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Motivational Needs of Indigenous Capture Fish Farmers for Increased Protein Production in Bayelsa State, Nigeria

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Abstract

The study investigated the motivational needs of indigenous capture fish farmers for increased protein production in Bayelsa State, Nigeria. The study was guided by four specific objectives and four research questions. It adopted the analytic descriptive survey research design. The targeted population of the study was all educated capture fish farmers in Bayelsa State. The purposive sampling technique was used to select a sample size of 267 respondents. The instrument for data collection contained 20 item statements, titled "Motivational Needs of Indigenous Capture Fish Farmers for Increased Protein Production Questionnaire", which was used to elicit information from the respondents. It was validated by two experts, one from the Test and Measurement unit of the Department of Counselling and Educational Psychology and one from the Department of Agricultural Science Education, Faculty of Education, Niger Delta University, Wilberforce Island, Bayelsa State. To ascertain the reliability of the instrument, the Pearson Product Moment Correlation Coefficient statistical tool was used and a reliability index of 0.72 was yielded, indicating a good reliability. The data collected were analyzed using mean statistics and standard deviation. The study found that that access to affordable and modern fishing equipment will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. The study therefore concluded and recommended that access to affordable and modern fishing equipment significantly motivates indigenous capture fish farmers to enhance their fishing efforts for increased protein production. As such, the Government of Bayelsa State should provide indigenous capture fish farmers with affordable and modern fishing equipment to enhance their efficiency and motivation, ensuring increased protein production.

Keywords: Capture, Fish Farmers, Increased Protein Production, Indigenous, Motivational Needs.

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INTRODUCTION

Agricultural development in coastal societies continues to rely heavily on small-scale, community-embedded fisheries, where motivation plays a critical role in sustaining productivity and livelihoods. Motivation shapes the willingness of fishers to invest effort, adopt innovations, and engage in sustainable practices, particularly in traditional contexts where livelihood decisions are deeply rooted in cultural norms and socio-economic realities (Ainley, Berkes & McConney, 2023; Boateng, 2021). In Bayelsa State, where fishing remains a major source of food and employment, understanding the drivers of motivation in local fishing communities is vital for strengthening fish supply and, ultimately, enhancing nutritional outcomes, thereby creating a logical entry point for examining how motivation influences the actions of fishers.

The indigenous character of fishing communities in the Niger Delta reflects generational knowledge, customary practices, and cultural ties to aquatic ecosystems, which influence how fishers interpret opportunities, constraints, and livelihood choices. Indigenous populations often exhibit strong adaptive strategies derived from local ecological knowledge, yet their participation in development initiatives is frequently constrained by socio-economic

marginalisation and limited institutional support (Gómez-Merino & Trejo-Téllez, 2023; Ofoegbu, 2022). These realities underscore how cultural identity shapes fishing practices and productivity, which naturally leads to an exploration of the specific livelihoods of indigenous capture fish farmers.

Capture fish farmers in coastal communities depend directly on natural water bodies, undertaking labour-intensive fishing activities that demand skill, endurance, and substantial risk-taking, with productivity often influenced by environmental variability and resource depletion. The effectiveness of capture-based fisheries is closely linked to fishers' motivation to embrace improved methods, optimise harvests, and engage in responsible fishing practices even amid fluctuating ecological conditions (Kumah & Aniah, 2022; Tilley, Wilkinson & Mills, 2022). Since the livelihood outcomes of capture fish farmers determine the volume and quality of fish available for consumption, this discussion flows into the broader relevance of indigenous capture fish farmers within Bayelsa State's food system, particularly in relation to their contribution to household nutrition, food security, and the supply of fish as a major source of dietary protein.

Indigenous capture fish farmers constitute a key component of local food security architecture, providing a substantial share of the animal protein consumed in rural and peri-urban communities. Their contribution is significant because fish remains one of the most economically accessible and culturally preferred protein sources across the Niger Delta, yet their productivity depends on conditions that sustain motivation and enable innovation (Onyango Mutinda, & Ochieng, 2021; Ugochukwu & Ibe, 2023). Their strategic role in meeting dietary needs reinforces the need to examine protein concerns that affect public health in the region.

Protein remains an essential nutrient for growth, immunity, and general well-being, and fish provides a high-quality protein source with minimal cost compared to livestock. In Nigeria, however, inadequate protein intake persists as a public health concern, with fish playing a vital role in closing the nutritional gap, particularly among low-income households (FAO, 2022; Okpara, Sampson & Ebiere, 2023). The importance of fish protein in rural diets provides a strong link to the discourse on protein production.

Increasing protein production is essential for addressing nutritional deficiencies, especially in regions where other animal protein sources are economically inaccessible. Enhancing the volume of fish protein available to consumers requires improving fishing outcomes, strengthening market systems, and promoting supportive policies that increase fishers' productivity (Eyo & Effiong, 2021; Usman & Emmanuel, 2023). Since productivity relies partly on access to necessary inputs, it becomes important to consider how equipment access shapes fishers' motivation and efficiency.

Access to affordable and modern fishing equipment significantly enhances fishing efficiency, reduces labour demands, and increases safety, all of which contribute to higher yields and better market-quality fish, by enabling fishers to harvest more fish, minimise post-harvest losses, and maintain the freshness and quality of their catch for sale and consumption. Studies have shown that modern gear such as improved nets, durable boats, and efficient preservation tools encourages fishers to increase effort and adopt practices that improve catch quality (Ayanlade & Oni, 2022; Sarpong & Bannerman, 2023). These insights naturally link to incentives such as financial assistance, which often determines whether such equipment can be acquired.

Low-interest credit schemes, (Food and Agriculture Organization [FAO], 2024) provide vital financial leverage for small-scale fishers, enabling them to purchase improved gear, invest

in safer boats, and adopt preservation technologies that reduce post-harvest losses. Access to credit not only increases productivity but also strengthens fishers' confidence and motivation to remain in the occupation despite livelihood uncertainties (Udoh & Okoro, 2022; Mensah, Armah & Danso, 2023). However, sustained productivity is also influenced by the quality and stability of aquatic ecosystems, which shape fish availability and fishing success rates.

Improving environmental conditions in fishing communities such as reducing pollution, managing water hyacinth invasions, and protecting breeding grounds has been shown to enhance fish availability and reduce the stress associated with fishing activities. Healthy aquatic environments support natural regeneration of fish stocks, thereby motivating fishers to sustain effort and invest in productivity-enhancing innovations (Scheren, Ekpenyong & Abah, 2021; Abah & Nwankwo, 2023). Environmental improvements must also be supported by broader safety systems, which create a stable setting for fishing activities.

Ensuring safe and secure fishing environments by government authorities, community-based organisations and local fishing associations and fishers themselves is central to sustaining fisher motivation, given the increasing threats of piracy, boat accidents, and climate-related hazards in coastal Nigeria. Safety provisions such as surveillance, patrols, and designated safe zones promote confidence among fishers, allowing them to work longer hours and explore productive fishing grounds without fear (Adewumi & Olaleye, 2022; Eke, Ibizugbe & Wali, 2023). Despite the importance of these motivational and structural conditions, evidence suggests persistent challenges that constrain indigenous fishers' productivity in Bayelsa State, giving rise to the need for this study.

In many fishing communities across Bayelsa State, fishers continue to struggle with inadequate motivation due to limited access to modern equipment, insufficient credit support, unsafe fishing environments, and deteriorating ecological conditions, all of which undermine fish availability and protein sufficiency. Yet, empirical research exploring the motivational needs of indigenous capture fish farmers in relation to protein production remains scarce, creating both a conceptual and contextual gap in fisheries development literature.

Therefore, it is against this backdrop that this study investigated the motivational needs of indigenous capture fish farmers for increased protein production in Bayelsa State, Nigeria. Specifically, the study sought to investigate how;

1. access to affordable and modern fishing equipment will motivate indigenous capture fish farmers for increased protein production in Bayelsa State;
2. provision of low-interest credit schemes will motivate indigenous capture fish farmers for increased protein production in Bayelsa State;
3. improvement of environmental conditions in fishing communities will motivate indigenous capture fish farmers for increased protein production in Bayelsa State; and
4. ensuring safe and secure fishing environments will motivates indigenous capture fish farmers for increased protein production in Bayelsa State.

Research Questions

1. How will access to affordable and modern fishing equipment motivate indigenous capture fish farmers for increased protein production in Bayelsa State?
2. How will provision of low-interest credit schemes motivate indigenous capture fish farmers for increased protein production in Bayelsa State?
3. How will improvement of environmental conditions in fishing communities motivate indigenous capture fish farmers for increased protein production in Bayelsa State?

4. How will ensuring safe and secure fishing environments motivates indigenous capture fish farmers for increased protein production in Bayelsa State?

METHODOLOGY

The study area was Bayelsa State and it adopted descriptive survey research design. The targeted population of the study was all 377 registered fish farmers across the eight Local Government Areas of Bayelsa State, drawn from official agricultural listings (Ministry of Agriculture and Natural Resources, Bayelsa State, 2024). A sample size of 267 respondents was purposively selected for study. Hence, the sampling technique adopted for the study was the purposive sampling technique. The instrument for data collection contained 20 item statements, titled "Motivational Needs of Indigenous Capture Fish Farmers for Increased Protein Production Questionnaire", which was used to elicit information from the respondents. It was structured into a four-point scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD), with corresponding values of 4, 3, 2, and 1, respectively. It was validated by two experts, one from the Test and Measurement unit of the Department of Counselling and Educational Psychology and one from the Department of Agricultural Science Education, Faculty of Education, Niger Delta University, Wilberforce Island, Bayelsa State. To ascertain the reliability of the instrument, the Pearson Product Moment Correlation Coefficient statistical tool was used and a reliability index of 0.72 was yielded, indicating a good reliability. The instrument was administered to the respondents by the researcher and three trained research assistants and was retrieved immediately the respondents responded. For the analysis, the research questions were analyzed using mean and standard deviation. For a decision to be reached, items with mean scores equal or greater 2.50 were said to be agree. While, items with mean scores equal to or less than 2.49 were said to be disagree.

RESULTS

Research Question One

How will access to affordable and modern fishing equipment motivate indigenous capture fish farmers for increased protein production in Bayelsa State?

Table 1: Mean and Standard Deviation Analysis of How Access to Affordable and Modern Fishing Equipment in Fishing Communities Will Motivate Indigenous Capture Fish Farmers for Increased Protein Production in Bayelsa State

	Item Statements	$\bar{x}$	SD	Decision
1	Access to affordable fishing equipment will motivate indigenous capture fish farmers to increase their fishing effort.	3.09	0.92	A
2	Access to modern fishing equipment will motivate indigenous capture fish farmers to improve their daily fishing efficiency.	3.05	0.96	A
3	Provision of adequate fishing gear will motivate indigenous capture fish farmers to adopt improved fishing practices for higher protein output.	3.03	0.94	A
4	Accessible fishing tools will motivate indigenous capture fish farmers to work more confidently toward higher catch levels.	3.14	0.89	A

5	Modernised fishing equipment will motivate indigenous capture fish farmers to sustain increased protein production.	3.10	0.92	A
	Grand $\bar{x}$ and SD	**3.08**	**0.93**	**A**

Key: $\bar{x}$ = Mean and SD = Standard Deviation

The data presented in Table 1 revealed the mean and standard deviation scores of how access to affordable and modern fishing equipment will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. The data revealed that all the items had their mean scores ranged from 3.03 to 3.14 with their standard deviation from 0.89 to 0.96. However, based on the fact that the Grand Mean of 3.08 is greater than the criterion mean score of 2.50; this therefore implies that respondents agreed that access to affordable and modern fishing equipment will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. Relatively, the Grand Standard Deviation of 0.93 indicated that the respondents have similar opinions on how access to affordable and modern fishing equipment will motivate indigenous capture fish farmers for increased protein production in Bayelsa State.

Research Question Two

How will provision of low-interest credit schemes motivate indigenous capture fish farmers for increased protein production in Bayelsa State?

Table 2: Mean and Standard Deviation Analysis of How Provision of Low-Interest Credit Schemes in Fishing Communities Will Motivate Indigenous Capture Fish Farmers for Increased Protein Production in Bayelsa State

	Item Statements	$\bar{x}$	SD	Decision
1	Low-interest credit will motivate indigenous capture fish farmers to acquire essential fishing inputs.	3.05	0.96	A
2	Affordable credit schemes will motivate indigenous capture fish farmers to expand their fishing operations.	3.03	0.93	A
3	Financial support will motivate indigenous capture fish farmers to invest in productivity-enhancing technologies.	3.04	0.93	A
4	Access to soft loans will motivate indigenous capture fish farmers to maintain steady levels of production.	3.14	0.87	A
5	Low-interest credit will motivate indigenous capture fish farmers to work toward increased protein production.	3.09	0.87	A
	Grand $\bar{x}$ and SD	**3.07**	**0.91**	**A**

Key: $\bar{x}$ = Mean and SD = Standard Deviation

The data presented in Table 2 revealed the mean and standard deviation scores of how provision of low-interest credit schemes will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. The data revealed that all the items had their mean scores ranged from 3.03 to 3.14 with their standard deviation from 0.87 to 0.96. However, based on the fact that the Grand Mean of 3.07 is greater than the criterion mean score of 2.50; this therefore implies that respondents agreed that provision of low-interest credit schemes will motivate indigenous capture fish farmers for increased protein production in Bayelsa State.

Relatively, the Grand Standard Deviation of 0.91 indicated that the respondents have similar opinions on how provision of low-interest credit schemes will motivate indigenous capture fish farmers for increased protein production in Bayelsa State.

Research Question Three

How will improvement of environmental conditions in fishing communities motivate indigenous capture fish farmers for increased protein production in Bayelsa State?

Table 3: Mean and Standard Deviation Analysis of How Improvement of Environmental Conditions in Fishing Communities Will Motivate Indigenous Capture Fish Farmers for Increased Protein Production in Bayelsa State

	Item Statements	$\bar{x}$	SD	Decision
1	Improved environmental conditions will motivate indigenous capture fish farmers to participate actively in fishing.	2.97	0.98	A
2	Clean aquatic environments will motivate indigenous capture fish farmers to sustain their fishing engagements.	3.04	0.88	A
3	Healthy water bodies will motivate indigenous capture fish farmers to increase fishing for higher protein supply.	3.12	0.85	A
4	Reduced environmental constraints will motivate indigenous capture fish farmers to remain consistent in fishing.	3.04	0.87	A
5	Favourable ecological conditions will motivate indigenous capture fish farmers to pursue increased protein production.	3.04	0.93	A
	Grand x̄ and SD	**3.04**	**0.90**	**A**

Key: $\bar{x}$ = Mean and SD = Standard Deviation

The data presented in Table 3 revealed the mean and standard deviation scores of how will improvement of environmental conditions in fishing communities motivate indigenous capture fish farmers for increased protein production in Bayelsa State. The data revealed that all the items had their mean scores ranged from 2.97 to 3.12 with their standard deviation from 0.85 to 0.98. However, based on the fact that the Grand Mean of 3.04 is greater than the criterion mean score of 2.50; this therefore implies that respondents agreed that improvement of environmental conditions in fishing communities will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. Relatively, the Grand Standard Deviation of 0.90 indicated that the respondents have similar opinions on how improvement of environmental conditions in fishing communities will motivate indigenous capture fish farmers for increased protein production in Bayelsa State.

Research Question Four: How will ensuring safe and secure fishing environments motivates indigenous capture fish farmers for increased protein production in Bayelsa State?

Table 4: Mean and Standard Deviation Analysis of How Ensuring Safe and Secure Fishing Environments Will Motivate Indigenous Capture Fish Farmers for Increased Protein Production in Bayelsa State

	Item Statements	$\bar{x}$	SD	Decision
1	Safe fishing environments will motivate indigenous capture fish farmers to remain committed to daily fishing activities.	3.04	0.88	A
2	Community-level security will motivate indigenous capture fish farmers to explore more productive fishing grounds.	3.11	0.93	A
3	Reduced fishing-related risks will motivate indigenous capture fish farmers to intensify their fishing effort.	3.12	0.85	A
4	Safe fishing zones will motivate indigenous capture fish farmers to operate confidently in their fishing routines.	3.13	0.92	A
5	Secure fishing environments will motivate indigenous capture fish farmers to increase protein production.	3.11	0.87	A
	Grand $\bar{x}$ and SD	**3.10**	**0.89**	**A**

Key: $\bar{x}$ ***= Mean and SD = Standard Deviation***

The data presented in Table 4 revealed the mean and standard deviation scores of how ensuring safe and secure fishing environments will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. The data revealed that all the items had their mean scores ranged from 3.04 to 3.13 with their standard deviation from 0.87 to 0.93. However, based on the fact that the Grand Mean of 3.10 is greater than the criterion mean score of 2.50; this therefore implies that respondents agreed that ensuring safe and secure fishing environments will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. Relatively, the Grand Standard Deviation of 0.89 indicated that the respondents have similar opinions on how ensuring safe and secure fishing environments will motivate indigenous capture fish farmers for increased protein production in Bayelsa State.

Discussion of Findings

The study found in Table 1, that access to affordable and modern fishing equipment will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. This aligns with a broader body of evidence indicating that enabling fishers to utilise improved technologies enhances productivity, resilience, and supply stability. This position is reinforced by studies showing that modern fishing inputs significantly influence catch efficiency, income diversification and the overall sustainability of small-scale fisheries (Tilley, Wilkinson & Mills, 2022). The consistency across these findings highlights that equipment-related empowerment remains central to strengthening local fisheries and improving food and nutrition security.

One study that supports this finding demonstrates that the availability of efficient fishing gear and vessels substantially improves the volume and quality of fish landed by artisanal fishers, particularly in coastal communities where livelihoods depend on nearshore fisheries (Obuaku-Igwe & Ibeawuchi, 2021). These authors observed that when fishers have reliable

tools such as motorised boats, durable nets, and storage facilities, their catch rate increases, leading to more stable fish supplies for household consumption and local markets. This corroborates the present finding, as indigenous fishers in Bayelsa State similarly rely on equipment availability to enhance their capacity to produce protein-rich fish for community needs.

A second supporting finding reveals that access to modern fishing technologies also strengthens fishers' adaptive capacity, enabling them to overcome environmental challenges such as fluctuating water conditions and declining fish stocks (Akanni, Musa &Adeoye, 2023). The study emphasised that fishers equipped with improved gear are better positioned to explore wider fishing grounds, reduce post-harvest losses, and maintain consistent production. This evidence reinforces the idea that modern equipment is not merely beneficial but essential for indigenous fishers seeking to sustain production levels in dynamic ecological settings like the Niger Delta.

A third corroborating finding shows that mechanisation and technological enhancement in small-scale fisheries directly promote economic empowerment, which in turn motivates farmers to intensify production (Okafor, Eze & Uwadiegwu, 2020). The authors reported that affordable tools lower operational barriers, reduce labour intensity, and encourage fishers to engage more frequently in fishing activities. Their conclusion echoes the present study's finding, demonstrating that when indigenous capture fish farmers can access modern equipment at reasonable costs, they are more committed to increasing their catch volumes, thereby contributing to the availability of animal protein across communities in Bayelsa State.

In Table 2, it found that provision of low-interest credit schemes will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. This finding is supported by several empirical and conceptual findings. First, a recent study focused on fishers in Bayelsa State demonstrated that limited access to formal credit constrains technology adoption in the fishery sub-sector. The authors concluded that inadequate credit allocation "hindered progress in the fishing industry," thereby limiting the ability of fishers to upgrade gear or expand operations (Eli & Solomon, 2023). This suggests that if low-interest credit schemes were provided, fishers would likely be more motivated to invest in productive assets and consequently increase protein production.

Second, evidence from smallholder agriculture more broadly shows that credit access improves productivity and resource investment. For instance, a propensity-score matching study found that smallholder farmers who obtained credit experienced significant gains in crop productivity and annual income compared to non-users (Abedin, Nikolov & Malek, 2020). Although that study was not conducted among fishers, the logic is analogous: with credit relaxing financial constraints, rural producers, including artisanal fishers gain capacity to invest in better inputs and technologies, which enhances output, including fish for protein supply.

Third, in fisheries-specific studies, access to credit has been linked with improved technical and allocative efficiency, especially among motorised or semi-mechanised small-scale fishers. In one study, credit was identified as a key determinant of catch levels and overall technical efficiency, alongside labour and adequate storage facilities (Smith, Jones & Williams, 2010). That study observed higher catch levels among fishers who had access to credit, which supports the idea that formal financial support motivates increased fishing effort and better yields, thus contributing to greater protein output.

Together, these results reinforce the assertion that low-interest credit schemes can function as a strong motivational lever for indigenous capture fish farmers by removing financial barriers to productive investment. By enabling access to capital for improved gear,

fuel, or storage facilities, such credit stimulates greater fishing effort and efficiency, outcomes which are essential for boosting fish production and improving availability of protein for communities.

Also, in Table 3, it found that improvement of environmental conditions in fishing communities will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. This aligns strongly with contemporary research emphasising that the state of the aquatic environment remains a primary determinant of artisanal fishers' productivity and willingness to intensify fishing efforts. Studies across coastal and riverine communities have consistently shown that favourable environmental conditions such as clean water bodies, reduced pollution, and restored habitats directly influence fish stock availability and fisher motivation (Tilley, Wilkinson & Mills, 2022). This alignment underscores the centrality of ecological health in sustaining fish-based protein production in regions heavily dependent on capture fisheries.

One study that supports this finding highlighted that improving water quality and reducing hydrocarbon contamination significantly enhances fish species diversity and catch volumes among artisanal fishers in the Niger Delta (Nwankwo & Obiekwe, 2021). Their research revealed that fishers became more motivated to increase fishing activities when environmental degradation was reduced, as healthier ecosystems translated into more predictable catch outcomes. This corroborates the present finding because indigenous fish farmers in Bayelsa State face similar environmental challenges, and improvements in ecological conditions naturally strengthen their confidence to engage in continuous fish harvesting for increased protein supply.

A second corroborating finding showed that habitat restoration efforts such as mangrove regeneration and the removal of harmful debris from waterways positively influence the productivity of small-scale fishers by improving breeding and nursery habitats for key fish species (Abah, Okonkwo & Eze, 2020). The authors explained that when ecosystems begin to recover, fishers observe tangible increases in fish abundance, which motivates them to expand their fishing efforts and upgrade their livelihood strategies. This supports the current study's finding, as environmental improvements in Bayelsa State's fishing communities would similarly boost fish availability, thereby encouraging indigenous capture fish farmers to produce more protein-rich fish for local consumption.

A third supporting finding revealed that community-level environmental governance, including pollution monitoring and enforcement of sustainable fishing zones, enhances fishers' willingness to invest time and resources in fishing because it reduces ecological risks and stabilises catch patterns (Babatunde, Adeola & Ibrahim, 2023). According to the study, when fishers perceive the environment as safe, predictable, and well-managed, they become more committed to maintaining regular fishing activities. This resonates with the present finding by demonstrating that environmental improvements not only protect fish stocks but also psychologically motivate fishers to increase production to meet nutritional demands in their communities.

Finally, in Table 4, it revealed that ensuring safe and secure fishing environments will motivate indigenous capture fish farmers for increased protein production in Bayelsa State. This finding corresponds strongly with current evidence affirming that security and safety conditions significantly determine small-scale fishers' willingness to engage actively in fishing. Contemporary fisheries research consistently shows that when fishers feel protected from physical danger, conflict, and theft, their motivation to intensify fishing activities increases markedly (Ezigbo, Onuoha & Eze, 2021). This alignment suggests that secure fishing

environments in Bayelsa State would boost fishers' confidence, enabling them to sustain the level of fishing effort required to enhance protein production for local consumption.

Evidence from recent studies in coastal Nigeria confirms that persistent insecurity, particularly sea piracy, community conflicts, and gear theft reduces fishing frequency and catch volume among artisanal fishers. A recent investigation into fisher livelihoods found that improving maritime safety directly enhanced fishers' motivation to return to fishing grounds, as reduced risks allowed them to focus on harvesting activities rather than personal safety concerns (Okafor & Nwosu, 2022). This corroborates the present finding, as ensuring safe operational waters in Bayelsa State would similarly encourage indigenous capture fish farmers to increase their fishing effort, ultimately contributing to higher protein availability.

Another relevant finding demonstrates that the presence of community-based surveillance systems and strengthened enforcement of fishing rights significantly promotes fisher participation and productivity. A study on small-scale fisheries governance reported that when local fishers perceive fishing zones as well-monitored and free from criminal encroachment, they are more willing to invest in fishing trips, equipment, and longer working hours (Suleiman, Ibrahim & Gimba, 2023). This reinforces the current argument because safe and well-governed fishing environments in Bayelsa State would reduce fear of loss, encourage operational confidence, and support increased capture fish production.

A third corroborating body of evidence indicates that safety infrastructure such as functional waterways, navigational aids, and emergency response systems plays a critical role in sustaining artisanal fishers' motivation. A recent study found that adequate safety infrastructure reduces occupational hazards and enhances fishers' readiness to undertake regular fishing activities, thereby improving overall catch efficiency (Danladi & Hassan, 2021). This observation supports the finding under discussion, as establishing secure and hazard-free fishing environments in Bayelsa State would motivate indigenous capture fish farmers to commit more vigorously to fishing, leading to increased protein production that strengthens local food security.

CONCLUSION

The study concludes that access to affordable and modern fishing equipment significantly motivates indigenous capture fish farmers to enhance their fishing efforts for increased protein production. This implies that when fishers are provided with improved tools such as efficient nets, boats, and preservation facilities, their ability to operate effectively within aquatic environments is greatly enhanced. Such access reduces the physical burden of fishing, improves catch efficiency, and encourages sustained engagement in fishing activities. As a result, fishers are more willing to invest time and energy in harvesting fish, which directly translates into higher yields and improved availability of fish protein for consumption within Bayelsa State communities. The study establishes that provision of low-interest credit schemes strengthens fishers' capacity and motivation to invest in productive fishing activities that boost protein output. This indicates that financial empowerment plays a critical role in enabling indigenous capture fish farmers to overcome capital-related constraints that often limit their productivity. With access to affordable credit, fishers are better positioned to acquire essential fishing inputs, expand their operations, and adopt improved technologies that enhance efficiency. This financial support not only increases their operational capacity but also builds confidence and commitment to remain actively engaged in fishing, thereby contributing to greater fish production and improved protein supply. The study affirms that safe, secure, and environmentally improved fishing conditions strongly motivate indigenous capture fish farmers to increase their fishing engagement for higher protein production in Bayelsa State.

This suggests that the stability and quality of the fishing environment are key determinants of fisher productivity and willingness to operate consistently. When fishing communities are free from insecurity, water pollution, and ecological degradation, fishers experience reduced risk and greater assurance in their livelihood activities. Such favourable conditions encourage more frequent fishing trips, longer working hours, and better exploitation of aquatic resources, ultimately leading to increased fish output and enhanced protein availability for the population.

RECOMMENDATIONS

Providing indigenous capture fish farmers with affordable and modern fishing equipment would significantly improve their efficiency, reduce labour intensity, and strengthen their motivation to increase fishing activities. With better tools such as improved nets, boats, and storage facilities, fishers can operate more effectively and reduce post-harvest losses. This, in turn, would enhance overall fish output and ensure a more stable supply of protein for households and communities across Bayelsa State.

Implementing low-interest credit schemes for fish farmers would enable them to access the financial resources needed to invest in essential fishing inputs and expand their operations. Many fishers are constrained by limited capital, which restricts their productivity and growth. By easing these financial barriers, fish farmers would be better positioned to adopt improved technologies, increase their catch capacity, and sustain higher levels of fish production, thereby strengthening protein availability in the state.

Improving environmental conditions and ensuring safe, secure fishing environments would create a more stable and productive atmosphere for indigenous capture fish farmers. Cleaner waterways, reduced pollution, and effective security measures would lower operational risks and encourage more consistent fishing activities. As fishers gain confidence in the safety and sustainability of their environment, their engagement in fishing is likely to increase, leading to higher fish yields and improved protein supply within local communities.

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