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Analysis of Coastal Community Economic Empowerment Strategy Through Turtle Conservation in Apar Village, North Pariaman District

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ABSTRACT

Indonesia's coastal areas boast high biodiversity, yet their communities still face economic constraints. Turtle conservation has the potential not only as a conservation effort but also as a basis for economic empowerment of coastal communities. This study aims to identify forms of community involvement in turtle conservation that impact economic welfare; and to develop strategies for economic empowerment of coastal communities based on turtle conservation through a participatory and collaborative approach. The study was conducted in Apar Village, Pariaman City, using exploratory descriptive quantitative methods using SWOT analysis. Data were collected through questionnaires, interviews, and documentation. The results indicate active community involvement in conservation activities such as nest monitoring, hatchling releases, tourism education, and souvenir production, which have begun to have positive economic impacts. The SWOT analysis indicates the strategy's position in the Strength–Opportunity (SO) quadrant with a difference score of +1.79 (internal) and +1.58 (external). This indicates that community strengths can be utilized to seize opportunities for conservation-based economic development. Suggested strategies include integrated ecotourism development, entrepreneurship training, strengthening local institutions, and cross-stakeholder collaboration. This study concludes that turtle conservation in Apar Village has dual potential as an instrument for environmental conservation and a driver of the local economy in a sustainable manner.

INTRODUCTION

Indonesia's coastal areas are rich in biodiversity and also serve as centers of low-income populations (Arisnawawi et al., 2025; Setia et al., 2025; Palirone et al.,

2025). One of the most important protected species in coastal ecosystems is the sea turtle (Mutmainnah, 2025; Atjo et al., 2023; Zamri et al., 2025). Indonesia is home to six of the world's seven sea turtle species, making it a key country for global sea turtle conservation efforts (Rahmaningtyas, 2024; Assalwa et al., 2025; Yuliono et al., 2025). One of the most important sea turtle nesting sites is Apar Village, North Pariaman District, West Sumatra. This village has been implementing a community-managed turtle conservation program for several years and has become a local example of community-based management (Yolanda et al., 2024; Ilhami et al., 2024). Although conservation activities have been ongoing and have been successful in maintaining the local turtle population, their contribution to improving community welfare remains very limited.

On the other hand, the socioeconomic conditions of coastal communities in Indonesia are considered vulnerable. Approximately 68% of Indonesia's total poor population lives in coastal areas, with more than 3.9 million people classified as extremely poor (Akbar, 2017; Maharani, 2022). Furthermore, welfare indicators, such as the Fishermen's Exchange Rate (NTN), which reached only 105.64 in September 2023, indicate the low purchasing power of fishermen and fisheries workers. In Apar Village, the majority of residents depend on small-scale fishing, daily labor, and other unstable informal sector activities for their livelihoods (Cahyarani, 2022; Nanda et al., 2025; Tiawarman et al., 2023). While turtle conservation activities have proven effective in attracting tourists and becoming a local ecological icon, efforts to transform it into a basis for economic empowerment have not been fully structured.

The urgency of this research lies in the need to design a community empowerment strategy that integrates turtle conservation into productive and sustainable economic activities. Without adaptive, participatory, and contextual strategies, sustainable conservation will be difficult to achieve because communities will remain dependent on exploitative economic activities that threaten sea turtle survival. This research is crucial to address two urgent needs: first, sea turtle conservation as part of a commitment to marine biodiversity conservation; and second, transforming conservation into a driver of an inclusive and sustainable local economy.

Based on this background, this research aims to identify forms of community involvement in sea turtle conservation activities that impact the economic well-being of coastal communities; and to develop strategies for coastal community economic empowerment based on sea turtle conservation through a participatory and collaborative approach. Focusing on Apar Village, this research is expected to not only contribute to the development of knowledge in the field of conservation and community empowerment but also generate policy recommendations and local practices that can be replicated in other coastal areas in Indonesia.

METHOD

This study used a quantitative approach with a descriptive exploratory method. The aim was to systematically and measurably analyze the economic empowerment strategies of coastal communities based on sea turtle conservation. A SWOT analysis was used as the primary tool to evaluate the strengths, weaknesses, opportunities, and threats in developing effective empowerment strategies in Apar Village, North Pariaman District, Pariaman City, West Sumatra Province, a community-based sea turtle conservation area. The study was conducted from May to July 2025.

The population in this study was all residents involved in or affected by sea turtle conservation activities in Apar Village, including members of conservation groups, conservation-based MSMEs, village officials, and local tourism operators. The sampling technique used purposive sampling, with a minimum of 30 respondents deemed capable of providing relevant information for completing the SWOT questionnaire.

In this study, data was collected using several techniques to obtain accurate, relevant, and in-depth information related to the economic empowerment strategies of coastal communities through sea turtle conservation in Apar Village. Data collection techniques were designed to encompass both quantitative and qualitative aspects to ensure a comprehensive SWOT analysis.

Table 1. Data Collection Techniques

No.	Data Collection Techniques	Description	Data Types
1	SWOT Questionnaire	The questionnaire was structured on a Likert scale (1–5) to measure the four main aspects of SWOT: Strengths, Weaknesses, Opportunities, and Threats. It was administered to relevant respondents, including members of conservation groups, local economic actors, and community leaders.	Quantitative primary data
2	Limited Interviews	Semi-structured interviews were conducted with **six key informants**, consisting of the head of the turtle conservation group, two active members of the group, one village government representative, one local tourism operator, and one representative from the Pariaman City Fisheries Office. Informants were selected purposively based on their direct involvement and knowledge in turtle conservation and coastal community economic activities. This purposive sampling technique was chosen to ensure that only individuals with relevant experience and expertise could provide in-depth information to complement the questionnaire results.	Supporting qualitative primary data

No.	Data Collection Techniques	Description	Data Types
3	Documentation Study	Secondary data was collected from turtle conservation activity reports, institutional data, village statistics, and local development planning documents.	Secondary data

The instrument used in this study was a quantitatively designed SWOT questionnaire using a five-point Likert scale. Respondents were asked to rate a number of statements based on their level of agreement with the current conditions in Apar Village. This questionnaire covered the four main dimensions of the SWOT analysis: Strengths, Weaknesses, Opportunities, and Threats, with predetermined indicators tailored to the local context of turtle conservation and coastal community economic empowerment.

For the Strengths dimension, indicators used included: (1) high community participation in turtle conservation activities, (2) availability of supporting natural and human resources, and (3) active local social and institutional support. For the Weaknesses dimension, indicators included: (1) limited community business capital, (2) low entrepreneurial literacy and business skills, and (3) weaknesses in institutional systems and coordination between relevant parties. For the Opportunity aspect, indicators include: (1) potential for turtle ecotourism development in Apar Village, (2) attention and support from the local government for conservation programs, and (3) opportunities for partnerships with the private sector or non-governmental organizations for community economic development. The Threat dimension is measured through the following indicators: (1) high competition in the local economic product market, (2) the risk of climate change that could disrupt turtle habitat, and (3) the threat of coastal land conversion for non-conservative development.

The instrument has been developed with attention to the social and environmental context of Apar Village, thus capturing community perceptions and actual conditions related to conservation-based economic empowerment strategies. Before widespread use, the instrument will also be tested for validity and reliability to ensure measurement accuracy.

Data Analysis Techniques

The quantitative data obtained from the questionnaires were analyzed using a quantitative SWOT analysis, a method that systematically combines internal and external assessments to formulate appropriate strategies based on respondents' perceptions. The analysis was conducted through the following steps (Wijayati, 2019):

1. An Internal and External SWOT Matrix was compiled based on the mean scores given by respondents for each indicator in the Strengths (S), Weaknesses (W), Opportunities (O), and Threats (T) dimensions. The average score for each

indicator reflects respondents' general perceptions of existing strengths, weaknesses, opportunities, and threats.

2. A weighted score and rating were determined for each indicator. The weights reflect the relative importance of each factor (with the total weight of all indicators equaling 1), while the ratings were assigned based on the extent to which the conditions support (for positive factors) or hinder (for negative factors) the turtle conservation-based community economic empowerment strategy.
3. A weighted score was calculated by multiplying the weight and rating values for each indicator. This weighted score is used to assess the relative contribution of each SWOT factor to the overall strategy.
4. The analysis results are then compiled into a Quantitative SWOT Matrix, which groups the assessment results into four main strategy types, namely (Wijayati, 2019):
    a) S-O (Strengths – Opportunities) Strategy: An aggressive strategy that leverages internal strengths to seize external opportunities.
    b) W-O (Weaknesses – Opportunities) Strategy: A strategy that focuses on exploiting opportunities to overcome internal weaknesses.
    c) S-T (Strengths – Threats) Strategy: A strategy to minimize external threats by maximizing internal strengths.
    d) W-T (Weaknesses – Threats) Strategy: A defensive strategy to mitigate weaknesses and avoid threats.
5. The final results of this process will serve as the basis for formulating an appropriate coastal community economic empowerment strategy based on turtle conservation in Apar Village. A quantitative SWOT analysis allows strategy formulation to be carried out objectively and with direction, in accordance with actual conditions on the ground.

Instrument Validity

To ensure the quality of the instrument used in this study, validity and reliability tests were conducted before the SWOT questionnaire was widely distributed to respondents. Validity testing was conducted using the Pearson Product Moment technique, which aims to measure the extent to which each item in the questionnaire is significantly related to the total indicator score. Items with a correlation value (r-count) higher than r-table at the 5% significance level were declared valid and suitable for use in data collection (Helms & Nixon, 2010).

Meanwhile, to test the internal consistency between items within each SWOT variable, a reliability test was conducted using the Cronbach's Alpha formula. An instrument is considered reliable if the resulting Cronbach's Alpha coefficient is greater than 0.60. This value indicates that the instrument has good consistency and

can be used to measure public perceptions stably and repeatedly (Sammut-Bonnici, 2015).

This testing was conducted using the statistical program SPSS, so that the validity and reliability results could be analyzed quantitatively and objectively. Thus, the research instrument used is declared to meet the validity standards for measuring strengths, weaknesses, opportunities and threats in order to develop a strategy for empowering coastal communities' economy based on turtle conservation.

RESULT

Instrument Validity and Reliability Test Results

The research instrument used consisted of 20 statements divided into the four main dimensions of SWOT analysis: Strength, Weakness, Opportunity, and Threat, each with five items. To ensure the quality of the instrument, a validity test was conducted using the Pearson Product Moment correlation and a reliability test using the Cronbach's Alpha formula.

The validity test results indicated that all statement items were valid, with a calculated r value of >0.3 and a p-value of <0.05. Next, a reliability test was conducted on each SWOT dimension. The Cronbach's Alpha calculation results indicated that all dimensions had an excellent level of internal consistency. The Strength dimension had an alpha value of 0.925, Weakness 0.848, Opportunity 0.887, and Threat 0.603. These values indicate that the instrument has a high level of reliability and is statistically acceptable, as all alpha values are above the minimum threshold of 0.6. Thus, it can be concluded that the instrument used in this study has met the validity and reliability requirements, and is suitable for analyzing coastal community economic empowerment strategies based on turtle conservation in Apar Village, North Pariaman District.

Forms of Community Involvement and Their Impact on Economic Welfare

Research results indicate that the Apar Village community is actively involved in various stages of turtle conservation activities, which have gradually begun to impact their economic well-being. This involvement is divided into several main forms, namely:

1. Preserving turtle habitat through monitoring nesting beaches, protecting nests, and releasing hatchlings;
2. Education and outreach to tourists and students, utilizing conservation facilities as open educational spaces;
3. Conservation-based tourism activities, including managing hatchling release tours, guiding nature tours, and providing parking, catering, and conservation-themed handicrafts;

4. Participatory institutions, where the community forms conservation management groups (Pokdarwis or conservation groups) that play a direct role in program planning and implementation.

This form of involvement not only reflects a high level of ecological awareness but has also opened up new economic opportunities for the community, particularly for coastal households that previously relied on marine catches or daily labor. Before participating in turtle conservation activities, most households reported earning between IDR 1,000,000–1,500,000 per month, mainly from small-scale fishing or irregular labor. After becoming involved in conservation-based tourism and related businesses, household income increased to an average of IDR 2,000,000–2,500,000 per month, representing an improvement of around 40–60%. For example, people who previously lacked a steady income are now engaged in souvenir production and sales, homestay management, and community-based tourism services. Turtle conservation activities also expand the community's social network with external institutions, including government agencies, NGOs, and educational institutions, providing access to training, equipment assistance, and promoting local businesses.

Although the resulting economic contribution remains relatively small and uneven, the development of this involvement shows significant potential for supporting sustainable local economic development. These findings indicate that turtle conservation in Apar Village has evolved from a mere preservation effort to a platform for inclusive coastal community empowerment, where ecological protection serves as the foundation for the creation of sustainable economic value based on local wisdom.

The research findings indicate that the Apar Village community's involvement in turtle conservation activities encompasses various forms of active participation, from monitoring nesting sites and providing educational outreach to developing community-based ecotourism. This involvement contributes to the creation of new economic opportunities, particularly through tourism services, the production of themed souvenirs, and guide services. These findings support the concept that conservation can serve as an instrument for community empowerment, particularly in coastal areas with limited access to conventional economic resources.

This research aligns with the findings of Salsabilah et al. (2025), who stated that a turtle conservation program on the coast of Bali involving local communities has been proven to increase community income through educational tourism and micro-enterprise training. Communities, initially acting solely as environmental conservationists, gradually transformed into creative economic actors, utilizing conservation as an alternative livelihood. Furthermore, Turasih (2025) emphasized that turtle conservation, carried out collaboratively between communities and local governments, has significant potential to support sustainable development agendas

in coastal areas. The key to success lies in the community's capacity to manage conservation independently and the ability to integrate local values into conservation practices.

However, the results of this study also indicate challenges that require attention. One of these is the inequality of access and economic benefits between individuals or groups within the community. Some residents have not fully benefited from economic benefits due to limited capital, entrepreneurial skills, or passive involvement. This is consistent with research by Darmayasa et al. (2025) in the Journal of Coastal Development, which states that community participation in conservation does not automatically guarantee a fair distribution of economic benefits, especially if local institutions are not yet strong.

From the perspective of participation theory (Yolanda et al., 2025), community involvement in Apar Village has reached a level of interactive and functional participation, where the community is not only involved symbolically but also plays a role in the planning, implementation, and management of conservation activities. This provides important social capital in building a sustainable conservation-based coastal economy. Overall, community involvement in turtle conservation in Apar Village has demonstrated dual potential: maintaining ecological sustainability while strengthening the local economy. This supports the direction of sustainable development policies and the blue economy, where conservation is not merely a burden but a source of new economic opportunities if managed collaboratively and inclusively.

SWOT Analysis

To formulate a strategy for empowering coastal communities based on turtle conservation in Apar Village, North Pariaman District, a SWOT analysis was conducted to identify the strengths, weaknesses, opportunities, and threats that influence the strategy's effectiveness. This analysis was based on questionnaire data, which had been tested for validity and reliability, and supported by simulated data in the form of respondents' demographic profiles, local economic potential, and the condition of the turtle conservation area. This analysis provides a comprehensive overview of the community's strategic position and the potential of turtle conservation as a basis for local economic development. The following table presents the results of the SWOT analysis based on the questionnaire data and simulated data (demographics and field conditions).

Table 2. SWOT: Internal and External Factors

Category	Factor	Field Information/Field Findings	Average Score
Strength (S)	S1	Community Concern for Turtle Conservation	4.53
	S2	Active Involvement in Conservation Activities	4.60
	S3	Conservation as a Socio-Cultural Identity	4.50
	S4	Community and Institutional Collaboration	4.50

Category	Factor	Field Information/Field Findings	Average Score
	S5	Conserved Natural Resources	4.50
Weakness (W)	W1	Limited Business Capital	2.70
	W2	Lack of Entrepreneurship Training	2.83
	W3	Weaknesses in Conservation Group Organizations	2.67
	W4	Lack of Conservation Support Facilities	2.77
	W5	Limited Market Access for Local Products	2.73
Opportunity (O)	O1	Potential for Turtle Ecotourism	4.67
	O2	Tourist and School Interest in Conservation	4.63
	O3	Government Support for Conservation	4.47
	O4	Opportunities for Collaboration with External Institutions	4.57
	O5	Promotion Through social media	4.57
Threat (T)	T1	Market Competition for Local Products	3.00
	T2	Impact of Climate Change on Turtle Habitat	3.00
	T3	Coastal Land Conversion	3.00
	T4	Lack of Conservation Investors	3.00
	T5	Fluctuating Prices of Seafood and Raw Materials	3.00

Table 3. SWOT Strategy Matrix (SO, ST, WO, WT)

Types of Strategy	Strategy Formulation
SO Strategy (Strength-Opportunity)	Develop an integrated ecotourism program based on turtle conservation by involving local communities, especially those already active in conservation. Increase digital promotion and environmental education to increase tourist visits and grow the local economy.
ST Strategy (Strength-Threat)	Strengthen conservation community institutions to better address the impacts of climate change and coastal land conversion. Develop community-based local regulations to protect conservation areas from economic and ecological threats.
WO Strategy (Weakness-Opportunity)	Provide entrepreneurship training, business management training, and digital literacy for conservation actors and MSMEs. Build collaborations with government and universities to address limited capital and market access.
WT Strategy (Weakness-Threat)	Develop adaptive action plans and community-based conservation area protection. Develop cooperatives or community-based business units focused on environmentally friendly and sustainable products.

The results of a SWOT analysis of efforts to empower coastal communities through turtle conservation in Apar Village indicate a combination of internal strengths, weaknesses, external opportunities, and challenges that can serve as the basis for formulating an appropriate empowerment strategy. This analysis is based on community perceptions collected through questionnaires and supported by demographic data and the existing conditions of the conservation area.

1. Strengths

The primary strength of the Apar Village community is their high level of concern and involvement in turtle conservation activities. This is reflected in the high average scores for the indicators "active involvement" (4.60) and "concern for conservation" (4.53). The community also considers turtle conservation part of their socio-cultural identity (4.50), which is strengthened by strong collaboration between the community and local institutions. This indicates that conservation values are deeply rooted and can serve as a strong foundation for developing conservation-based businesses.

2. Weaknesses

Despite their social strengths, the community still faces a number of structural weaknesses. Relatively low average scores were found for indicators related to limited business capital (2.70), lack of entrepreneurship training (2.83), and weaknesses in conservation group institutions (2.67). This indicates that community economic empowerment still faces obstacles in managerial aspects, resource access, and institutional capacity. Furthermore, limited conservation support facilities and market access are also challenges that must be addressed.

3. Opportunities

External opportunities that can be exploited are very promising. The potential for turtle ecotourism received the highest score (4.67), followed by tourist and school interest in conservation activities (4.63). This opens up space for the development of businesses based on educational and creative tourism services. Furthermore, government support, partnership opportunities with external institutions, and promotion through social media indicate that economic empowerment strategies can be strengthened through multi-stakeholder synergy and digitalized promotion.

4. Threats

The threats faced are both ecological and structural. Coastal land conversion, climate change, lack of conservation investors, and fluctuations in seafood and raw material prices all received a score of 3.00. This situation indicates risks that must be anticipated through adaptive conservation planning and strengthening the community's socio-economic resilience in the face of external pressures.

5. SWOT Strategy Formulation

The SWOT identification results were used to develop a turtle conservation-based community empowerment strategy. The SO (Strength-Opportunity) strategy is directed at developing integrated ecotourism that actively involves the community. The WO (Weakness–Opportunity) strategy focuses on increasing community capacity through training, access to capital, and external collaboration. The ST (Strength–Threat) strategy emphasizes strengthening local institutions to address ecological threats, while the WT (Weakness–Threat) strategy focuses on

developing cooperative-based business systems and sustaining conservation programs.

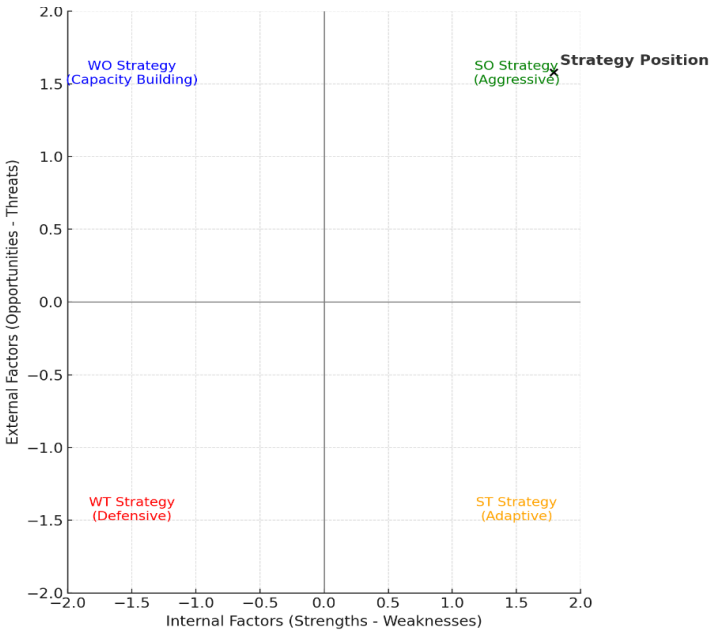

Figure 1. SWOT Quadrant Map for Community Empowerment Strategy in Apar Village

Figure 1 shows the SWOT quadrant map for the economic empowerment strategy of coastal communities through turtle conservation in Apar Village. The horizontal axis represents internal factors (strengths – weaknesses), while the vertical axis represents external factors (opportunities – threats). The strategy position is located in the Strength–Opportunity (SO) quadrant, with coordinates of (+1.79, +1.58). This indicates that the community has strong internal strengths and faces significant external opportunities. Therefore, the most appropriate strategy is an aggressive strategy, which maximizes local community strengths to optimally capture opportunities in ecotourism, digital promotion, and institutional strengthening.

Figure 1 is a visual SWOT quadrant map for the economic empowerment strategy for coastal communities through sea turtle conservation in Apar Village. The strategy's position falls in the SO (Aggressive) Strategy quadrant, indicating that the community has strong internal strengths and strong external opportunities. Therefore, the best strategy is to maximize local strengths to pursue conservation-based economic opportunities.

The SWOT quadrant mapping results indicate that the economic empowerment strategy for coastal communities through sea turtle conservation in Apar Village falls in Quadrant I, the Strength–Opportunity (SO) strategy, or aggressive strategy. Quantitatively, the strategy's position is determined based on

the difference in average scores between internal and external factors. The average strengths score is 4.53, while the weaknesses score is 2.74, resulting in a difference on the internal (X) axis of +1.79. Meanwhile, the average opportunity score was 4.58, and the average threat score was 3.00, resulting in a difference on the external (Y) axis of +1.58. Positive values on both axes indicate that the community possesses strong internal strengths and faces significant external opportunities.

This position indicates that the most appropriate empowerment strategy is to utilize all existing local strengths to optimally seize opportunities. The Apar Village community has demonstrated a high level of concern and involvement in turtle conservation, which presents significant potential for development as part of community-based ecotourism. Furthermore, government support, tourist interest, and opportunities for partnerships and digital promotion provide concrete opportunities that can be integrated into the community's economic development strategy. Therefore, the recommended approach is an aggressive strategy based on collaboration and active participation, namely strengthening the capacity of conservation businesses, integrating educational and tourism activities, and developing creative economic products based on turtle conservation.

DISCUSSION

The results of the SWOT analysis indicate that the economic empowerment strategy for coastal communities through turtle conservation in Apar Village is in a very strong strategic position, namely in quadrant I (Strength–Opportunity/SO). This position indicates that the community has dominant internal strengths and faces extensive external opportunities, so an aggressive strategy is highly recommended. This strategy emphasizes the importance of utilizing local potential to maximize opportunities.

The main strength identified in this study is the high level of community concern and involvement in turtle conservation activities. This aligns with the findings of Suryawan & Tehupeiory (2023); Zis et al. (2023), who stated that local community participation is a key factor in the success of turtle conservation in coastal areas of West Sumatra. In the context of Apar Village, conservation is not only seen as an environmental obligation but has also become part of the community's cultural identity. This situation strengthens Rachman's (2023) argument that internalizing cultural values in conservation enhances long-term sustainability.

Significant opportunities are also identified in the growing interest of tourists in turtle-based ecotourism and the support from external parties such as local governments and educational institutions. Research by Prihanta et al. (2020); Areta (2024) shows that developing turtle ecotourism involving communities can have significant economic impacts, including increased income and diversification of household resources. This supports the SO strategy in this study, which integrates

conservation activities with productive community businesses such as tour guiding, educational souvenir production, and homestay services.

However, structural weaknesses still need to be addressed. These findings reinforce the study by Hermawan et al. (2024), which highlighted weak managerial capacity and limited access to capital as common challenges in empowering coastal communities. Therefore, WO and WT strategies, which emphasize institutional capacity building, entrepreneurship training, and strengthening access to markets and capital, are highly relevant. Collaboration with universities, as exemplified by the conservation program in Berau Regency (Rustam et al., 2023), can serve as a model for assisting communities in developing conservation-based economic enterprises.

Ecological and economic threats are also a concern, such as climate change, land conversion, and fluctuations in the price of seafood. Research by Harahap et al. (2015) confirms that the sustainability of sea turtle conservation is highly vulnerable to coastal ecosystem disruption. Therefore, a ST strategy focused on strengthening institutions and developing community-based local regulations is crucial to protecting conservation areas from development pressures and environmental damage.

Overall, the SWOT results support the development of an integrated and collaborative community economic empowerment strategy based on sea turtle conservation. With a strong socio-cultural foundation and significant external support, Apar Village has the potential to become a model for conservation management that focuses not only on preservation but also on sustainably improving the well-being of coastal communities.

CONCLUSION

Based on the analysis, the following conclusions were reached:

1. Community involvement in turtle conservation activities in Apar Village is diverse and active. The community is involved in habitat conservation activities (nest monitoring and hatchling releases), environmental education, tourism management, turtle-themed souvenir production, and the management of local conservation institutions. This involvement has created new economic opportunities for the community, particularly through tourism services and conservation-based creative economy products. These activities also expand community access to training, infrastructure assistance, and partnerships, which have gradually had a positive impact on improving the economic well-being of coastal households.
2. The appropriate strategy for empowering coastal communities is the Strength-Opportunity (SO) strategy, which maximizes the community's internal strengths (high awareness and participation) to seize external opportunities (government support, ecotourism potential, and partnerships). This strategy

includes: integrated ecotourism development, entrepreneurship training, digital promotion of conservation products, and strengthening community-based local institutions. This approach is participatory and collaborative, strengthening the community's position as a key actor in conservation and as a competitive and sustainable local economic player.

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