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The role of community participation for sustainable development: The case of island barangays

Maria Danesa S. Rabia*

College of Fisheries, Bohol Island State University, Calape, Bohol, Philippines

Article published on April 17, 2025

Key words: Community participations, Island Barangays, Participatory, Sustainable development

Abstract

Community development is an endeavor often marred by projects that, despite initially starting with enthusiasm for sustainable development, can encounter various challenges. This study aims to document the community development projects initiated on the island. The research employs a mixed-method design, specifically a sequential explanatory design, which involves collecting and analyzing quantitative data followed by qualitative data in two consecutive phases within a single study. The results revealed that the demographic profile of the selected island barangays includes factors such as age, gender, educational background, and occupation. In terms of physical infrastructure, the landmarks identified in the community include households, the barangay hall, the day care center, the primary health center, the purok center, the public elementary school, the fish port, the multipurpose center, the electricity generator, communal toilets, garbage disposal facilities, rain collectors, open dug wells, pathways, a basketball court, and a Catholic chapel. Additional infrastructures related to marine coastal zone resources were also identified, such as areas for traditional gleaning, fishing grounds, mangrove plantation areas, fish ports/landing sites, anchorages, mariculture zones (including fish cages and fish pens), seaweed farming, shellfish culture, fish drying areas, lighthouses, and garbage disposal areas. Issues observed included the degradation of marine habitats/mangrove overharvesting, lack of alternative livelihood projects, high costs of fishing inputs/low prices of fishery products, poor sanitation facilities, and, lastly, declining fish catches. These problems were linked with the roles identified in sustainable community development projects. The presence of diverse resources on the island indicates a potential for more effective sustainable development programs for the island community.

*Corresponding Author: Maria Danesa S. Rabia 🖂 mariadanesa.rabia@bisu.edu.ph

Introduction

Island barangays are integral to the social, economic, and environmental fabric of their regions. As local administrative units in the Philippines, they serve a crucial role in connecting national policies with community-level needs and realities. Their significance extends well beyond administrative duties; they are central to community development, cultural preservation, disaster management, economic activity, and environmental protection. These barangays face unique challenges due to their geographic isolation and are essential in fostering resilient and sustainable island communities. Understanding their importance underscores the need for tailored support and resources to empower these local units in their diverse and critical roles.

In the context of the Philippine setting, several studies focus on island barangays, offering valuable insights into various aspects such as governance, disaster management, economic development, cultural preservation, and environmental conservation. Mendoza and Santos (2019) explore disaster risk reduction strategies in island barangays, providing case studies from various Philippine islands. Dizon and Enriquez (2021) examine governance structures and innovations in these administrative barangays, highlighting both challenges and successes.

Rivera and Alvarez (2018) provide an updated perspective on the importance of economic development initiatives and livelihood strategies in island barangays, emphasizing sustainability and local economic impacts. Morales and Torres (2020) discuss the need for preserving cultural heritage and maintaining community identity amidst modernization. This focus extends to environmental management practices and marine conservation efforts within island barangays, as emphasized by Garcia and Domingo (2022), who highlight local conservation strategies.

Community involvement is crucial for achieving sustainable development. The emphasis on local

knowledge and relevance is key, as community members often possess valuable insights into their environment, resources, and challenges. Their involvement ensures that development initiatives are relevant, culturally appropriate, and address the real needs of the community.

Active participation in development projects fosters ownership and empowerment among community members. This empowerment leads to a greater commitment to the sustainability of the projects, as people are more likely to maintain and protect what they have helped create.

Furthermore, participation enhances social cohesion, collaboration, and trust among community members. This social capital is essential for mobilizing resources, solving problems collectively, and ensuring the long-term success of development efforts.

Participation also contributes to transparency and accountability in the decision-making process. It allows for effective monitoring of project implementation, ensuring that resources are used efficiently and equitably. Additionally, in island communities, involvement in planning and decisionmaking helps develop adaptation and resilience strategies tailored to specific environmental shifts or economic fluctuations.

By including diverse groups within a community, especially marginalized and vulnerable populations, participation promotes equity and inclusiveness. It ensures that the benefits of development are shared broadly and that no one is left behind. Projects that involve community participation are more likely to be sustainable in the long term, as engaged communities are more likely to continue the practices and initiatives established, leading to enduring positive outcomes.

To contextualized, the community participation is not just a component of sustainable development; it is a fundamental pillar that ensures development efforts are effective, inclusive, and sustainable over the long term. Generally, this study aims to document and identify the role of community participation as a crucial step toward sustainable development. Specifically, the study focuses on the following indices: Demographic Characteristics; Community Development Projects; and Key Roles for Sustainable Development.

Materials and methods

Research design

This study utilizes a mixed-methods research design, combining both quantitative and qualitative approaches to offer a thorough understanding of community participation. The research aims to examine community involvement development initiatives, evaluate in its effectiveness, and identify key roles and characteristics associated with successful participation.

Research environment and participants

This study was conducted in the island barangays of Calape, Bohol, specifically in Mantatao, with a focus on the fisherfolk of these island communities. The target population includes community residents of the selected island barangays, community leaders, and local government officials involved in development projects.

Data collection methods

Two types of data collection methods were used in this study. The first method was quantitative, involving surveys and questionnaires. The objective was to gather data on demographic characteristics, levels of community participation, and perceptions of development projects.

Semi-structured questionnaires with closed and Likert scale questions were utilized. Purposive sampling was employed, focusing on fishermen as the primary subjects. The initial survey questionnaires were distributed through face-toface interviews. The Standard Operating Procedure for conducting participatory rural appraisal, as outlined by Sontakki and Venkatesan (2019), was followed. The second method was qualitative, which included focus groups and participatory rural appraisal (PRA). This approach was used to gain in-depth insights into community members' experiences and perspectives on participation and development. Semi-structured discussion guides were employed, with purposeful sampling of 6-8 members per group, representing diverse segments of the community (e.g., youth, elders, women, and leaders). The results were grouped according to thematic analysis and transcribed by table and session.

Additionally, one-on-one interviews were conducted immediately after the PRA sessions to validate the respondents' answers. These interviews provided a deeper understanding of the roles of community leaders and officials in facilitating and managing participation. The results from these interviews were recorded, transcribed, and analyzed according to recurring themes.

Data analysis in this study included both quantitative and qualitative approaches. Quantitative analysis involved the use of descriptive statistics, such as means and frequencies, to summarize and interpret the survey data. For qualitative analysis, thematic analysis was employed to identify and interpret patterns and themes emerging from the focus groups and interviews.

For ethical considerations, informed consent was obtained from all participants to ensure they understood the study's purpose and their right to withdraw at any time, including risks, benefits, reimbursement, processes, etc., for the transparency of stud. The confidentiality of participants was strictly maintained, with responses being anonymized to protect their privacy. Instruments and materials are properly cited and authorized by the authors/sources.

Results and discussion

This section discusses the demographic characteristics of the study participants from the selected island barangays, examining factors such as age, gender, educational background, and occupation. Understanding the demographic profile of participants in community participation studies is crucial for interpreting how various groups contribute to and experience development initiatives.

Age distribution

The age distribution of participants in this study shows a diverse range of age groups, which is essential for capturing a broad spectrum of perspectives. The majority of respondents (45%) are between 30 and 49 years old, indicating a significant engagement from middle-aged adults who are likely to be active in community affairs and development projects. Meanwhile, younger individuals (ages 18-29) represent 25% of the sample, highlighting a growing involvement from the youth in community initiatives. Senior citizens (ages 50 and above) account for 30% of the respondents, reflecting their valuable experience and perspective in community participation.

Gender distribution

The gender distribution among participants is relatively balanced, with 80% male and 20% female respondents. This balance suggests that both men and women are equally engaged in community participation activities. However, further analysis is needed to explore any gender-specific roles or challenges in participation, as well as to ensure that gender dynamics are appropriately addressed in development projects.

Educational background

Participants' educational backgrounds vary, with 10% having completed tertiary education, 60% holding high school diplomas, and 20% having attained vocational training. The remaining 10% possess only elementary education. This distribution indicates a moderately high level as high school graduate within the community, which may influence the participants' ability to engage in and contribute to development projects. Higher education levels are associated with increased access to information and resources, potentially leading to more informed and effective participation.

Occupation

Occupational distribution among participants reveals a mix of professions, with 85% engaged in agriculture and fishing and 15% in local businesses. The prominence of agriculture and fishing reflects the traditional economic activities prevalent in island barangays, while the presence of local business owners and public servants indicates a diverse economic base. This occupational diversity suggests that various sectors are represented in community participation, each bringing unique perspectives and needs.

Household income

The majority of participants (55%) report a household income that falls within the lower to middle-income brackets, while 30% are in the upper-middle-income range, and 15% fall into higher income categories. This income distribution highlights the economic challenges faced by a significant portion of the community, which may impact their capacity to participate in and benefit from development initiatives. Addressing income disparities is crucial for ensuring equitable participation and access to resources.

The demographic profile of participants in this study reveals a well-rounded representation of different age groups, genders, educational backgrounds, and occupations (Fig. 1). This diversity is beneficial for capturing a comprehensive understanding of community participation. However, it is essential to consider how these demographic factors influence participation levels and experiences. Future research should explore how specific demographic characteristics affect involvement in and outcomes of community development projects.

Island community development projects

Island communities, characterized by their geographic isolation and unique socio-economic contexts, face distinct challenges and opportunities. Development initiatives led by these communities themselves are crucial for addressing local needs and fostering sustainable growth.



Fig. 1. The conduct of participatory rural appraisal a) writing of the informations from the key informants; b) continuation; and c) participants participations in the island barangay of Calape, Bohol

Community-initiated development projects are vital for addressing the specific needs and priorities of island communities. Local residents possess intimate knowledge of their environment, resources, and challenges, allowing them to identify and implement solutions that are tailored to their unique context. For example, projects focused on improving access to clean water or enhancing local healthcare services directly respond to pressing issues that may be overlooked by external agencies. By prioritizing local needs, these projects enhance the relevance and effectiveness of development efforts. The documentation of the infrastructure found in the showed significant potentials for sustainable development.

Infrastructure map

Infrastructure maps are vital tools for planning, managing, and improving community and regional infrastructure. They support strategic decisionmaking, enhance emergency response, facilitate maintenance and management, and contribute to effective community development and environmental sustainability. By providing a comprehensive and clear representation of existing and planned infrastructure, these maps play a crucial role in building and maintaining robust and resilient communities.



a) Infrastructure map of Mantatao island



b) Infrastructure map of Mantatao islandFig. 2. Infrastructure map that can be found in the island of Mantatao, Calape, Bohol

The infrastructure (Fig. 2) which includes the landmarks in the community such as households, barangay hall, day care center, primary health center, purok center, public elementary school, fish port, multipurpose center, BOHECO generator, communal toilet, garbage disposal, rain collector, open dug well, pathway, basketball court and catholic chapel are shown in Figs 2a and 2b. The physical infrastructures of the island were presented in the map with the use of pictures. There were seven (7) infrastructures found in Fig. 2a. These were the Bohol Electric Company (BOHECO) generator power house, catholic chapel, basketball court, health center, day care center and Mantatao Elementary School. Fig 2b depicts pictures of the physical infrastructures found in the island. These were the garbage disposal, communal toilet, rain collector water tank, open dug well, multipurpose hall, pathway, fish port, houses and the communal toilet used by the community residents.

Habitat map

The first Fig. 3 indicates the habitat map. These pictures were illustrated in the map as to what particular side in the map of the island does this habitat could be located. During the actual survey the distance was plotted using the GPS and presented through the map. Among of the features of the habitat are the resources that includes the dry land/terrestrial, mangrove/mudflats, sea grass/coral reefs area, sandy beach/shoreline and marine protected areas such as marine sanctuary located. Colors and pictures were used in the habitat map to facilitate further understanding. Dry land/terrestrial was represented by brown color and green color was used for mangroves. Sea grass and coral reefs areas were noted with light blue, sandy beaches and shoreline, yellow and dark blue for marine protected area. Mangrove flats of the area include the inhabited. There are total mangrove area of the island and area are considered as the gleaning, fishing and home of the fishes. Habitat maps are crucial for effective biodiversity conservation, ecosystem management, environmental and planning. They provide essential information for protecting species and ecosystems, assessing environmental impacts, managing natural resources, and planning for climate change. By offering a detailed spatial understanding of habitats, these maps support informed decision-making, promote sustainable development, and enhance public awareness and engagement in conservation efforts.



a) Habitat map

Marine protected Area



b) Marine resource map

Fig. 3. Habitat and marine resource map of the Island of Mantatao

Marine resources map

Fig. 3 shows the six marine resources commonly found in the island of Mantatao. These include squid, fish, seaweeds, sea birds, shell/clams and mangrove forest. These were represented by pictures. Marine resources maps show the distribution of various marine species and their habitats, aiding in the assessment of biodiversity and the identification of areas with high ecological value.

These maps are used to monitor changes in marine biodiversity over time, helping to detect trends, assess the impact of human activities, and plan appropriate conservation strategies.

Marine coastal resources uses map

Fig. 4 shows the map on the uses of marine coastal zone resources. Displayed were the places for traditional gleaning, fishing grounds, mangrove plantation area, fish port/fish landing, anchorages, mariculture zone (fish cages, fish pens), seaweeds farming, shellfish culture, fish drying area, light houses and garbage disposals area. Marine coastal resource maps are used to create zoning plans that designate specific areas for different uses, such as conservation, tourism, and recreation. This helps to prevent conflicts between competing uses and promotes balanced development. They guide the planning and development of coastal infrastructure, including ports, resorts, and coastal defenses, ensuring that these projects are compatible with environmental and resource considerations.

Issues/Problems map

Fig. 4 presents the map showing the issues/problems concerning environmental protection of the island barangay as ranked by the key informants. First in rank was the degradation of marine habitat/mangrove overharvesting, followed by lack of alternative livelihood projects. Third was high cost of fishing inputs/low prices of fishery products. Rank fourth was poor sanitation facilities and the last in rank was declining fish catch.



a) Marine coastal resource map



b) Issues/Problems map

Fig. 4. Marine coastal resource map and issues/Problems map

Identified key roles for sustainable development Sustainable development involves a balanced approach to economic growth, social inclusion, and environmental protection. Key roles for achieving sustainable development include:

Governance and policy framework: Creating and implementing policies that promote sustainability across all sectors. Establishing regulations to protect natural resources, reduce emissions, and ensure compliance with environmental standards. Effective enforcement mechanisms are essential for policy success with the involvement of all relevant stakeholders—government, businesses, communities, and NGOs—in decision-making processes to ensure that diverse perspectives are considered and that policies are equitable and effective.

Environmental conservation: Protecting and restoring and biodiversity ecosystems bv establishing protected areas, implementing conservation programs, and addressing threats such as habitat destruction and pollution. Taking actions to reduce greenhouse gas emissions and adapt to climate change effects. This includes promoting renewable energy sources, improving energy efficiency, and supporting climate-resilient infrastructure. This can be done by implementing measures to control and reduce pollution of air, water, and soil. This involves regulating industrial emissions, managing waste, and promoting cleaner technologies.

Community engagement participation: and Engaging local communities in decision-making and implementation of sustainable development initiatives. Local knowledge and participation are crucial for the success of projects and policies. Strengthening the capacity of communities to manage their resources sustainably, including providing training, resources, and support for local initiatives. This can be done by respecting and incorporating local cultural practices and knowledge into development projects to ensure that they are appropriate and effective.

Innovation and technology: This is an integration through investing in research and development of new technologies and solutions that support sustainability, such as renewable energy, sustainable advanced agriculture practices, and waste management systems. Facilitating the transfer of sustainable technologies and best practices between countries and sectors, particularly to developing regions that may lack access to advanced solutions. That includes the implementation of smart technologies and data-driven approaches to optimize resource use, enhance efficiency, and improve monitoring and management and last is.

Monitoring and evaluation: Developing indicators metrics to monitor progress and towards sustainability goals and assess the effectiveness of policies and programs. Using data and feedback to adjust strategies and approaches as needed, ensuring that they remain relevant and effective in achieving sustainable development objectives. By ensuring transparency in reporting on sustainability efforts and outcomes, allowing stakeholders to track progress and hold organizations accountable. Achieving sustainable development requires a multifaceted approach that integrates effective governance, economic planning, environmental conservation, social inclusion, community engagement, innovation, and rigorous monitoring. By addressing these key roles, societies can progress towards a balanced and equitable development model that meets current needs while preserving resources and opportunities for future generations.

Conclusion

Island community-initiated development projects play a critical role in addressing local needs, enhancing social cohesion, promoting economic resilience, supporting environmental sustainability, and preserving cultural heritage. These projects leverage local knowledge and resources to create tailored solutions that are both effective and sustainable. By empowering island communities to lead their own development efforts, these initiatives contribute to a more resilient and thriving island environment. As such, supporting and expanding community-driven projects is essential for fostering long-term development and well-being in island communities.

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