

Rooted in Resilience: Sustainable Community Practices for Climate Change Adaptation in the Philippines

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ABSTRACT: This research focuses on sustainable community-based adaptation to climate change within coastal communities in the Philippines via a qualitative systematic review of current literature. Using thematic analysis of current approaches, the paper considered commonly used adaptation strategies, the conditions influencing their implementation and sustainability as well as the roles of local knowledge, community involvement and governance on enhancing climate resiliency. The results of the study indicate that ecosystem-based adaptations, disaster preparedness, sustainable resource management and participatory governance are instrumental in mitigating climate vulnerability. Nevertheless, there are still significant barriers to long-term adaptation, such as limited financial support, poor policy implementation, inadequate infrastructure and institutional limitations. The research concluded that an effective strategy for improving climate resiliency can only result from collaboration among communities, governmental organizations and other stakeholders through the use of both indigenous knowledge and scientific methods of climate change adaptation.ss

INTRODUCTION

In the 21st century, Climate Change is quickly becoming one of the most pressing global challenges faced by the world, affecting human societies, environmental systems, and economies around the world. The National Geographic (2026) defined climate change as a long-term change in the Earth's climate system, including the temperature, precipitation, sea level and weather patterns over a long timeframe. The World Health Organization (2023) defined Climate change as something that occurs when the Earth becomes warmer over time, causing unusual weather patterns. The changes that occurred in the climate system can be attributed to human activities, such as industrial activity, deforestation, and fossil fuel combustion which increases the greenhouse gas emissions in the atmosphere (IPCC, 2023). These human activities intensified global warming and led to the rising of sea levels, prolonged droughts, flooding, biodiversity loss, food insecurity, and stronger tropical cyclones. However, the effects of climate change extends beyond environmental impacts, it also affects the public health, threatens livelihoods, and economic stability, particularly in developing countries that only have a limited financial resources and adaptive capacity.

The Philippines despite being among the smallest contributors to climate change, amid scrutiny of flood control projects over alleged irregularities, has once again topped the World Risk Index 2025, ranking as the world's most disaster-prone nation due to high risks from floods, storms, droughts, and earthquakes. The geographical location of the Philippines is located along the Pacific typhoon belt, and the Pacific ring of Fire, making the country to experience frequent natural disasters. According to PAGASA (2018), the country experiences an average of 20 typhoons annually, five of which are destructive enough to trigger flash floods, particularly in low-lying and coastal areas. In 2013, one of the most catastrophic climate-related disasters in the Philippine history was Typhoon Haiyan, locally known as Yolanda, struck the Visayas region. It caused a massive destruction, displacement of families, and caused extensive death and destruction to livelihood (NDRRMC, 2014). Coastal communities located in Eastern Visayas experienced severe impact from the immense storm surge and strong winds associated with the typhoon, as both types of damage destroyed houses, fisheries, and vital infrastructure within coastal communities. The devastating effects of Typhoon Yolanda showed how vulnerable the Philippine coastal communities are to hazards that are associated with climate change. These shows the the need for long-term initiatives to assist with the climate adaptation and help communities, not just stick to the norm Filipino resilience.

Communities in coastal areas are among the areas that are most at risk from climate change. These communities are highly vulnerable to flooding caused by the rising sea level as well as other extreme weather events such as storm surges. Households living on the coastal areas depend heavily on livelihoods that have a direct climate impact such as fishing, aquaculture, tourism, and small farming. With many of these livelihoods being highly dependent upon climate conditions and fisheries and the ocean continually

degrading, the security of food, the stability

of income and the well-being of communities is constantly under threat. Moreover, Climate adaptations in the Philippines are heavily centralized that it fails to fully incorporate the lived experiences and vulnerable communities' prioritization.

Existing literatures on climate change adaptation in the Philippines frequently focuses only on national climate policies and institutional frameworks, risk reduction and technical adaptation measures. Example, Lasco et al. (2009) and Zafra (2017) examine national climate policies and institutional frameworks and discuss how the design of a country's national legislation creates difficulties for national agencies to provide budgetary funding for implementation of programs at the local level. Furthermore, reports from organizations such as the Asian Development Bank (2013) and the UNDRR (2019) tend to discuss formal disaster risk reduction programs with an emphasis on the eventual incorporation of high-level hazard mapping information into local municipal planning. Other researchers, such as Bollettino and colleagues (2020) and Thomas and others (2021), study technical adaptation measures and their findings highlight a major gap between household preparedness and the high local need for hard infrastructure (e.g., seawalls or concrete shelters). While these literatures provide a valuable insight into climate policy and governance in environment, there's still a gap in how coastal communities themselves sustain a community-based adaptation practices in the local context.

The gap within existing literature necessitates conducting additional localized and community-centric approaches which encompass how different coastal communities adapt. Knowledge concerning how communities react to environmental hazards has the potential to shed light upon building sustainable resilience, achieving participatory governance and providing localized environmental management solutions. By assessing adaptation-related practices from the perspective of coastal populations, it will also be possible to discover effective methodologies and recurring obstacles that provide input into creating future climate adaptation policies and community development programs.

To date there is a compounding threat from climate change and a continually high level of vulnerability for coastal populations throughout the Philippines. This study will identify community-based climate change adaptation strategies being utilized in diverse coastal regions throughout the Philippines. The overarching objectives of the study are threefold: to identify local adaptation practices; to identify roles of community engagement and local governance in enhancing sustainability; and to categorize challenges faced by communities to successfully implement and sustain adaptation initiatives. The overarching goal of this study would be to contribute to the larger discussions surrounding climate resilience, environmental governance, sustainable development, and community-based adaptation toward coastal communities within the Philippine context.

METHODOLOGY

This study was a qualitative inquiry that utilized a systematic review of literature and thematic analysis, as its methodological design to investigate community-based climate change adaptation practices among coastal communities in the Philippines. The qualitative methodology used was appropriate in as much as the researcher aimed to analyze and synthesize what is known and documented concerning existing studies, accounts and resilience strategies on climate change adaptation among vulnerable coastal communities rather than quantify and test statistical relations among various variables (Braun and Clarke, 2006). The research was directed toward the understanding of adaptation strategies, practices, implementation and development among coastal communities in relation to documented environment and climate change issues.

Secondary data collection methods such as the review of existing published data was utilized. The secondary data sources included peer reviewed journal articles, published studies, theses, dissertations, government papers, policy documents, institutional documents, news articles, and local and international organizations' publications regarding climate adaptation and coastal resilience. Such sources allowed for the examination of a range of literature relating to adaptation programs, environmental risks, disaster reduction activities, and capacity building activities related to coastal communities in the Philippines (Jamero et al., 2018; Pealba et al., 2021). All non-English publications were examined and translated where necessary in an effort to achieve maximum scope of the relevant research.

Three research questions formed the basis of the study, guiding the review and analysis: (1) What are the commonly practiced community-based climate change adaptation strategies of the coastal communities of the Philippines? This question aimed to explore and explain the variety and type of adaptation strategies implemented in the Philippines, in terms of their classification, modes of implementation, and situation specificity; (2) What are the factors that inhibit the implementation and sustainability of the implemented adaptation initiatives of the coastal communities of the Philippines? This question focused on identifying various factors that hinder the implementation and sustainability of adaptation initiatives in the Philippines from institutional, socio-economic, political, natural environment and resource perspectives; and (3) How do local knowledge, community participation, and local governance contribute to the resilience of Philippine coastal communities to climate change? This question intended to examine the influences and degree to which the traditional indigenous knowledge, participatory approaches and governance systems may contribute to local resilience against climate change.

All the selected articles had relation to climate change adaptation, resilience strategies and community-based action within the Philippines coastal and islands. Priority was given to those dealing with issues such as community participation, traditional knowledge, ecosystem-based adaptation, readiness, livelihood diversification and adaptive governance arrangements (Jamero et al.,

2018; Pealba et al., 2021). Articles completely irrelevant to adaptation, without community-level considerations or entirely on the quantitative modelling approach excluding the social or behavior aspects were omitted.

A systematic screening and assessment of relevant literature was carried out based on relevance, reliability and consistency with the research questions. Information available in titles, abstracts, executive summaries, and full texts was screened to ascertain relevance and suitability. The documents gathered were later grouped by adaptation strategy, contextual setting, challenges faced and by governance/community factors affecting resilience outcome, in order to provide a comprehensive overview and synthesis of available knowledge and literature on community-based adaptation in coastal areas.

The data were analyzed through thematic analysis, according to Braun & Clarke (2006), a recognized technique in qualitative research methodology for identifying, analyzing, and reporting themes or patterns in a qualitative dataset. The chosen literature was read numerous times so that data became recognizable and was then methodically coded under corresponding codes namely adaptation practices, vulnerability context, governing role and community response. Then the codes were clustered into wider themes which included disaster preparedness and disaster risk reduction, livelihood diversity, ecosystem-based adaptation, coastal resource management, community involvement, indigenous and local knowledge, relocation and settlement adaptation, governing approaches and constraints and institutional bottlenecks.

These themes covered a range of coastal communities in the Philippines' responses to the climate-related risks like sea level rise, storm surge, coastal erosion and environmental degradation. The themes were later revisited, assessed, revised, consolidated and analyzed for consistency, coherence, analytical integration with the objectives of the research. This thematic synthesis provided a consolidation of findings from multiple secondary sources on adaptation trends, constraints, the role of participative governance and local knowledge in enhancing climate resilience in coastal communities (See et al., 2022; Cuaton, 2019).

RESULTS AND DISCUSSION

1. Community-Based Adaptation Practices Coastal Protection Strategies

Coastal protection is one of the most important adaptation sectors for coastal Philippine communities. As indicated by the research of Mao et al. (2026), both mangrove plantings and restorations represent an important aspect of an ecosystem-based adaptation strategy. Wherein, mangroves also serve as natural barriers to wave energy, storm surges, and coastal erosion, and mangrove restorations are a very effective coastal protection option when evaluated within systematic prioritization frameworks (Liu et al., 2025). In the Philippines, community members have initiated many mangrove restoration programs, which provide both coastal protection and create opportunities for carbon segregation and contribute to local fisheries (Jarapan et al., 2025). According to several studies of coastal cities in the Philippines, integrated ecosystem management of mangroves, seagrasses, and coral reefs produces a combined protective benefit (Mao et al., 2026), indicating that sites with a high coverage of mangroves have significantly lower vulnerability to coastal threats (Abante, Dioneda, and Perigrino, 2025).

Additionally, Coastal barangay areas in the Philippines have implemented coral reef restoration and marine conservation interventions as effective coastal protection strategies. The purpose of these projects is to restore essential habitats and provide wave protection that may decrease flood risks by as much as 87% in some coastal areas (Reguero, et al., 2025). The studies conducted find that by employing a community-based bottom-up governance process, coral reef health, diversity, and fisheries can be enhanced through the establishment of marine reserves (Beger, 2007). Where, the Philippines' coastal communities have created a variety of marine protected areas and community-based management processes using a combination of traditional ecological knowledge and modern conservation science (Paxton, et al., 2024).

Moreover, the broader coastal ecosystems management programs of community-based approaches in the Philippines incorporate these protection strategies into a comprehensive overall framework. This systems-based approach understands that mangroves, seagrasses, and coral reefs are interconnected coastal seascapes requiring integrated management (Nasruddin et al., 2025). Adding to that, communities are now developing geo-spatial analyses to determine where coastal areas are at risk and prioritize conservation efforts (Suwardi et al., 2025), where analyses show that nature-based solutions provide better long-term sustainability than hard-engineered solutions, as well as being more cost-effective (Jordan and Fröhle, 2022).

Water and Resource Management

For coastal Communities in the Philippines, where salinity intrusion, erratic rainfall, and depletion of groundwater have made water management the most significant adaptation challenge facing them, rainwater harvesting systems have become very popular. According to a recent report from the Asian Development Bank (ADB), 89-100% of households operating household-sized rainwater harvesting systems manage their water scarcity as well as their seasonal drought stress (Hossain & Li, 2024). Rainwater harvesting systems tend to be a common water management technology utilized by Philippine coastal's population. In particular, the types of rainwater harvesting identified in the literature vary greatly, with techniques ranging from basic rooftop collection to technologically integrated systems that utilize IoT sensors to track water quality status (Hapsari et al., 2025).

Adding to that, improved irrigation and water conservation strategies are being adopted by agricultural and aquacultural communities to deal with the changing climate. Numerous studies show that implementation of climate-resilient (drip irrigation, mulch, and use of water-efficient crops) agricultural practices results in lower demands for water, as well as maintaining/increasing

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productive output (Swarnokar et al. 2025). Through the integration of modern micro-irrigation technology and traditional water management techniques, communities in the Philippines are saving between 30-40% of water compared to traditional flood irrigation (Rejesus et al., 2010).

Furthermore, the use of these systems throughout agricultural production has also been beneficial to aquaculture systems. Where practical sustainability in resource use is a fundamental element of the adaptive strategy that communities use to reconcile the pressures of meeting their short-term livelihood requirements with the long-term sustainability of resources. Communities have put into place resource use practices to reduce pressure placed upon a single resource, including rotational harvesting, community-based resource management systems, and the use of livelihood diversification strategies (Damayanti et al., 2025). Specifically, the connection between traditional ecological knowledge (concerning the seasonal cycles of the resource) and contemporary approaches to conservation is an important component of these practice.

Local Disaster Preparedness

Communities along the coast of the Philippines that are susceptible to typhoons, flooding, and storm surge could utilize community-based early warning systems for how to prepare for the changing climate in their areas. Early warning systems use various components such as meteorological information, community observation networks and quick communication systems (Lor, 2025). The literature on disaster preparedness in the Philippines indicates that an effective early warning system requires not only the use of technology but also thorough community participation in the design, implementation and operation of such systems (Saflor and Kudhal, 2026). In the Philippines, communities have developed early warning systems that reflect the culture of the people by using traditional indicators of storms and contemporary meteorological forecasting (Evangelio, Dator and Orejudos, 2024).

What is more, Training for disaster preparedness and drills for evacuations are very important to help communities adapt. Communities that have had regular training and pre-planned evacuations/training programs have been able to increase the effectiveness of disaster risk reduction efforts after a natural disaster occurred than communities that do not have any type of those type of training. The Philippines is becoming more prepared for disasters and have better prepared than other countries due to focusing on inclusive preparedness such as providing for the needs of the female population, elderly population and disabled population (Yarramsetty and Prasanna, 2024). These programs work best when the training is incorporated into the community culture, works with the local leaders and includes a spiritual/cultural factor along with the actual training for responding to a disaster.

As well as community disaster preparedness relies on two key components: volunteer networks and local risk-reduction initiatives. These two components, which are frequently founded on already existing social capital systems, facilitate the quick mobilization of community assets in the case of an emergency (Piggott-McKellar et al., 2019). In the Philippines, volunteer networks have been formalized through DRP programs, which have created defined roles and responsibilities, as well as systems to pre-position resources in the village before a disaster occurs (Bist et al., 2024). Finally, the inclusion of women, youth, and marginalized members of the community in volunteer networks has been essential to providing equitable disaster response and increasing overall community resilience (Magno, Bito-Onon, and Virata, 2026).

2. Outcomes Observed

The literature regarding the community-based approach to climate change adaptation (CBCCA) in coastal communities in the Philippines has shown a number of positive outcomes contributing to enhanced resilience towards climate-related hazards. The most significant outcome is increased preparedness for disasters and capacity to adapt. Adaptive capacity was increased by programs that improved community preparedness through education about climate change, the establishment of early warning systems, the implementation of disaster risk reduction strategies, hazard monitoring and training in response to emergencies. Through these interventions, residents were given the information and ability to respond appropriately (during times of disasters, before happening and/or after) to disaster situations. By participating in evacuation drills and attending workshops on emergency preparedness, as well as participating in risk assessment activities, members of the community were able to improve their organization capacity and increase their level of knowledge on hazard identification and knowledge or skills for responding to hazards, thus reducing vulnerability to disasters occurring in the future (Jemere et al., 2018; Peñalba et al., 2021).

Literature has identified a second major outcome which is reducing loss due to disasters. CBCCA initiatives resulted in having lower levels of damage from climate-related hazards to humans, including loss of life, loss of livelihood and loss of property. Ecosystem based adaptive strategies such as restoring mangrove forests, restoring coral reefs and managing resources sustainably are at the core of reducing disaster risk. For example, restored mangrove forests play the role of natural barriers that protect coastal settlements and the resources they rely on. They provide a buffer against damage due to storm surge, wind and coastal flooding; while healthy coral reef systems mitigate wave energies and reduce shoreline erosion. Ecosystems protected by restored mangrove and coral reef systems will continue being a source of protection for coastal settlements and their livelihoods. Also, better disaster preparedness and evacuation systems led to faster and more effective responses to emergencies, thereby decreasing the number of people who died due to disasters and minimizing the amount of damage being done. Research also indicated that the implementation of CBCCA strategies led to communities recovering faster from disasters and restoring their families' livelihoods sooner thereby reducing long-term socio-economic impacts. (Nabong et al., 2021; Yoshioka et al., 2021).

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These programs have resulted in stronger social connections and enhanced sense of belonging, increased involvement in community affairs, and raising awareness about climate change issues. As a result, residents of participating communities are better equipped to respond to the immediate impacts of climate change and participate in long-term adaptation strategies because they have developed mutual trust, embraced shared responsibilities for protecting the local environment and formed collaborative relationships with each other, with their local governments, and with non-profit organizations. The CBCCA Projects have facilitated the development of collectives and increased levels of community participation in adaptation projects. Increased levels of climate literacy will improve individual and family decision-making regarding disaster preparedness, resource management and livelihood planning. Events such as educational training programs, community forums and discussion groups have helped to raise the level of awareness within participating communities about the potential for future climate risks. As a result, individuals and families are better equipped to make informed decisions regarding their disaster preparedness efforts. In addition to this, many individuals have demonstrated an increased willingness to participate in adaptation initiatives and have begun to adopt sustainable practices within their ecosystems. Therefore, these outcomes have encouraged communities to strengthen their resilience and become better stewards of the environment.

Coastal communities' livelihoods have benefited from significant contributions made through initiatives which promote sustainable fishing, diversified livelihoods and restoring ecosystems;. These initiatives decreased the vulnerability of the coastal communities to climate induced disruptions and created an increase in economic stability for the communities they operate in. In addition, households that rely on the climate sensitive sectors of fishing, aquaculture, tourism and agriculture have improved availability of resources and obtained alternative livelihoods. Ecosystem restoration has ultimately aided in increasing fish stocks and improving marine biodiversity, which has created food security and income security for coastal families. As a whole, CBCCA research indicates that CBCCA initiatives have increased adaptive capacity in coastal rural communities of the Philippines; reduced loss due to disasters; enhanced social cohesion between actors; increased climate change awareness; and enhanced livelihood resiliency; Therefore, CBCCA is an effective and sustained strategy for enhancing long-term resiliency and enhancing climate adaptive development in coastal vulnerable areas.

Effectiveness of Community-Based Climate Change Adaptation Practices

This review found that the establishment of community-based climate change adaptation (CBCCA) practices can help to build resilience for the coastal population in the Philippines. Some of the common strategies utilized are the replanting of mangrove trees, coastal resource management, disaster preparedness programs, early warning systems, diversification of livelihoods, creation of community marine protected areas, and ecosystem-based adaptation strategies. These techniques have successfully mitigated the risks of climate change, such as flooding, storm surge, coastal erosion, and sea-level rise, and so far have contributed to livelihoods and sustainable environmental management in the communities (Peñalba et al., 2021). These strategies, including the restoration of mangrove forests and the protection of coastal ecosystems, provide both environmental protection and economic benefits for the fishing communities.

Local culture and indigenous knowledge systems greatly influence how effective these adaptation practices will be. For instance, coastal areas are home to numerous communities that have developed a wealth of traditional and environmental knowledge over time by interacting with nature. The accumulated knowledge is based on long-term and traditional observations of weather, tidal cycles, marine resources, and other environmental conditions that enable communities to anticipate hazards and adapt their livelihoods accordingly. Indigenous and local knowledge forms the foundation of many adaptation strategies since they are rooted in a specific geographical environment, situated in a specific period, and embedded within the fabric of a community's practices (Hiwasaki et al., 2024). As such, multiple studies prove that local knowledge is a reflection of existing vulnerability and an indispensable component of devising adaptive strategies for local contexts (See et al., 2024). Consequently, integration of traditional ecological knowledge and modern scientific methodologies improves the effectiveness and sustainability of adaptation projects.

In terms of implementing the adaptation strategies, community-driven and participatory methods of building resilience are highly significant. When the community participates in decision-making, planning, and execution, it improves adaptation outcomes by increasing climate risk awareness, thereby encouraging communities to work together toward resilience objectives. Rather than treating communities as passive recipients of assistance, CBCCA recognizes them as active agents of change (Ensor & Berger, 2009). Furthermore, a study conducted by Nabong et al. (2021), found that adaptation priorities of the national government often clash with local residents, thus highlighting the need for a blend of perspectives during the climate adaptation planning process. In addition, participatory methods help ensure that adaptation projects are accurately matched with community needs, increasing the likelihood of community acceptance and aiding in long-term sustainability efforts.

Obstacles to Effective and Sustainable Adaptation Efforts

There are still some barriers that pose a challenge to the adoption and sustainability of community-based adaptation strategies despite their positive contributions. The lack of funds and financial support can be cited as one of the most significant factors. Most of the coastal communities rely heavily on the financial help coming from LGUs, national agencies, and NGOs for the implementation of their adaptation efforts. However, the funds are not enough to address the increasing number of climate-related issues. For instance, the People's Survival Fund (PSF) was created to provide local financial assistance, but it has been difficult to

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access for several communities due to various institutional barriers. (Yanquiling, 2025).

The issue regarding poor governance and weak policy implementation also presents a major obstacle. Even though the Philippines has formulated various climate change adaptation through legislation such as the Climate Change Act of 2009 and Disaster Risk Reduction and Management Act of 2010, there is still a challenge when it comes on the implementation at the local level as it remains inconsistent (Lasco et al., 2016).⁶ The inadequate coordination between government agencies, limited technical capacity, and insufficient community representation often weaken meaningful implementation outcomes. Nabong et al. (2021) highlighted that adaptation priorities established by government officials often differ from those of local communities, highlighting a disconnect between policy formulation and local realities. This mismatch may result in adaptation programs that fail to address the most pressing needs of vulnerable coastal populations.

The lack of basic infrastructure and technology in coastal regions adds as a challenge. Many communities do not have access to resilient infrastructures, advanced monitoring systems, and reliable climate data. With this, local safety measures often fail, as it increases exposure to climate hazard events. This vulnerability is worse in remote and marginalized areas, where poor roads and weak communication networks constrain disaster recovery. In addition to this, the speed of climate change is outpacing local defenses. Coastal areas are struggling with rising seas, more intense storms, and the erosion of their land. A major issue is saltwater contamination, which enters wells and fresh water through the soil and nearby rivers. At the same time, changes in the marine environment, such as declining fish populations, are making it harder for people to earn a living. While these communities use various methods to handle these changes, the sheer speed and strength of climate events are becoming too much to manage. The demand for help now exceeds the resources these local strategies can provide. This trend indicates that community-level adaptation cannot succeed in isolation. To survive, these local efforts must be supported by larger state programs and long-term climate mitigation.

Bridging Local Resilience and Institutional Support for Climate Adaptation

This review offers several insights. First, it can be noted that the resilience demonstrated by the people living in coastal communities throughout the Philippines helps them to survive during times of natural disasters (Penalba et al., 2021). This trait shows up in each individual's daily life, as it often allows individuals to be resourceful in dealing with recurrent problems caused by natural disasters. However, it is important not to put too much emphasis on resilience as it may downplay the need for better infrastructure. These communities should be backed by formal resources and institutionally based assistance, rather than allowing them to exclusively rely on their natural strengths, like resiliency.

Second, this review highlights the need to blend traditional local wisdom with modern scientific methods. Local and Indigenous knowledge provides insights into how the environment behaves and how to manage resources or predict dangers. On the other hand, scientific adaptation methods provide technology and information-based solutions. In fact, research shows that a combined scientific and indigenous/local-based knowledge system has the potential to develop more culturally relevant, complete, and environmentally sustainable climate adaptation strategies (Campos, 2019; World Development, 2024). This approach lets communities continue implementing local knowledge-based practices, while also gaining the advantages of modern climate science.

At the end of the day, no single group can solve this alone. Community-based efforts are effective when it is backed by government institutions, academic organizations, and environmental groups. The most successful climate adaptation approaches require equal participation by a wide variety of actors who collectively work to relieve communities of their vulnerabilities while providing support for local priorities (Lasco et al., 2016). These partnerships do the heavy lifting—finding the funds, providing the tech, and making sure rules actually work on the ground. When established within participatory governance frameworks, where the community has a voice, adaptation can be more successful, and results will meet the needs of the local communities. As climate change continues to intensify, greater emphasis will be placed on collaboration and inclusion in order to protect the local community's livelihoods, ecosystems, and well-being of Philippine coastal communities.

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