacion Bustos necessitates robust risk management and comprehensive contingency planning. This involves identifying potential challenges, assessing their likelihood and impact, and developing proactive strategies to mitigate these risks and ensure the project's objectives are met.

A. Risk Identification:

Several categories of risks can impact the relocation project:

A.1. Environmental Risks:

A.1.1 Unexpected Intensification of Hazards: More frequent or intense flooding events during the relocation process could disrupt timelines, damage construction, and endanger personnel.

A.1.2 Environmental Degradation at Relocation Sites: Improper planning or construction could lead to soil erosion, water contamination, or loss of biodiversity at the new sites.

A.1.3 Climate Change Impacts: Long-term climate change effects beyond current projections could render the new sites vulnerable to different hazards in the future.

A.1.4 Resource Scarcity: Shortages of essential materials (e.g., construction materials, water) due to unforeseen events or unsustainable consumption.

B. Social Risks:

B.1. Community Resistance to Relocation: Affected communities may resist relocation due to attachment to their homes, distrust, or inadequate consultation.

B.2. Social Fragmentation at Relocation Sites: Failure to adequately plan for community integration could lead to social isolation and conflict among relocated families and existing residents.

B.3. Loss of Cultural Heritage: Improper handling of cultural sites or practices during relocation could lead to loss of community identity.

B.4. Disruption of Livelihoods: Relocation could negatively impact existing livelihoods if not adequately addressed through transition support and economic diversification.

B.5. Health Issues: Increased risk of disease outbreaks during or after relocation due to displacement, sanitation issues, or stress.

B.6. Inadequate Participation and Consultation: Lack of meaningful engagement with stakeholders could lead to resentment, mistrust, and project delays.

C. Economic and Financial Risks:

C.1. Budget Overruns: Unexpected costs related to land acquisition, construction, infrastructure development, or compensation.

C.2. Funding Delays or Shortfalls: Failure to secure committed funding or delays in disbursement.

C.3. Economic Downturn: A significant economic downturn could impact the availability of resources or the viability of livelihood transition programs.

C.4. Loss of Business Activity: Disruption to businesses in Poblacion during the relocation process could lead to economic losses.

C.5. Increased Operational Costs: Higher than anticipated costs for maintaining infrastructure and services at the new relocation sites.

D. Technical and Logistical Risks:

D.1. Delays in Land Acquisition: Protracted negotiations or legal challenges in acquiring suitable relocation sites.

D.2. Construction Delays: Unexpected technical difficulties, material shortages, or labor issues leading to delays in housing and infrastructure development.

D.3. Inadequate Infrastructure at Relocation Sites: Failure to provide timely and adequate basic services (water, electricity, sanitation, transportation) at the new locations.

D.4. Logistical Challenges in Evacuation and Transfer: Difficulties in safely and efficiently moving people and belongings to the new sites.

D.5. Failure of Early Warning Systems: Inability to provide timely and accurate warnings of impending hazards, hindering effective evacuation.

E. Governance and Institutional Risks:

E.1. Lack of Coordination Among Agencies: Poor collaboration between different government agencies, NGOs, and community organizations.

E.2. Political Instability or Changes in Priorities: Shifts in local or national political landscapes could impact project support and funding.

E.3. Corruption and Mismanagement: Risk of corruption or inefficient use of resources.

E.4. Inadequate Legal and Regulatory Framework: Absence of or inconsistencies in relevant laws and regulations could hinder the relocation process.

F. Risk Assessment:

For each identified risk, a thorough assessment will be conducted based on:

Likelihood: The probability of the risk occurring (e.g., low, medium, high).

Impact: The potential severity of the consequences if the risk materializes (e.g., minor, moderate, major). This assessment will prioritize risks based on their potential impact and likelihood, allowing for focused mitigation strategies. A risk matrix can be used to visualize and categorize these risks.

G. Risk Mitigation Strategies:

Proactive measures will be developed to reduce the likelihood and impact of identified high-priority risks, including:

Environmental: Implementing strict environmental safeguards during construction, conducting thorough environmental impact assessments for relocation sites, and incorporating climate-resilient design principles.

Social: Implementing a comprehensive stakeholder engagement plan with transparent communication channels, participatory decision-making processes, culturally sensitive planning, and robust livelihood transition programs.

Economic and Financial: Developing a detailed and realistic budget with contingency funds, securing firm funding commitments, exploring insurance options, and promoting economic opportunities at the relocation sites.

Technical and Logistical: Conducting thorough site assessments, engaging experienced contractors, developing detailed logistical plans for evacuation and transfer, and establishing reliable early warning systems.

Governance and Institutional: Establishing clear Memoranda of Agreement (MOAs) among collaborating agencies, ensuring strong political support, implementing transparent financial management systems, and advocating for necessary legal and regulatory frameworks.

H. Contingency Planning:

Contingency plans will be developed for high-impact risks that cannot be eliminated. These plans will outline specific actions to be taken if a risk materializes to minimize negative consequences and ensure project continuity. Examples include:

Emergency Evacuation Plans: Detailed protocols for rapid and safe evacuation in the event of sudden flooding or other hazards, including designated evacuation routes, shelters, and communication strategies.

Temporary Shelter Provisions: Identification and preparation of temporary housing options in case of delays in permanent housing construction or damage to existing structures.

Alternative Funding Sources: Identification of backup funding options in case of delays or shortfalls in primary sources.

Conflict Resolution Mechanisms: Establishing clear processes for addressing grievances and resolving conflicts among stakeholders.

Communication Protocols During Crises: Establishing clear communication channels to disseminate information to affected communities, stakeholders, and the public during emergencies.

Business Continuity Plans: Strategies to support the continuation of essential services and economic activities in the event of disruptions.

I. Monitoring and Evaluation:

A continuous monitoring and evaluation framework will be established to:

Track the implementation of risk mitigation strategies.

Identify new and emerging risks.

Assess the effectiveness of contingency plans.

Adapt risk management and contingency plans based on evolving circumstances.

J. Stakeholders' Involvement in Risk Management:

Engaging stakeholders in the risk management process is crucial. This includes:

Consulting with at-risk communities to understand their perceptions of risks and incorporate their local knowledge into mitigation strategies.

Collaborating with technical experts to assess environmental and technical risks.

Working with local authorities to align risk management plans with local disaster preparedness frameworks.

Partnering with CSOs and NGOs to address social vulnerabilities and ensure inclusive risk management.

VII. Communication and Advocacy Strategy:

A robust **Communication and Advocacy Strategy** is paramount for the successful integration of resilience and sustainability through a relocation approach in Poblacion Bustos. This strategy must be proactive, transparent, inclusive, and tailored to the diverse needs and concerns of all stakeholders identified in the previous analysis.

1. Guiding Principles:

1.1 Transparency: Openly sharing information about the project's goals, processes, timelines, and potential impacts.

1.2 Inclusivity: Ensuring all stakeholders, especially at-risk communities, have meaningful opportunities to participate in the communication process and have their voices heard.

1.3 Empathy and Cultural Sensitivity: Acknowledging the emotional and cultural significance of displacement and tailoring communication approaches accordingly.

1.4 Clarity and Accessibility: Using clear, concise language and accessible formats (e.g., visual aids, local dialects) to ensure information is easily understood by all.

1.5 Consistency: Maintaining a consistent message across all communication channels.

1.6 Timeliness: Providing information proactively and promptly, especially regarding critical updates and potential disruptions.

1.7 Feedback Mechanisms: Establishing clear channels for stakeholders to provide feedback, ask questions, and raise concerns.

2. Key Objectives:

2.1 Build Awareness and Understanding: Educate all stakeholders about the risks faced by communities in Poblacion Bustos, the rationale behind the relocation approach, and the principles of resilience and sustainability being integrated.

2.2 Foster Buy-in and Support: Cultivate a sense of ownership and support for the project among affected communities and other stakeholders.

2.3 Address Concerns and Mitigate Resistance: Proactively identify and address potential concerns, anxieties, and sources of resistance through open dialogue and accurate information.

2.4. Promote Participation and Collaboration: Encourage active involvement of stakeholders in the planning, implementation, and monitoring phases of the project.

2.5 Advocate for Policy and Resources: Engage with local, provincial, and national government agencies to secure necessary policy support, funding, and technical assistance.

2.6 Showcase Successes and Lessons Learned: Communicate progress, achievements, and lessons learned to maintain momentum and build trust.

3. Target Audiences and Tailored Messaging:

3.1 At-Risk Communities:

Messaging. Focus on safety, improved living conditions, long-term security, opportunities for better livelihoods, and preservation of community bonds in the new location. Address anxieties about displacement, compensation, and the transition process directly and empathetically. Highlight opportunities for their active participation in planning the new community.

Channels. Community meetings, focus group discussions, door-to-door outreach, visual aids (maps, models), local radio, trusted community leaders, culturally relevant communication methods.

3.2 Local Government Unit (Municipality of Bustos):

Messaging: Emphasize the project's alignment with local development goals, potential for enhanced safety and sustainability for the entire municipality, opportunities for showcasing innovation, and the need for collaborative governance. Address concerns about resource allocation and political implications.

Channels: Formal presentations, policy briefs, regular coordination meetings, joint public announcements, involvement in steering committees.

3.3 Provincial Government of Bulacan:

Messaging: Highlight the project's contribution to provincial disaster risk reduction and climate change adaptation strategies, its potential as a model for other municipalities, and the need for provincial-level support and resources.

Channels: Formal proposals, progress reports, presentations at provincial council meetings, collaborative projects.

3.4 National Government Agencies:

Messaging: Frame the project as aligning with national policies on housing, disaster resilience, climate action, and sustainable development. Emphasize the need for national-level funding, technical expertise, and policy support.

Channels: Policy briefs, project proposals, presentations at national forums, engagement with relevant committees and officials.

3.5 Businesses and Market Vendors:

Messaging: Clearly communicate any potential disruptions and outline plans for minimizing negative impacts. Highlight opportunities for business development and economic growth in the new location and the long-term stability the project offers.

Channels: Business forums, individual consultations, information sessions, dedicated communication channels.

3.6 Landowners and Developers:

Messaging: Clearly outline land acquisition processes (if applicable), development guidelines, and potential opportunities for collaboration, emphasizing transparency and fairness.

Channels: Formal notifications, meetings, legal frameworks.

3.7 Civil Society Organizations (CSOs) and NGOs:

Messaging: Engage them as key partners in advocacy, community mobilization, and ensuring the rights and needs of vulnerable populations are addressed. Highlight opportunities for their expertise and involvement.

Channels: Partnership agreements, joint campaigns, regular consultations, participation in working groups.

3.8 Religious Institutions and Community Leaders:

Messaging: Recognize their influential role in the community and engage them as trusted messengers. Emphasize the project's goal of enhancing community well-being and safety.

Channels: Meetings with religious leaders, presentations during community events, leveraging their communication networks.

3.9 General Public (Non-Relocated Residents):

Messaging: Explain how the project will benefit the entire Poblacion in the long run (e.g., reduced overall flood risk, improved infrastructure), address potential concerns about resource allocation and fairness, and emphasize community solidarity.

3.10 Channels: Public forums, local media, social media, community events.

Media:

Messaging: Provide accurate, timely, and compelling information about the project, highlighting both the challenges and the long-term benefits. Facilitate access to key stakeholders and project sites.

Channels: Press releases, media briefings, site visits, interviews, social media engagement.

4. Communication Channels and Tools:

4.1 Traditional Media: Local radio stations (crucial for reaching a wide audience), print newspapers (if applicable).

4.2 Digital Media: Social media platforms (Facebook, local community groups), municipal website, dedicated project website/page, email newsletters.

4.3 Community Engagement Platforms: Public forums, town hall meetings, focus group discussions, workshops, community mapping exercises.

4.4 Visual Communication: Posters, flyers, infographics, videos, maps, models of the relocation site.

4.5 Interpersonal Communication: Door-to-door outreach, meetings with community leaders, establishment of community liaison officers.

4.6 Hotlines and Feedback Mechanisms: Dedicated phone lines, suggestion boxes, online feedback forms.

4.7 Educational Materials: Brochures, pamphlets, FAQs in local dialects.

5. Advocacy Strategies:

5.1 Policy Advocacy: Engaging with policymakers at all levels to secure necessary legislation, funding, and policy support for the relocation and sustainability initiatives.

5.2 Public Awareness Campaigns: Raising public awareness about the risks faced by Poblacion Bustos and the importance of the relocation project.

5.3 Community Mobilization: Empowering affected communities to advocate for their rights and needs throughout the process.

5.4 Building Alliances: Collaborating with CSOs, NGOs, academic institutions, and other stakeholders to amplify advocacy efforts.

5.6 Media Engagement: Strategically working with media to shape public discourse and garner support for the project.

5.7 Showcasing Successes: Highlighting positive outcomes and lessons learned to build momentum and attract further support.

6. Monitoring and Evaluation:

Regularly monitor the effectiveness of communication channels and messaging.

Track media coverage and public sentiment.

Gather feedback from stakeholders through surveys, interviews, and community meetings.

Adapt the communication and advocacy strategy based on monitoring and evaluation findings.

7. Responsible Parties:

Designate a communication team within the project management structure, responsible for developing and implementing the strategy.

Assign specific communication responsibilities to key stakeholders (e.g., community leaders as messengers, LGU public information office).

VIII. Sustainability and Long-Term Vision:

The long-term vision for Poblacion Bustos, guided by the integration of resilience and sustainability through a strategic relocation approach, is to transform from a community highly vulnerable to environmental hazards into a **thriving, safe, equitable, and environmentally responsible urban center**. This vision extends beyond simply moving at-risk populations; it aims to foster a holistic and sustainable future for all residents of Bustos.

Sustainability Pillars in the Long-Term Vision:

- **Environmental Sustainability:**

Reduced Environmental Footprint: The relocated areas will be developed with a focus on minimizing environmental impact through green building technologies, energy efficiency, renewable energy integration (e.g., solar power), and sustainable water management (e.g., rainwater harvesting, efficient irrigation for green spaces).

Enhanced Ecosystem Services: The vacated high-risk zones will be repurposed to enhance natural ecosystems, such as creating green buffer zones, wetlands for flood mitigation and biodiversity conservation, and community gardens. This will contribute to improved air and water quality and increased biodiversity within Poblacion.

Climate Change Adaptation and Mitigation: The relocated infrastructure and housing will be designed to withstand future climate change impacts, including more intense rainfall events and potential temperature increases. The development will also strive for carbon neutrality through reduced energy consumption and promotion of sustainable transportation (e.g., pedestrian-friendly design, bicycle lanes, electric vehicle infrastructure).

Circular Economy Principles: Waste management will be guided by circular economy principles, emphasizing waste reduction, reuse, recycling, and composting, building upon Bustos' earlier "Zero Waste" initiatives with modern technologies and community engagement.

- **Social Sustainability:**

Enhanced Safety and Well-being: Relocation to safer grounds will significantly reduce the risk of displacement, injury, and loss of life due to flooding and other hazards, leading to improved physical and mental well-being for affected communities.

Equitable Development: The relocation process will prioritize social equity, ensuring that vulnerable populations receive adequate support and that the new communities offer opportunities for social inclusion, access to quality education, healthcare, and cultural facilities.

Stronger Community Cohesion: The development of well-planned and inclusive relocation sites will foster new social networks and strengthen community bonds. Investments in community spaces and participatory governance will empower residents to shape their future.

Preservation of Cultural Heritage: Efforts will be made to preserve and integrate the cultural heritage of the relocated communities into the new developments, fostering a sense of continuity and identity.

Improved Access to Opportunities: The long-term vision includes creating opportunities for skills development, livelihood diversification, and economic empowerment in the relocated areas, reducing dependence on vulnerable sectors.

- **Economic Sustainability:**

Resilient Local Economy: A diversified and resilient local economy will be fostered, less susceptible to disruptions from environmental hazards. This includes supporting sustainable agriculture, promoting eco-tourism (leveraging the enhanced green spaces), and attracting green industries.

Green Jobs Creation: Investments in sustainable infrastructure, renewable energy, and environmental management will create new "green jobs" for the community.

Sustainable Consumption and Production: Promoting sustainable consumption patterns and supporting local businesses that adopt environmentally sound production practices will contribute to long-term economic viability.

Reduced Disaster-Related Costs: By proactively relocating and building resilience, the long-term costs associated with disaster response, recovery, and infrastructure repair will be significantly reduced, freeing up resources for other development priorities.

Long-Term Vision Elements:

A Model Sustainable Community: Poblacion Bustos will become a model for integrating resilience and sustainability in urban development, showcasing innovative solutions for hazard mitigation, environmental stewardship, and social equity.

Empowered and Engaged Citizens: Residents will be actively involved in decision-making processes related to their community's development, fostering a sense of ownership and responsibility for its sustainability.

Thriving Green Spaces: The municipality will boast interconnected green spaces, providing recreational opportunities, enhancing biodiversity, and contributing to a healthier urban environment.

Climate-Smart Infrastructure: Infrastructure will be resilient to climate change impacts and designed for long-term efficiency and sustainability.

A Hub for Sustainable Innovation: Poblacion Bustos could become a center for showcasing and promoting sustainable technologies and practices within the region.

Achieving this long-term vision requires:

Continuous Collaboration: Ongoing collaboration among all stakeholders – government agencies, local communities, businesses, CSOs, and academia – is crucial for effective planning, implementation, and monitoring.

Long-Term Investment: Sustained financial and technical investments are necessary to realize the goals of relocation and sustainable development.

Adaptive Management: A flexible and adaptive approach that allows for adjustments based on monitoring, evaluation, and evolving circumstances is essential.

Education and Awareness: Raising public awareness and promoting education on resilience and sustainability principles will foster a culture of environmental responsibility and preparedness.

Table 16
Summary of the Community Relocation and Displacement Plan

Component	Details
I. Executive Summary	Being near the Angat River, Poblacion Bustos often experiences potential flooding problems. The proposal calls for the safe relocation of those at risk and for using resilience and sustainability in the new areas.
II. Context and Needs Assessment	A. Contextual Overview: Many residents live close together; people here have varied jobs; there is a strong sense of community; flooding is a major risk. B. Needs Assessment: Well-designed hazard maps, good early warnings, available shelters, joint decisions about moving and help to survive financially.
III. Vision and Objectives	Vision: A Poblacion Bustos community where people enjoy safety and a strong sense of community.

	Objectives: Improve security, guide planning for a future-proof environment, guarantee justice, help people earn an income, build ability to stand resilient and enforce proper management.
IV. Relocation Strategy	Using a step-by-step system, focusing on having the community involved, respecting the local culture and designing sustainable places to host new communities.
V. Governance and Institutional Arrangements	A mode of management where national, provincial and local agencies join forces and work together closely.
VI. Risk Management and Contingency Planning	Identifying early whether a project could create risks (in the environment, society, economy or technology) and developing plans to handle any problems that could appear.
VII. Communication and Advocacy Strategy	Ensuring that the organization communicates clearly, involves all the key people and is empathetic in its relationships with stakeholders. Important tasks are to make the issue clear, ensure the organization supports it, handle issues that arise and push for policies.
VIII. Sustainability and Long-Term Vision	Going for less environmental damage, a stronger society and an economically stable area, with a model sustainable community as the top aim.
IX. Phased Implementation Plan	Phase 1: Working on the planning part (reviewing risks, interacting with stakeholders and finding a good site). Phase 2: Work includes land acquisition, construction of basic infrastructure and supporting people as they move. Phase 3: Enhancing both relocation and development in the communities (such as expanding housing and supporting social needs). Phase 4: Working on sustainable growth and making communities more resilient, including monitoring and supporting groups (capacity building, engagement).
X. Livelihood and Economic Development	Concentrating on environmentally friendly work, training new skills and helping communities join the local economy.
XI. Social and Cultural Integration	Making sure all cultural needs are respected, the community stays united, and everyone participates in the move.
XII. Environmental Sustainability Initiatives	Adding environmental factors during planning, building and daily city operations to ensure less harm to the environment and greater durability.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The main findings from the research are synthesized in this chapter, which combines the insights from the quantitative as well as qualitative data.

Summary of Findings

1. Effective ways that promote community engagement and the integration of local knowledge in the relocation process. Residents stated that there were large gaps in the community engagement and a lack of use of local knowledge in the relocation process. Like many other issues, while local government officials appeared somewhat active, other stakeholders (NGOs, community leaders) were involved to only a low extent. Often, this decision-making was perceived as being unclear and unrepresentative, with the community members feeling that their input was not considered to be valued. In addition, sentiments were also very present that cultural sensitivity and respect were not adequately dealt with in relocation policies, this being an indication of the lack of communication and collaboration with stakeholders.

2. The socio-economic and environmental impacts of existing relocation strategies as described. The negative socio-economic impacts post relocation were mainly on income stability and employment opportunities, and the general feedback on the financial conditions has worsened. Environmental conditions were mixed, as many were pleased that area was clean and green, yet lingering were suspicions of pollution and safety. Essentially, the new community did not adequately serve basic needs, like healthcare and education, and thus, access to basic services was also viewed unfavorably.

3. Community members' perception of the effectiveness of relocation efforts in promoting resilience and sustainability, based on their lived experience. Living within communities constituted those who were skeptical of the suitability of relocation efforts to enhance resilience and sustainability. Of course, some appreciated infrastructure improvements coupled with some sustainable measures, but most spoke of disillusionment as certain felt that relocation hadn't done enough to make their lives easier regarding the environmental threats or foster community cohesion.

4. Challenges and opportunities that stakeholders and communities encounter in enhancing the sustainability of relocation efforts. Several challenges were identified towards relocating efforts, including a lack of enough funding, a lack of support from local authorities, and poor infrastructure. Unfortunately, there was also potential for further improvements for Sustainability, such as through community-based initiatives and collaboration with NGOs. The respondents argued that they would willingly put forth efforts aimed at reducing waste if adequately supported and supplied with the necessary resources.

Conclusions

This study sheds light on the absolute and indispensable contributions of demographic understanding, community engagement, and socio-economic concerns in community relocation processes. Respondents' profiles bear the mark of an extremely young and largely female population, deeply rooted in their current setting, which implies that relocation strategies must consider the perception and needs of this special group. Specific conclusions for each objective are as follows:

1. The effective ways that promote community engagement and the integration of local knowledge in the relocation process. Highlighted problems of stakeholder involvement and decision making imply that there were serious shortcomings in the process of communicating with all the community members. Relocation policies remained embedded in a cultural insensitivity that, alongside worsening feelings of

disenfranchisement, perpetuated among residents, pushing the need for local traditions and knowledge to be respected and integrated.

2. The socio-economic and environmental impacts of existing relocation strategies. The predominantly socio-economic impacts have been largely negative, with most respondents reporting that their income security has been undermined, and indeed, there have been limited opportunities to work in the new location of the relocated families. While the conditions have usually been found to be better in terms of cleanliness, pollution, and safety issues were still an issue. It remains that essential services are inadequate, which is an essential gap that requires action to ensure the well-being of relocated communities.

3. Perceptions of the community members in the effectiveness of relocation efforts in promoting resilience and sustainability, based on their lived experience. The effectiveness of relocation efforts showed that people were skeptical that relocation efforts had sufficiently improved resilience or sustainability. Yet the study also lists ways in which that work can be improved, through community-led efforts and NGO cooperation, aimed at instilling a sense of ownership and agency on the part of the residents.

4. Challenges and opportunities do stakeholders and communities encounter in enhancing the sustainability of relocation efforts. That said, the insights obtained from this research can be used to develop a comprehensive Community Relocation and Displacement Plan, going beyond the issue of resilience and strengthening the sustainability of relocated communities. Through inclusive planning, addressing the challenges identified and the appropriate use of opportunities, stakeholders could help support a better and better relocation, keeping in mind the voices and experiences of those most impacted.

Recommendations

1. Based on the study findings, the following recommendations are offered:
1. Local government and NGOs may locally associate knowledge and develop cultural sensitivity by providing policies for relocation that are culture-sensitive and follow local traditions. The presence of local knowledge in planning may help to develop scenarios that resonate with community values and promote acceptance and cooperation among residents.
2. Likewise, local governments may address socio-economic impacts by providing support programs for relocated families to increase their income stability and employment opportunities. Job training in programs, micro finance initiatives, and partnership with local businesses to generate job opportunities fitting for the people's skills and experience may be a part of this.
3. Bustos Municipality government may make sure that the relocation area is a place where essential services like healthcare, education, and sanitation are provided and there are enough of them. Such an undertaking could mean the investment in infrastructure improvements, creation of new facilities, and facilities for the provision of education and community health programs.
4. Bustos Municipality may monitor and evaluate relocation efforts by designing strong and effective monitoring and evaluation practices for the reliable appraisal of the effectiveness of relocation strategies and their influence on community resilience. They may also assess over time which areas can be improved or if the community is still being met regularly.
5. Bustos Municipality may promote community initiatives already underway on sustainability, like urban gardening, waste management, and others on renewable energy. Offering resources and training may allow residents to help take ownership of their environment and foster long-term sustainability.

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