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The effectiveness of assistance provided by the department of agriculture, food, and fisheries in enhancing fishermen's empowerment in Pariaman City

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ABSTRACT

This study examines the effectiveness of assistance provided by the Department of Agriculture, Food, and Fisheries of Pariaman City in enhancing fisherfolk empowerment. Fishermen in coastal areas face various challenges, including limited access to modern fishing gear, fluctuating fish prices, and environmental uncertainties that affect productivity and welfare. Government assistance programs are expected to address these issues by strengthening the capacity, independence, and economic resilience of the fishermen. This study employed a qualitative descriptive design. Data were collected through observations, in-depth interviews, and documentation involving key informants from the Department of Agriculture, Food, and Fisheries, Fisheries Extension Officers, community representatives, and fishermen in Pariaman City. Data analysis was conducted using Miles and Huberman's interactive model, which consists of data reduction, data display, and conclusion-drawing. The findings indicate that assistance programs have generally been effective in improving fisher empowerment. Assistance in the form of fishing gear and supporting facilities has contributed to increased fishing activity, improved catch efficiency, and reduced operational costs of fishing. In addition, training and mentoring activities have enhanced fishermen's knowledge, skills, and awareness of sustainable marine-resource management. However, the effectiveness of the assistance has not been fully optimal because of uneven distribution, limited participation of fishermen in program planning, and insufficient program adaptation to diverse socio-economic conditions. Overall, the study concludes that the assistance provided has a positive impact on fishermen's empowerment in Pariaman City, although improvements in participation, integration, and sustainability are necessary to achieve long-term empowerment of the fisher community.

Keywords: effectiveness; aid providers; fisherfolk empowerment

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RESEARCH & PUBLISHING



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1. INTRODUCTION

Indonesia is the world's largest archipelagic state, consisting of 17,449 islands and an extensive coastline of approximately 81,000 km². Therefore, coastal zones hold substantial potential for livelihoods and regional development. However, welfare gains from marine resource endowments are not evenly distributed among small-scale fishing communities. In many developing countries, small-scale fisheries can coexist with persistent poverty because access to productive assets, markets, and enabling institutions is limited, and livelihood strategies are shaped by multiple constraints beyond the resource itself (Simmance et al., 2022; Virdin et al., 2023). Triaji (2021) similarly argues that while Indonesia's maritime identity continues to be strengthened, fishermen often remain "spectators" who cannot fully capture the benefits of marine resources. Consequently, breakthroughs are needed to improve fishermen's access to capital, appropriate technology, and skills to optimize coastal resource utilization (Wattimena et al., 2022).

Law Number 7 of 2016 on the Protection and Empowerment of Fishermen, Fish Farmers, and Salt Farmers provides a legal mandate for planned, targeted, and sustainable protection and empowerment, including access to financing, technology, information, and resource protection. However, empowerment in fisheries is not simply the delivery of material inputs, such as gear or boats; it is a multidimensional process that involves capability, agency, and institutional conditions that enable individuals and groups to use support effectively (Bennett et al., 2024). A well-being-oriented perspective further emphasizes that fisheries policy outcomes should not be read only through production metrics because poverty reduction and human well-being depend on social and institutional factors that condition whether livelihood gains are stable and meaningful over time (Kelling et al., 2021).

Pariaman City, located on the west coast of Sumatra, represents an important local setting where fisheries are positioned as a strategic sector that contributes to economic, social, and environmental development (Regional Regulation No. 8 of 2014 on the Pariaman City RPJPD). The city has a substantial fishing population. Data from the Pariaman City Department of Agriculture, Food, and Fisheries indicate that there were 1,183 marine capture fishermen (1,060 full-time and 123 part-time) in 2023. However, fishermen face persistent livelihood risks, such as weather variability and fluctuating fish prices, while limited access to modern fishing gear remains a major constraint that suppresses productivity and restricts fishing range. Traditional gear and small vessels with low-capacity engines often lead to short travel ranges and frequent breakdowns, reducing the ability of fishermen to reach productive fishing grounds. These operational constraints translate into low and unstable incomes, making fishing households more vulnerable to poverty. Supporting this concern, BPS Pariaman City shows that the poverty rate increased from 4.2% (2023) to 4.26% (2024). Aidyl (2022) also reported generally low monthly earnings among fishermen respondents in Pariaman City, suggesting that welfare improvements remain limited.

At the local governance level, Pariaman Mayor Regulation Number 53 of 2023 outlines the duties and functions of the Department of Agriculture, Food, and Fisheries, including fisheries resource management, facilities/infrastructure assistance, and the development of fishermen. Although empowerment programs are mandated in regional policy, operational details, especially the type, targeting logic, and distribution mechanism of equipment assistance, are often not described in depth, creating a practical challenge for accountability and evaluation. Department data (2022–2023) show that assistance was provided to 42 fishermen groups (e.g., fish boxes, long-tail engines, nets, outboard engines, sonar/GPS). In 2024, assistance was provided to only 12 groups, mainly 40 HP and long-tail engines, indicating a decline in the coverage. In addition, fishermen report that benefits are not evenly felt because assistance is distributed through groups rather than directly to individual fishermen, which can create uneven access within groups, depending on local implementation and governance dynamics. Evidence from Indonesia also shows that livelihood-focused fisheries interventions are widespread, but systematic evaluation of outcomes (including longer-term and distributional outcomes) is often limited, making program effectiveness highly dependent on implementation quality and local context (Stacey et al., 2021).

This situation motivates a clear research gap. While empowerment policies and gear-assistance programs are widely used as instruments to improve welfare, prior studies frequently provide limited measurement of empowerment outcomes or do not sufficiently examine how local institutional

arrangements shape who benefits and why. The broader literature highlights that fisheries-related assistance may not automatically translate into poverty reduction or empowerment, and outcomes can vary substantially across communities due to differences in access, capability, and institutional support (Simmance et al., 2022; Virdin et al., 2023; Kelling et al., 2021). In Pariaman City specifically, there remains limited evidence that links the department's fishing gear assistance to measurable improvements in fishermen's empowerment under the city's current implementation conditions and recent changes in program coverage

Therefore, this study contributes by evaluating the effectiveness of fishing gear assistance provided by the Department of Agriculture, Food, and Fisheries of Pariaman City in improving fishermen's empowerment. Beyond assessing whether assistance is associated with empowerment outcomes, the study also clarifies why impacts may be uneven by focusing on practical implementation features particularly how group-based distribution and institutional support (including extension and feedback communication with fishermen groups) condition whether equipment assistance becomes usable capabilities rather than short-term inputs. These findings are expected to inform more equitable and outcome-oriented empowerment policy design at the local government level.

2. LITERATURE REVIEW

2.1. Definition of Effectiveness

Effectiveness is derived from the English word "effective," which means successfully achieving objectives accurately and efficiently in the use of the resources. Effectiveness measures the extent to which targets whether in terms of quantity, quality, or time have been achieved as planned. According to H. Emerson (Handayaningrat, 1994), "*Effectiveness is a measurement that indicates the achievement of previously established goals.*" Meanwhile, Mahmudi (2005) defines effectiveness as "*the relationship between outputs and objectives, where the greater the contribution of outputs to the achievement of objectives, the more effective the organization, program, or activity.*"

Furthermore, Robert Duncan, as cited by Richard M. Steers in his book "Organizational Effectiveness" (1985), states that the success of an organization can be measured through three main indicators: goal attainment, integration, and adaptation. Goal attainment refers to the gradual process of achieving objectives, as measured by the clarity of targets, timeframes, and legal legitimacy. Integration is an organization's ability to carry out socialization, communication, and internal-external coordination to create alignment. Adaptation refers to the ability to adjust to environmental changes through appropriate human resource recruitment and the development of infrastructure.

This theory is relevant for analyzing the effectiveness of fisherman's empowerment programs in Pariaman City in promoting local economic growth.

2.2. The Role of Technical Agencies in the Development of the Fisheries Sector

Based on Pariaman Mayor Regulation Number 53 of 2023 concerning the position, organizational structure, duties, and functions of the Department of Agriculture, Food, and Fisheries, the technical agency is granted authority in the management of fisheries resources, the provision of facilities and infrastructure assistance, and the guidance and development of fishermen's human resources. Within the framework of role theory adopted from Siagian (2003), the Fisheries Department has a strategic role as a stabilizer, innovator, modernizer, and pioneer in developing the fisheries sector.

As a stabilizer, the Fisheries Department plays a role in creating a balanced environmental situation so that development in the fisheries and marine sectors can proceed efficiently while also supporting the stability of fisheries production and fishermen's economic conditions. As an innovator, the department is expected to generate creative ideas to ensure the success of fisheries and marine development programs and encourage the empowerment of fishing communities in strengthening household economic resilience. The role of the modernizer requires the Fisheries Department to transform traditional mindsets into more innovative and adaptive ones, enabling fisheries development programs to align with regional realities and the conditions of fishing communities. Lastly, as a pioneer, the department is obligated to serve as a model

and trailblazer for all segments of society, acting wisely and objectively so that development in the marine and fisheries sector can be carried out in a directed and sustainable way.

2.3. The Concept of Community Empowerment

According to [Sumaryadi \(2005\)](#), community empowerment is an effort to prepare communities through a process that strengthens local institutions, enabling them to achieve progress, independence, and prosperity within a framework of sustainable social justice. From this perspective, institutions function as intermediaries and supporters in helping communities realize their shared goals. Therefore, empowerment is not sufficient if it is limited to providing physical assistance or resources alone; it must involve building the capacity of individuals and groups by enhancing their knowledge, skills, and awareness of their rights and obligations. See [Figure 1](#)

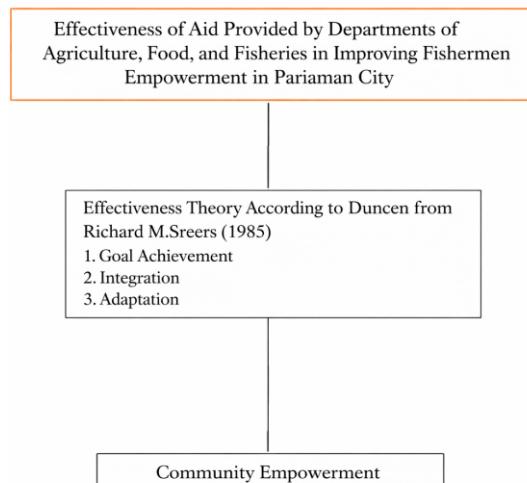


Figure 1. Conceptual Framework

3. METHOD

This study employed a qualitative approach using a descriptive method because it aims to describe and interpret the phenomenon in its natural setting and in depth, specifically the strategies of the Department of Agriculture, Food, and Fisheries of Pariaman City to improve fishermen's welfare. This study focuses on the assistance program implemented over the last five years in line with the current leadership period, with welfare indicators limited to social and economic aspects.

The research was conducted at the Office of the Department of Agriculture, Food, and Fisheries of Pariaman City, and within the context of coastal fishermen and communities who interact with the program. The unit of analysis is the strategy and implementation mechanism of the assistance program, including planning, targeting, distribution, utilization, and monitoring. The conceptual population includes stakeholders directly involved in the program cycle and those who receive or are affected by the program.

Informants were selected using purposive sampling, prioritizing institutional leaders and program implementers, and then cross-validated through the beneficiaries and community actors. See [Table 1](#)

Table 1. Research Informants

No.	Position	Number	Rationale
1	Head of the Fisheries Division	1	Head of the department overseeing the research topic
2	Fisheries Officer	2	Directly involved in implementing program activities
3	Buana Pasir Pauh Fishermen Group	1	Community engaged in marine conservation and education in Pariaman City
4	Fishing Community	5	Primary subjects and beneficiaries of the research

The inclusion criteria covered departmental personnel involved in the assistance program within the last five years and fishermen/community representatives with direct experience related to the assistance. The exclusion criteria were applied to individuals without relevant involvement or information about the program.

This study used primary and secondary data. Primary data were collected through observations, unstructured interviews, and documentation. Observations were conducted to capture the factual context of implementation (e.g., assistance handover processes, fishermen's use of the provided equipment, fishermen's activities after receiving assistance, and interactions between the department and the fishermen). Interviews were conducted to explore strategies, distribution mechanisms, constraints, and perceived socioeconomic outcomes. Documentation was used to verify information through departmental profiles, policy documents, activity reports/archives, and other records. Secondary data were obtained from the relevant literature (peer-reviewed articles/journals) and other supporting sources related to fishermen empowerment.

The data were analyzed qualitatively through data reduction, data display, and conclusion drawing/verification. This analytical technique was chosen because it best fits the research question, which emphasizes understanding the processes, strategies, and mechanisms of program implementation, rather than statistical testing. Data trustworthiness was strengthened through source triangulation (comparing information from leaders, implementers, fishermen, community representatives, and documents) and method triangulation (interviews, observations, and documentation) to minimize bias and enhance the credibility of the findings.

4. RESULT AND DISCUSSION

4.1 The Effectiveness of Assistance Provided by the Department of Agriculture, Food, and Fisheries in Enhancing Fishermen Empowerment in Pariaman City

The results of this study indicate that the assistance provided by the Department of Agriculture, Food, and Fisheries of Pariaman City has generally had a positive impact on fisherfolk empowerment. This finding can be interpreted through an empowerment lens that views assistance as an enabling resource that reduces dependency and expands the capabilities of fishermen. Several fishermen explained that after receiving fishing gear and engines, they were able to fish more independently and rely less on others, reflecting increased autonomy and productive capacity as the core elements of empowerment. This mechanism is consistent with the small-scale fisheries livelihoods perspective, where improved access to assets can strengthen livelihood capabilities, while outcomes remain contingent on broader institutional and market constraints (Simmance et al., 2022; Virdin et al., 2023).

However, the findings also show that effectiveness is uneven, indicating that empowerment gains are not always automatic. The department's assistance tends to be more effective for fishermen who already have the basic capacity to operate and maintain the equipment, are embedded in functional groups, and can navigate administrative procedures. In contrast, fishermen with lower administrative literacy or weaker group access may experience limited benefits from the program. This aligns with the argument that empowerment requires supportive institutions and sustained support rather than one-off inputs (Bennett et al., 2024; Kelling et al., 2021).

From this perspective, the effectiveness of assistance should not be assessed solely by the volume of aid distributed but by the extent to which fishermen can utilize the assistance sustainably. Thus, assistance can be understood as a mechanism that facilitates an empowerment process among fisherfolk rather than an end in itself. This pattern is consistent with evidence from Indonesia, showing that livelihood-oriented interventions may generate improvements but often produce partial and heterogeneous impacts when mentoring, monitoring, and adaptive program design are limited (Stacey et al., 2021). Accordingly, a key boundary condition is that assistance is more likely to translate into empowerment when it is accompanied by sustained guidance, fair targeting, and mechanisms that ensure equitable access within and across fishermen groups.

4.1.1 Analysis of Goal Attainment in the Provision of Assistance

In terms of goal attainment, the assistance provided in the form of fishing gear, production facilities, and other supporting resources has helped the fishermen increase their catch yields. This improvement reflects the alignment between the program objectives and the basic needs of the fishermen. Nevertheless, some fishermen continue to face obstacles in maximizing the use of assistance due to limited technical knowledge and experience. Therefore, the effectiveness of the assistance cannot yet be considered optimal when viewed from the perspective of short-term goal achievement alone.

While increased catch and improved work efficiency indicate progress toward goal attainment, the study also suggests that welfare outcomes are not uniformly significant, implying that gear provision alone may be insufficient to shift household welfare for all recipients. This is consistent with small-scale fisheries research showing that poverty can persist even when production improves because income stability is mediated by price volatility, debt relations, market access, and seasonal risk (Virdin et al., 2023; Kelling et al., 2021).

An alternative explanation is that perceived improvement after receiving assistance may partly reflect temporary external conditions, such as favorable fishing seasons or short-term price increases, rather than the program's effect alone. In addition, because assistance is channeled through groups, recipients may be systematically those with better networks or stronger group governance, creating selection effects that can make program outcomes look more positive than they would be under fully equitable coverage. Therefore, goal attainment should be interpreted as *context-dependent* rather than self-evident.

4.1.2 Analysis of Integration in the Provision of Assistance

The integration aspect of Duncan M. Steers' theory relates to an organization's ability to establish communication and cooperation with target groups. The findings show that the Department conducted socialization and coordination with fishermen prior to distributing assistance. However, some fishermen still perceive the intensity of such communication as insufficient. This condition affects fishermen's understanding of the objectives and mechanisms of assistance. Accordingly, the integration aspect must be improved to enhance overall program effectiveness.

Empowerment theory emphasizes the importance of active community participation at every stage of a program. In this study, fishermen's participation was relatively passive, particularly during the planning stage. Fishermen tend to function more as recipients of assistance rather than as subjects of empowerment. This indicates that the empowerment process has not yet been fully implemented in accordance with the ideal concepts. Therefore, the effectiveness of assistance should be improved by encouraging more active participation by fishermen.

Integration appears to be constrained by information asymmetry and uneven communication. The study shows that access to program information is not evenly distributed: some fishermen learn through group leaders or extension officers, while others only become aware after implementation has started or even after assistance has been distributed. This limits their understanding of program objectives and how to use the support effectively. This weakens integration because effective coordination requires shared understanding, procedural clarity, and predictable communication routines between the department and fishermen.

From an empowerment perspective, the persistence of top-down planning and passive participation indicates that fishermen are still positioned primarily as recipients rather than co-producers of program decisions. This is important because empowerment in fisheries is strongly linked to participation and co-management dynamics, where legitimacy and compliance improve when communities have meaningful voice in program targeting, design, and evaluation (Bennett et al., 2024). In practice, limited participation can reduce program ownership and long-term utilization.

4.1.3 Analysis of Adaptation in the Provision of Assistance

According to Duncan M. Steers, adaptation refers to a program's ability to adjust to environmental conditions. The assistance provided by the Department has been tailored to the characteristics of Pariaman

City's coastal areas. However, the dynamic nature of weather conditions and changes in fishermen's economic circumstances have not been fully considered in the program's design. Consequently, some forms of assistance cannot be optimally utilized under certain conditions. This indicates that program effectiveness must be improved through a more adaptive approach.

The findings suggest that adaptation is constrained not only by environmental variability but also by the institutional capacity for continuous learning. The study explicitly identifies the need for a stronger monitoring and evaluation (M&E) system so that the department can detect real field impacts and identify weaknesses systematically; without routine evaluation, program adjustments become difficult and problems persist. This supports the interpretation that program effectiveness depends on adaptive governance: the ability to revise targeting, equipment types, and support modalities as conditions change (Kelling et al., 2021; Stacey et al., 2021).

Furthermore, the research findings indicate that program sustainability is a crucial indicator for assessing the effectiveness of assistance programs. Assistance provided only once without continued mentoring tends to have a limited long-term impact. Empowerment theory asserts that the empowerment process must be continuous. Without ongoing assistance and regular evaluations, fishermen may revert to their initial conditions. Therefore, program sustainability is a key factor in determining the effectiveness of such assistance.

The effectiveness of assistance can also be observed through changes in the fishermen's attitudes and mindsets. Some fishermen have begun to demonstrate greater independence and a stronger orientation toward developing their businesses. These changes align with the objectives of empowerment, which emphasize increased awareness and self-confidence in communities. However, such changes have not occurred evenly across all groups of fishermen, indicating that the empowerment process remains in a transitional stage.

From an organizational perspective, the effectiveness of assistance is influenced by the internal capacity of the department to manage the program. Limitations in human resources and budget allocation represent significant challenges to program implementation. Duncan M. Steers emphasizes that organizational effectiveness is highly dependent on internal capacity to manage resources. These limitations affect the quality of program implementation and monitoring. Therefore, strengthening institutional capacity is essential in this regard.

Overall, the findings indicate that the assistance provided by the Department of Agriculture, Food, and Fisheries of Pariaman City has been reasonably effective, although it is not yet fully optimal. An analysis based on empowerment theory and Duncan M. Steers' effectiveness framework reveals both strengths and weaknesses in program implementation. The main strength lies in the relevance of the assistance to fishermen's needs, while weaknesses are found in the aspects of participation, integration, and adaptation. With improvements in these areas, the effectiveness of assistance is expected to increase and contribute positively to the sustainable empowerment of fishers.

4.2 Factors Influencing Fishermen Empowerment Based on Community Empowerment Indicators

4.2.1 Access to Information

Access to information is a crucial indicator of community empowerment because it enables communities to understand their rights, obligations, opportunities, and available development programs. Adequate access to information encourages transparency, enhances decision-making capacity, and strengthens communities' bargaining positions within the development process. In the context of fisherfolk empowerment, access to information includes transparency regarding the types of assistance provided, distribution mechanisms, eligibility requirements, and post-assistance support.

The findings of this study indicate that fishermen's access to information regarding assistance programs from the Department of Agriculture, Food, and Fisheries in Pariaman City is not evenly distributed. Some fishermen obtain information through group leaders or extension officers; however, a significant number only become aware of the assistance after the program has begun or even after the

assistance is distributed. This situation results in a limited understanding among fishermen regarding the objectives of the assistance and how it should be utilized.

This uneven access to information has wider implications for governance quality because it can create perceived exclusion, reduce trust in public programs, and weaken fishermen's bargaining position. In empowerment terms, information is a capability: without timely and transparent information, fishermen cannot make informed decisions about eligibility, utilization, and accountability.

4.2.2 Participation

Participation refers to the active involvement of the community in all stages of development, including planning, implementation, and program evaluation. High levels of participation reflect a sense of ownership and contribute to sustainable empowerment outcomes.

In Pariaman City, fishermen's participation in assistance programs remains passive and limited. Fishermen are generally involved in the stage of receiving assistance, while their involvement in program planning and evaluation remains minimal. Assistance programs are predominantly designed in a top-down manner by the Department, with fishermen's needs being accommodated but not fully integrated into the decision-making processes.

Limited participation also implies that the program may be less responsive to heterogeneous needs across groups (e.g., differences in vessel size, fishing grounds, and capital constraints). This can explain why some assistance is perceived as less suitable or underutilized, and why empowerment gains are uneven across beneficiaries.

4.2.3 Accountability

Accountability refers to the obligation of program managers to be responsible for the processes and outcomes of program implementation in beneficiary communities. Accountability includes transparency in budget utilization, clarity of procedures, and the availability of monitoring and complaint mechanisms.

The study reveals that accountability in fishermen assistance programs in Pariaman City has been implemented procedurally; however, it has not been fully perceived by fishermen. Some fishermen are not clearly informed about the basis for selecting assistance recipients or the standards used to assess the program's success. Accountability reports tend to remain administrative and internal to the department and are not openly disseminated to the fishing community.

Accountability gaps can directly shape perceived fairness and public trust. When fishermen do not clearly understand recipient selection criteria or program success standards, they may interpret outcomes through the lens of favoritism or unequal access, which can undermine social cohesion among fishermen groups and weaken program legitimacy.

4.2.4 Capacity of Local Organizations

The capacity of local organizations refers to the ability of community groups or institutions to manage resources, make decisions, and perform organizational functions independently and sustainably. Strong local organizations are a key pillar of successful community empowerment.

In Pariaman City, fishermen groups have already been established, and their organizational capacity is functioning well. Many groups become active during assistance distribution and can manage economic activities independently. Institutional mentoring and training provided by the Department have been implemented adequately, enabling improvements in managerial skills and leadership capacity among fishermen groups.

Strong fishermen groups can function as a key enabling condition for empowerment because they improve coordination, collective action, and access to information. However, the same group-based channel can also become a bottleneck if internal governance is weak, if benefits concentrate among repeat recipients, or if non-member small-scale fishermen remain excluded.

4.3 The Relationship Between Assistance Provision and the Enhancement of Fishermen Empowerment

The relationship between assistance provided by the Department of Agriculture, Food, and Fisheries and the enhancement of fishermen empowerment in Pariaman City can be observed through changes in fishermen's social and economic conditions after receiving assistance. Assistance functions as an initial stimulus for fishermen to improve the capacity of their fisheries-related enterprises. In empowerment theory, assistance is regarded as a tool for strengthening the ability of individuals and groups to manage their resources. When assistance is utilized optimally, fishermen have greater opportunities to increase their productivity and incomes. Thus, the provision of assistance has a direct relationship with the empowerment process of fisherfolk.

The findings indicate that fishermen who receive assistance experience improved access to production facilities and infrastructure. This access facilitates fishing activities and contributes to increased self-confidence in developing the business. Within the empowerment framework, this condition reflects an enhancement of the individual's capacity. Therefore, assistance plays a significant role in strengthening fishermen's positions as economic actors.

Assistance also influences improvements in the knowledge and skills of fishermen. Although the primary focus of the assistance is physical support, fishermen indirectly learn to manage and utilize the equipment and facilities provided to them. This learning process constitutes a non-material aspect of the empowerment. However, the level of knowledge improvement varied among fishermen, indicating that the relationship between assistance and empowerment is strongly influenced by an individual's capacity to utilize the support received.

The relationship between assistance and fishermen empowerment is further reflected in changes in working patterns. Prior to receiving assistance, some fishermen relied on traditional equipment with limited catch. After receiving assistance, the fishermen began adopting more efficient working methods. This shift demonstrates an increase in production capacity and indicates that assistance contributes to transforming the work practices of fishermen toward greater productivity.

However, the study also found that not all fishermen experienced significant improvements in empowerment. Some fishermen remain dependent on assistance without making efforts to independently develop their enterprises. This indicates that the relationship between assistance and empowerment is not automatic. Empowerment requires continuous mentoring and guidance. Without sustained support, assistance risks becoming consumptive.

The relationship between assistance and empowerment is also influenced by environmental and socioeconomic conditions. Weather variability, fish price fluctuations, and market access remain major challenges. Even with assistance, fishermen continue to face high levels of business risk that can hinder welfare improvement. Thus, the relationship between assistance and empowerment is complex and multidimensional.

The findings further reveal that fishermen who receive assistance on a continuous basis tend to experience more significant improvements in empowerment. Sustainable assistance allows fishermen to adapt gradually and develop their enterprises over time. This aligns with empowerment concepts that emphasize long-term process. Continuous assistance strengthens the relationship between government intervention and the enhancement of fishermen's capacity.

Overall, the provision of assistance has a positive relationship with the enhancement of fisherfolk empowerment in Pariaman City. Assistance serves as an initial catalyst for increasing the capacity, independence, and welfare of fishermen. However, this relationship is strongly influenced by internal and external factors. Without sustained mentoring and comprehensive policy support, the impact of such assistance is limited. Therefore, assistance should be viewed as part of a broader and integrated empowerment strategy.

4.4 Alignment of Government Support with Fishermen's Needs in the Field

The alignment between the support provided by the Department of Agriculture, Food, and Fisheries and the needs of fishermen is crucial in determining the effectiveness of assistance programs.

The research findings indicate that most forms of assistance, such as fishing gear and production facilities, are generally aligned with the conditions and primary needs of fishermen in Pariaman City and have contributed to an increase in fishing activities. Thus, the support provided by the Department is considered to have fairly good relevance to the field's needs.

However, differences in needs exist among fishermen groups due to varying business characteristics and challenges. In some cases, the assistance provided did not fully meet the specific needs of the fishermen, resulting in suboptimal utilization. The suitability of assistance is also influenced by the level of fishermen's involvement in program planning, as those who are involved tend to receive more accurately targeted assistance.

The general alignment of assistance with fishermen's needs can be explained by the fact that the provided assets directly target binding constraints especially limited gear and engine capacity which are immediate barriers to fishing range and efficiency. Nevertheless, the mismatch reported in some cases underscores that "needs" are not uniform across groups; without participatory planning and systematic needs assessment, assistance risks being technically relevant but operationally suboptimal for specific fishing practices or vessel characteristics (Kelling et al., 2021; Stacey et al., 2021).

From a technical perspective, some fishermen experience difficulties in using assistance owing to limited knowledge and experience. This indicates that the suitability of assistance is determined not only by the type of support provided but also by the readiness of human resources, making training and guidance essential for effective support. In addition, fishermen's needs are not only material in nature but also include non-material support, such as access to information, business assistance, and marketing support.

The suitability of assistance is also influenced by the timeliness of its distribution and the program's ability to adapt to developments in fishery technology. Timely, innovative assistance aligned with fishermen's actual needs tends to be utilized more optimally. Overall, the support provided by the Department is relatively aligned with fishermen's needs; however, further improvements are required through participatory approaches, mentoring, and program innovation to enhance the effectiveness of fishermen's empowerment.

4.5 Implications of Research Findings for Department Policies and Programs

The research findings show that the Department's assistance programs have had a positive impact but require refinement. These findings serve as a basis for the need to evaluate existing policies to ensure that they are more responsive to fishermen's needs.

The main implication of this study is the need to strengthen the empowerment approach, in which assistance is not merely focused on the distribution of facilities but also on enhancing fishermen's capacity through guidance and mentoring programs. Furthermore, increasing fishermen's participation in program planning is essential to ensure that policies are closely aligned with field conditions.

Policies also need to be designed in a flexible and contextual manner by considering the diverse socioeconomic conditions of fishermen. In addition, improved inter-agency coordination, strengthened institutional capacity, and the implementation of a sustainable monitoring and evaluation system are necessary to enhance program effectiveness in the future.

Overall, this research provides strategic implications for the development of policies and programs of the Department of Agriculture, Food, and Fisheries of Pariaman City, directing them toward empowerment, participation, and sustainability to improve fishermen's welfare sustainably. See Table 2

Table 2. Summary

Theory	Indicator	Findings	Analysis Results
Effectiveness Theory according to Duncan M. Steers	Goal Achievement	Assistance in the form of fishing gear, boat engines, and supporting facilities has mostly been received by fishermen registered in department-assisted groups. However, some small-scale fishermen have not yet received any assistance.	The distribution of assistance has been directed toward the intended targets but has not been evenly distributed across them. This indicates that goal achievement has begun, although effectiveness is not yet optimal because of quota limitations and incomplete beneficiary data.

		Some fishermen reported increased catch volumes after receiving assistance, but income increases were not significant for all recipients.	The goal of improving fishermen's welfare has begun to be achieved, but the impact remains limited. This suggests that short-term goals have been met, whereas long-term goals still require continued support.
Integration		The Department has conducted socialization and mentoring activities; however, their intensity has not been regular and has not reached all beneficiary fishermen.	Integration among actors has been established but is still weak. The lack of continuous communication reduces the program's overall effectiveness in empowering fishermen.
		Fishermen generally participate in the programs offered, but their involvement in planning and evaluation is low.	Participation levels were largely passive. According to Steers' theory, suboptimal integration can hinder the achievement of overall organizational effectiveness.
Adaptation		Some fishermen are able to utilize assistance according to their needs, while others face difficulties due to limited skills and technical knowledge.	Fishermen's adaptation to assistance is uneven, indicating the need for training and mentoring to ensure that assistance genuinely enhances fishermen's independence.
		Assistance programs remain general in nature and have not fully adapted to the socioeconomic conditions and local characteristics of fishermen.	Organizational adaptation to external environmental conditions is not yet optimal in this sector. According to Steers, a low adaptive capacity can reduce program effectiveness in the long term.

5. CONCLUSION

Based on the research findings, it can be concluded that the assistance provided by the Pariaman City Office of Agriculture, Food, and Fisheries to fishermen is effective in improving empowerment. This effectiveness is reflected in increased fishing activities, higher catch yields, and improved work efficiency through the use of modern fishing gear and supporting facilities that help reduce operational costs.

In addition to physical assistance, the empowerment program includes efforts to enhance fishermen's knowledge and skills through training and mentoring, which encourages better fishing practices and greater awareness of marine resource sustainability. However, the program's effectiveness still faces several challenges, such as uneven assistance distribution, limited socialization, and budget constraints.

Overall, the assistance program positively impacted fishermen's welfare. Nevertheless, improvements in distribution, implementation, and supervision are necessary to achieve optimal fishermen empowerment in Pariaman City.

This study has limitations. First, the qualitative design and purposive sampling provide in-depth insight but do not allow statistical generalization to all fishermen in Pariaman or other regions. Second, outcomes are largely based on perceptions and self-reported changes, which may be affected by recall bias and social desirability bias. Third, the study is cross-sectional in the sense that it does not track the same households before and after assistance over time, so it cannot isolate causal effects from seasonal condition

Ethical Approval

This study did not require formal ethical approval because it involved non-medical social research and did not include vulnerable populations. The research was conducted in accordance with ethical standards for social science research. Data were collected through interviews, observations, and document analysis with permission from the Department of Agriculture, Food, and Fisheries of Pariaman City and informed agreement from all participants.

Informed Consent Statement

All participants were informed about the objectives, procedures, and scope of the study prior to data collection. Informed consent was obtained before conducting interviews and observations. Participation in this study was voluntary, and participants had the right to withdraw at any stage of the research process.

Confidentiality Statement

All information obtained from participants was treated confidentially. The identities of informants were anonymized to protect privacy, and the data were used solely for academic research purposes.

Authors' Contributions

HA contributed to conceptualization, research design, data collection, data analysis, and writing the original draft of the manuscript. IS contributed to supervision, theoretical refinement, review, and editing of the manuscript. All authors have read and approved the final version of the manuscript.

Disclosure Statement

The authors declare no conflict of interest related to this research.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request. Some data are restricted due to institutional confidentiality and the protection of research participants.

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