

## **Fisherfolk Voices on Mariculture Operations in Sagñay, Camarines Sur, Philippines**

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### **Abstract**

This study investigates the responses and perceptions of fisherfolk in Sagñay, Camarines Sur, Philippines to the Mariculture Park project, using the Triple Bottom Line (TBL) theory to assess economic, environmental, and social impacts. Employing a qualitative case study design, the research involves in-depth interviews with eight local fisherfolk from coastal barangays affected by the project. The study employs purposeful sampling to gather insights into the challenges and perceptions of participants regarding the mariculture initiative. Data was analyzed using reflexive thematic analysis (RTA), which identified key themes about the community's experience and the project's implications. The findings highlight the need for a balanced approach that integrates economic benefits, environmental sustainability, and social cohesion to support community well-being. The study recommends strategies for aligning mariculture practices with local needs and preserving ecological balance, providing valuable guidance for policymakers and practitioners to enhance the project's impact and address the concerns of affected fisherfolk.

**Keywords:** Ridge-to-reef approach, mariculture operation, triple bottom line theory, community voices, coastal community

### **Introduction**

Mariculture, the intentional farming of marine organisms like fish and shellfish, plays a vital role in global food security and sustainable seafood production (Erdmane & Lauka, 2024; Fang et al., 2022). This method of aquaculture, typically conducted in enclosed ocean areas or artificial saltwater structures like tanks and ponds, offers substantial potential for economic growth and sustainability in coastal communities. Unlike other sub-sectors of aquaculture, mariculture is

experiencing rapid growth, reflecting its importance in meeting the increasing global demand for marine fish (Joesidawati & Nurrudin, 2021).

Mariculture projects are crucial for fisherfolks since they provide a vital means of generating revenue and sustaining their livelihoods (Ramesh et al., 2022). Mariculture plays a crucial role in the economic sustenance of fishing villages, providing a significant source of income for many individuals. Mariculture has the capacity to satisfy the growing need for marine fish in the future (Joesidawati & Nurrudin, 2021). In addition, mariculture initiatives can assist in the identification of appropriate fishing spots by mapping numerous factors along the coastline (Campbell & Pauly, 2013).

The ridge-to-reef approach, a comprehensive ecological management strategy, supports mariculture by integrating the management of terrestrial and coastal resources. It considers the impacts of land-based activities on marine ecosystems and emphasizes collaboration among stakeholders, including local communities, governmental organizations, and conservation entities (Comeros-Raynal et al., 2019; Delevaux et al., 2018; Carlson et al., 2019; Wilmot et al., 2022). This approach is designed to enhance the income of fisherfolk and sustain biodiversity and livelihoods by promoting greater access to diverse livelihood opportunities. Successful implementations of ridge-to-reef schemes, such as those in Fiji and American Samoa, demonstrate positive outcomes for both land and sea environments, reflecting a holistic view of ecosystem health and community well-being (Fache & Pauwels, 2022).

Despite its potential benefits, mariculture projects often face challenges, particularly concerning local fisherfolk. In the case of the Mariculture Park project in Sagñay, Camarines Sur, intended to boost fish productivity and provide alternative income sources through controlled marine species cultivation, there are mixed reactions from the community. Issues such as the

displacement of local fishermen, loss of traditional livelihoods, water quality concerns, ecosystem degradation, and biodiversity loss have sparked debate among residents. Adapting to mariculture from traditional fishing practices poses significant challenges for these communities.

Given the significant role of mariculture within the ridge-to-reef framework, it is crucial to understand the voices of fisherfolks towards mariculture projects. This study aims to evaluate the responses of the fisherfolk in Sagñay, Camarines Sur, to the Mariculture Park project. Focusing on the local fisherfolk who rely on traditional fishing methods for their daily sustenance in the research seeks to identify the key issues and challenges they face, providing insights into how mariculture can be better integrated into their livelihoods while addressing their concerns and preserving the ecological balance.

### **Theoretical basis**

The theoretical basis for this study is rooted in the Triple Bottom Line (TBL) theory, which posits that sustainable development requires balancing economic, environmental, and social objectives to achieve long-term viability. Developed by John Elkington, TBL emphasizes that businesses and initiatives should not only pursue financial success but also address environmental stewardship and social responsibility (Elkington, 2006). This approach is instrumental in assessing the mariculture project's impact on the fisherfolk community, as it provides a comprehensive framework for evaluating how economic benefits, environmental sustainability, and social cohesion can be harmonized to promote overall well-being and resilience within the community. By integrating these three dimensions, the TBL theory offers a holistic perspective on ensuring that development efforts are sustainable and equitable.

## Methods

The study employed a qualitative case study research design to attain its objectives. Purposeful sampling was used in determining the participants in the study. A total of eight respondents or participants were involved in the study. These comprised the fisherfolks of the identified coastal barangays (Patitinan, Turague, Sibaguan and Bongalon) of the municipality where the mariculture project is situated and can be directly affected by the project. Table 1 represents the participants of the study. The average length of the recorded interview session was 15 minutes. All interview questions coupled with guide questions were pre-tested and practiced with assigned partners before the actual conduct of the interview. The interview involved asking the respondents about their perceptions and reactions to the mariculture project. Additionally, the interviewing process was conducted face-to-face, and voice recorded in Bicol language to allow the participants to express themselves freely. Probing, follow-up and clarification techniques were employed. Then, the voice recordings were transcribed verbatim, coded and generated themes. In order to ensure confidentiality, participant number were used in analyzing and reporting data.

**Table 1. Participants of the study**

<b>Participant Number</b>	<b>Birth Assign Sex</b>	<b>Educational Attainment</b>	<b>Interview Length</b>
1	Male	Secondary Level	00:15:04
2	Male	Secondary Level	00:09:43
3	Male	Secondary Level	00:11:22
4	Male	Primary Level	00:09:45
5	Male	Tertiary Level	00:07:00
6	Male	Secondary Level	00:07:11

7	Male	Secondary Level	00:11:31
8	Male	Secondary Level	00:12:55

Reflexive thematic analysis (RTA) by Braun and Clarke (2022) was the method used to analyze the data collected during the conduct of the study. RTA is an approach to analyzing qualitative data to answer broad or narrow research questions about people's experiences, views perceptions, and representations of a given phenomenon. This gives the researchers reflexive and thoughtful engagement with their data as well as in the analytic process. This employs flexible and coding process, involves development of themes that may change during the analytical process which may lead to the familiarization of data. This data familiarization may eventually lead to the identification of previously not recognized pattern of meaning. A synthesis matrix was used to help in the coding and generation of themes.

## Results

The result of the study is divided into two parts: the profile and social dynamics of fisherfolk and their voices towards the mariculture project.

### **Profile and social dynamics of the fisherfolk**

Based on the observation and interview conducted, residents of these barangays are characterized by a mixture of young and old though the younger generation dominates the population reflecting a vibrant and energetic community. They have a variety of occupations like having small land to till, owning a sari-sari store, or backyard piggery, some are tricycle drivers and others are laborers, yet the majority of the residents depend on fishing as their main source of income.

The study also revealed that fishing is a predominantly male occupation. In traditional coastal communities like the locale of the study, men typically take on the role of primary breadwinners, engaging directly in fishing activities, while women often contribute through supportive roles, such as managing household affairs or participating in supplementary income-generating activities.

Moreover, the results of the interview depict that the majority of the residents have finished elementary level education while others reached secondary education and only a handful of them had a taste of tertiary education. However, children of these families were sent to school that reached into high school and still are progressing in their quest for a good education. As one of the participants said, *“Tighinguha ming mapaeskwela an mga aki mi, nganing dae na makaarog samuya na tios ta nakadepende lang sa pag-sira, pag may bagyo mayong dakop gutom kami”* (We strive to send our children to school so that they won't experience the hardships we went through, because when there's a typhoon, we are left vulnerable, and we end up hungry).

Still these people were at peace with their environment as shown by the seasoned fisherfolks that still shun smiles on their faces as they talk on their journey and experiences in fishing. They possessed harmonious relationship within the family and the community. They are able to adapt to the instability of fishing that characterizes the resilient people's everyday lives. One of the respondents stated:

*“An buhay ninda garo man sanang mga alon sa dagat kun sain an kita ninda pabag-o bag-o basi sa dakop sa aru-aldaw, presyuhan sa saod, and pag-gamit nin manlain-lain paagi sa pagdakop nin sira para mabuhay”* (They have a lifestyle that is closely linked to the tides - like the tides, their income varies according to the day's catch, the state of the market, and the changing techniques they use to make a living.)

These characteristics reflect resiliency and adaptability of fisherfolks among and within their family in combating the challenges of life and having a decent life by earning it through honesty, handwork and love indicating their vision of providing quality life to their family and to contribute to the progress in the community.

Whereas, based on the interview, the social dynamics of the fishermen in Sagñay, Camarines Sur, Philippines, highlight the significance of community associations as the cornerstone of their cooperative endeavors. In the interview, the interviewee Participant 2 mentions their involvement in associations like a local livelihood association. The association's bylaws required regular meetings, which provided a place for talks relevant to the common interests of the community. This emphasizes how important community ties and group decision-making are to the fishing community.

However, amidst the historical backdrop of community collaboration, there is a discernible shift towards individualized pursuits in recent times. Participant 2 notes, "*Kaito magayon ang kuyan, kundi ngunyan nag individualized na, ang iba nag kanya-kanya ng paghahanap buhay.*" (Before, the community was flourishing, but now, it has become more individualized, with each person pursuing their own livelihood.) This change indicates that a growing number of fishermen have sought independent livelihood methods, perhaps as a result of shifting personal or economic circumstances. Such individualization can affect the community's long-standing cooperative culture and result in a more dispersed approach to livelihood operations.

Despite this trend, there remains a strong acknowledgment of the necessity of collaboration, particularly when considering mariculture projects. Participant 2 mentions their engagement in meetings, indicating a continued willingness to work collectively. This meeting implies a blend of individual initiatives and shared efforts, illustrating the adaptability of the

fisherfolk to evolving economic and environmental conditions. The fisherfolk recognize the interdependence of their community, with aspirations to participate in mariculture projects contingent on external support and collaboration. This complex interplay between individual pursuits and community cohesion reveals the nuanced social dynamics within the fisherfolk community of Sagñay.

The fisherfolk community's social dynamics, as revealed through the interviews, depict a complex interplay of cooperation, shared challenges, and varying perspectives on the Mariculture project. One common topic is the sense of solidarity among neighbors, characterized by mutual assistance and support. Participant 5 emphasizes this sense of solidarity: "*Magayon man garay kan lambang saro ang pag-iribahan, magayon man. Pabigayan man ang lambang saro,*" (It still wonderful when everyone supports and uplifts one another. Helping each other out is truly commendable.) highlighting the collaborative efforts within the community.

The call for cooperative efforts is evident, with Participant 8 expressing willingness to engage in a cooperative (Kooperatiba): "*Sa Kooperatiba, magayon iyan doy. Willing na willing ako diyan, dahil sa kooperatiba na an maa magkakaburunyag diyan ang lambang parasira diyan.*" (In a cooperative, that's indeed good. I am very willing to participate because in a cooperative, there is a chance to collectively address the issues there.) This suggests that a collective and organized approach, through a cooperative, could address shared concerns and facilitate a more inclusive and equitable response to the challenges posed by the Mariculture project.

The social dynamics within the fisherfolk community underscore the importance of community engagement, equitable resource management, and collaborative decision-making to ensure the sustainable development of the Mariculture project.



## **Voices of fisherfolks on mariculture project**

There are three themes inferred from the perceptions and responses of the participants to the Mariculture operations through face-to-face interviews conducted: inclusive economic aspirations, echoes of environmental concern, and sense of communal bond and social exchange.

### ***Inclusive economic aspirations***

The voices of fisherfolks reveal a diverse range of economic aspirations related to the Mariculture project, alongside concerns about the equitable distribution of these benefits. Participants expressed distinct hopes for financial improvement, highlighting the varying perspectives within the community and the critical importance of fair mechanisms to ensure that the advantages of mariculture are shared by all community members.

Participant 3 emphasized the tangible benefits for those directly involved in the mariculture project, stating,

*“May kapakinabangan man, lalo na su mga taga doon, yung mga nagtatrabaho talaga, lalong-lalo na su mga bulinaw na daa nag-aani na, nasasararo.” (There are benefits, especially for the locals, particularly those who really work, especially the ones catching 'bulinaw' (a type of small fish), who are now harvesting together.)*

Similarly, Participant 2 acknowledged the positive potential of mariculture if accompanied by proper information dissemination, while Participants 6 and 8 expressed contentment and confidence in the project's positive impact. Participant 8 mentioned, *"Ining satuyang Mariculture dae nin problema ta diit sana ang area na kuyanan, dakulang tabang ini saton parasira..." (This mariculture has no problem because it covers a small area; it will greatly help the fisherfolks.)*

While these perspectives highlight the economic optimism among certain community members, concerns about unequal benefits distribution also emerged. Participant 3 underscored the importance of equal opportunities for livelihood:

*"Kun sana gabos mataan pa din nin pantay-pantay na pagkakataon sa magkua nin pangkabuhayan hali sa dagat magayon man kuta." (If only everyone could have equal opportunities to earn a living from the sea, that would be good.)*

Participants 6 and 7 shed light on concerns about unequal benefits distribution and the role of external factors. Participant 6 observed, *"Magayon kundi ang masasabi ko diyan, ang nakikinabang man sana su kuyan inin may sadiri kan bangusan naan." (It's good, but what I can say about that is, those who benefit are the ones with their own milkfish production.)* Participant 7 noted,

*"Sinda man ang nangingabang kaan ma'am, pirang beses na po nagkaigwang arog kaiyan na tinao sa tawo, sain daw ngaya an pag kung pira ngaya, napabakalan kaan ma'am, gamiton nindong puhunan, su sobra o kaya saindo na, baranga-bangaon kan grupo." (They are the ones who benefited, ma'am. Several times they provided things like that to people, saying that this is how it is, they'll give it to you, use it as your capital, but in the end, whatever is left, whether it's excess or for you, it all goes to the group.)*

The theme of inclusive economic aspirations underscores the varied perspectives among Sagñay fisherfolks regarding the R2R Mariculture project's economic impact. The expressed hopes for financial improvement and equal opportunities for livelihood underscore the importance of recognizing the diverse needs and expectations within the community. Participant 3's emphasis on tangible benefits for those directly involved highlights the potential positive impact on livelihoods.

However, Participant 2's comment on the need for proper information dissemination and the concerns about unequal distribution raised by Participants 6 and 7 suggest critical aspects that need addressing. Ensuring that all community members are well-informed and that benefits are fairly distributed will be crucial for fostering a sense of shared prosperity and community engagement. Striking a balance between diverse aspirations and uniform access to information will be essential in promoting inclusive participation and equitable economic outcomes.

### ***Echoes of environmental concerns***

A prevalent theme emerges as participants voice environmental apprehensions and conservation considerations regarding the Mariculture project. The participants express shared concerns about potential ecological repercussions, emphasizing a collective commitment to preserving their natural surroundings. The theme of echoes of environmental concerns encapsulates these shared worries and underscores the participants' shared responsibility for safeguarding the marine environment. Participant 8 highlights worries about fish cages affecting coral reefs: "*Kung hihilingon iyan ang lambang kanto kan fish cages, may pighuhulog sinda diyan nin mga ano, buntugon na pwede ito makaraot sa mga coral reefs.*" (If they throw something near the corner of the fish cages, they might drop something there that could harm the coral reefs.)

Additionally, Participant 1 provides insights into waste management concerns: "*Igdi sa mga seashore kan kadagatan igdi samo, mayong problema diyan ta pig-clean up drive kaitong barangay sa gilid. Pero sa tahaw nin dagat, dakul na mga basura hale sa mga feeds, ta bako gabos na feeds yaon kinakaon, kaya natutunaw ini asin nagpapahiling sa ilarom kan dagat.*" (There's no problem on the seashore because there's a barangay clean-up drive. But on the middle sea, there are so many wastes from feeds, as not all feeds are consumed, so it is rotten and settles at the bottom of the sea.)

Participant 2 and 8 highlight the clash between traditional fishing methods and mariculture practices. According to Participant 2 “*Kundi su mga taga duman na parabangwit man, dae na makabangwit, makapangki ta naulangan na kan mga cage na ito.*” (The problem is the residents who catch fish through 'banwit or pangki' as it is blocked by cages.)

*Participant 5 further emphasizes the potential negative impact on small-scale fishermen: “Dakulaon na magiging problema kan mga fisherfolks, lalo na igdi sa Brgy. Bongalon, dawa mga Sibaguan mag diyan sa inutan naan...”* (It will be a big problem for the fisherfolks, especially in Brgy. Bongalon, even those from Sibaguan who fish in that area...)

The theme of echoes of environmental concerns highlights the community's shared commitment to preserving their natural surroundings. Participants' worries about potential ecological repercussions underscore their role as stewards of the marine environment. The emphasis on coral reef protection and waste management suggests a strong environmental awareness among the fisherfolks. While expressing concerns, the participants simultaneously recognize the importance of responsible practices. Balancing economic development with environmental conservation will be essential, emphasizing the need for sustainable mariculture practices and ongoing community education initiatives to foster a harmonious coexistence between economic growth and environmental stewardship.

### ***Sense of communal bond and social exchange***

The interviews convey a sense of community solidarity and mutual assistance, emphasizing collaborative efforts in response to challenges. The theme of communal bond and social exchange underscores the participants' belief in collective well-being and social support networks. This theme highlights the positive aspects of communal responses to challenges arising from the Mariculture project.

Participant 3 showcased the community's unity, despite the challenges posed by the mariculture project:

“Ang pagkasararu igdi, pirme ng dati sararo. Kundi pag-abot kan oras na uminabot samuya iyan, napasuruhay na kami ta, puro ngani kuntintwaran.” (Solidarity is present before the implementation of mariculture, now we are divided since we have to consider each other.)

Participant 4 also emphasized mutual support,

"Akuon nalang ta dae man puwedeng punduhon, bako man kitang official na tawo, ordinaryo lang kita. Kung anong niralaag, mayo na kita maginibo kaan. Sinda nagpupuon, dawa anong taram ta, ano man ang saloobin ta, mayo man kita magiginibo ta gobyerno ang may gusto." (We have to accept it because we are just ordinary individuals. Whatever is decided, we should not question it; we're not government officials.)

Another aspect highlighted in the study is the potential for collaborative investment and benefits within the fisherfolks community. The voices of fisherfolks also emphasizes the importance of fostering a sense of community ownership, shared responsibility, and mutual benefit in the context of mariculture initiatives. Participants 5 and 7 illustrate the potential benefits and challenges associated with collaborative efforts in mariculture projects.

Participant 5 said, “Mas magayon kun an inot na makapital siring kan pag-gamit nin sadiring bangka kaitong yaon na igdi nani sinda man an mabaranga kan kita dae na mapaduman sa iba pa.” (It would be better if the capital is internal, like using our own boats here, where we are the ones benefiting from the income and it doesn't go to others.)

Participant 7 expressed frustration over exploitation, "Haputon mo iyan, pirang beses kami nag-ataman kan bangus hali sa mga iyan para sa mga fish cage. Kapitalan ko ngaya libreng similya po ma'am pati pambahog, garu ginamit ka lang pang-ataman pero sa oras na kan harvest, mayo na, mayo ka man makua. Kaya makaraya, dae naman pati nagturubod ang tao ma'am ta mayo na tiwala sainda." (So many times have we ventured into raising milkfish from those for the fish cage. They gave me capital in the form of free fingerlings and feeds, telling me to just use it for cultivation. But during harvest time, there's nothing left, and you won't gain anything. So, we're just being used by them, ma'am, and people have lost trust in them.)

Participant 1 also noted, "Itong mga labor igdi na kuta kinua, para makatabang sainda. Ang problema su mga kinua pang tawo hali pa sa ibang lugar. Tapos mayo nin consultation an sa grupo igdi sa katipla or sa rotary, mayo man." (The laborers here for the mariculture were hired to help them. The problem is the people they hired are not from our place. And there was no consultation with the group here in Katipla or in the rotary; none at all.)

The theme of communal bond and social exchange highlights the community's strength in solidarity and mutual assistance, while also pointing to the potential for a community-driven approach to mariculture initiatives. The participants' emphasis on collaborative efforts and shared support networks portrays a resilient community response to challenges. However, the concerns raised regarding potential exploitation and external interference underscore the need for clear frameworks that protect the community's interests. Encouraging collaborative efforts while safeguarding against exploitation will be crucial for ensuring the sustainability and long-term success of mariculture initiatives within the community.

## Discussions

The Triple Bottom Line (TBL) theory, which emphasizes the simultaneous pursuit of economic, environmental, and social objectives (Elkington, 2006), serves as a robust foundation for understanding the dynamics observed in the fisherfolk communities of Sagñay, Camarines Sur. Research indicates that TBL can enhance corporate sustainability by integrating these three dimensions into strategic decision-making processes, leading to improved stakeholder engagement and long-term viability (Sabino et al., 2024). The study's findings, particularly through the themes of inclusive economic aspirations, echoes of environmental concern, and sense of communal bond and social exchange, encapsulate the core principles of TBL, offering insights into the delicate balance required for sustainable development in mariculture initiatives.

### **Inclusive economic aspirations: economic pillar**

The theme of inclusive economic aspirations represents the economic dimension of TBL, highlighting the diverse range of financial hopes and concerns within the fisherfolk community. The study reveals that while some participants are optimistic about the potential financial benefits of the mariculture project, others are wary of the unequal distribution of these benefits. This dichotomy underscores the importance of ensuring that economic development efforts, such as mariculture, are inclusive and equitable, providing opportunities for all community members, not just a select few.

The results emphasize that striking a balance between diverse aspirations and uniform access to information is essential to promoting inclusive participation and equitable economic outcomes. For the mariculture project to truly contribute to the economic pillar of TBL, mechanisms must be established to ensure that all stakeholders have access to the necessary information and resources. This would foster a more equitable distribution of benefits, thereby

supporting the community's overall economic resilience.

Coastal communities heavily rely on common pool resources (CPRs) for their livelihoods, which raises the question of equitable benefit distribution. Research indicates that effective management of these resources is crucial for ensuring that all community members can derive benefits. For instance, Moreno-Sánchez and Maldonado (2010) emphasize the importance of participatory governance in managing CPRs, which exhibits the best results in terms of resource sustainability and reduction in extraction in marine protected areas. Tsiouvalas and Evans (2023) further highlight that inclusive decision-making processes can lead to more sustainable outcomes, ensuring that marginalized groups also benefit from resource utilization. Moreover, Fitria et al. (2024) discuss the role of local knowledge in resource management, suggesting that integrating traditional practices can improve the sustainability of CPRs and ensure that benefits are shared among all stakeholders.

### **Echoes of environmental concerns: environmental pillar**

The theme of echoes of environmental concern reflects the environmental pillar of TBL, where the community's shared responsibility for environmental stewardship is evident. Fisherfolk expressed concerns about the potential negative impact of mariculture on their natural surroundings, particularly regarding coral reef degradation and waste management. These concerns highlight the necessity of integrating sustainable practices into mariculture operations to mitigate adverse environmental impacts (Laoyza-Aguilar et al., 2023; Lounas et al., 2020; Neori et al., 2004).

Balancing economic development with environmental conservation is critical, as the study suggests. This balance emphasizes the need for ongoing community education initiatives to promote sustainable mariculture practices that do not compromise the health of the marine



ecosystem (Parappurathu et al., 2023). Aligning mariculture practices with the environmental pillar of TBL in the community can ensure that their economic activities do not come at the cost of environmental degradation, thereby supporting long-term sustainability (Taylor & Kluger, 2018; Troell et al., 2003).

### **Sense of communal bond and social exchange: social pillar**

The theme of sense of communal bond and social exchange embodies the social pillar of TBL, highlighting the importance of community solidarity, mutual assistance, and collective well-being. The study reveals that while traditional cooperative practices in the community are being challenged by increasing individualization, there remains a strong recognition of the value of collective efforts, particularly in the context of mariculture. Research indicates that individualistic tendencies can undermine collective action and social cohesion, leading to a decline in community engagement and cooperative behaviors (Matschoss et al., 2021). For instance, Foster et al. (2023) emphasize that as individuals prioritize personal achievements, the shared values that underpin cooperative practices weaken, making it difficult to mobilize community resources effectively. Fisher and Baines (2013) note that while some individuals still engage in cooperative practices, the overall trend towards individualization poses a significant threat to the sustainability of these traditional practices. Thus, the interplay between individualization and community cooperation is complex, necessitating strategies to reinvigorate collective action.

The importance of safeguarding against exploitation within collaborative efforts is emphasized, as ensuring the sustainability and long-term success of mariculture initiatives requires protecting the community's social fabric. This involves creating clear frameworks that promote fairness, prevent exploitation, and foster trust among community members. Strengthening the social pillar of TBL in the community can build a resilient and cohesive foundation that supports

sustainable development.

## **Conclusions and Recommendations**

The study sought to capture the voices of fisherfolk in Sagñay, Camarines Sur, Philippines, regarding the mariculture project. The findings revealed a community characterized by resilience, adaptability, and strong social bonds, where fishing remains a predominantly male occupation. Despite economic challenges, these fisherfolk demonstrate a deep commitment to their families and community, striving to provide better opportunities for their children. However, a notable shift towards individualized pursuits has emerged, challenging the traditional cooperative culture that once unified the community. The fisherfolk's perspectives on the mariculture project reflect a complex interplay of individual aspirations, community cohesion, and concerns about equitable benefit distribution.

The voices of the fisherfolk highlighted three major themes: inclusive economic aspirations, environmental concerns, and a sense of communal bond and social exchange. Many participants expressed optimism about the economic potential of the mariculture project yet concerns about unequal benefits distribution and the impact on traditional livelihoods were also prevalent. Environmental apprehensions centered on the potential harm to coral reefs and waste management issues, underscoring the community's strong environmental awareness and stewardship. Additionally, the sense of communal solidarity remained a key feature, despite the challenges posed by the mariculture project, with many participants emphasizing the importance of collective efforts and shared responsibility.

The study underscores the importance of inclusive, equitable, and sustainable approaches to community development projects like mariculture. The fisherfolk's voices reflect a deep connection to their environment and a strong desire for economic opportunities that benefit all members of the community. Addressing concerns about benefit distribution, environmental impact, and maintaining social cohesion will be crucial for the successful implementation of the mariculture project. Ensuring that all stakeholders are engaged, informed, and fairly compensated can foster a more resilient, prosperous, and harmonious community, aligning with the principles of sustainable development.

The study recommends that all community members be granted equal access to information and opportunities to foster inclusive participation and ensure that the economic benefits of mariculture are equitably distributed, thereby supporting the community's overall economic well-being. Additionally, the findings emphasize the importance of adopting sustainable mariculture practices that preserve environmental integrity, which is vital for the long-term success of the mariculture project and the protection of the community's natural resources. Establishing clear guidelines and equitable practices is crucial to ensuring that the benefits of mariculture are fairly shared, thereby strengthening, rather than weakening, the community's social bonds.

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