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Baseline Survey of Smallholder Fish Farming Enterprise in Moro Local Government, Nigeria

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***Abstract**: Fish farming could improve livelihood of rural people and enhance community development. This study, thus, investigated engagement and interest of rural people in fisheries activities in Moro Local Government Area of Kwara State. 120 questionnaires, which were validated by three co-lecturers and with reliability co-efficient of 0.70, were randomly administered in three selected villages. Response was received from 102 people and the data were analysed using descriptive statistics. Results indicated that about 60% of the respondents, most of which were married, earned monthly income ≤ N18, 000.00. Only 30.4% were engaged in fisheries activities such as fish hunting, fish processing and marketing, of which 2.0% were engaged in fish farming. 96 respondents indicated their interest in fisheries activities out of which 93.8% were willing to engage in fish farming. Lack of technical skills and capital were the main constraints to fish farming by these people. Training on fish farming techniques as well as access to credit facilities of the rural people was recommended. Fish farming could serve as means of employment and income generation resulting to poverty alleviation among the rural people.*

***Keywords**: engagement, fish farming, interest, poverty alleviation, rural people*

I. Introduction

Fish is the major source of cheap high quality proteins vital for healthy populace in the developing world. It has the highest level of easily metabolised high quality protein, fats, vitamins, calcium, iron and essential amino acids when compared with other sources of animal protein such as poultry and beef. Fish consumption is highly relished among people of all classes and ages in that the fish is less tough and more digestible when compared to beef, mutton chicken and bush meat. Fish as a source of rich food for the poor can play a crucial role in improving the food security and nutritional status of the millions of the people in Africa and other developing part of the world [1]. Global consumption of fish as food has reached an all-time high of nearly 17 kg per person in 2008, supplying over 3 billion people with at least 15 percent of their average animal protein intake. However, Africa is the least in the consumption of fish [2]. Most of the health related problems in developing world such as abnormal development, reduction in human productivity, high incidence of infant mortality, malnutrition and diseases have been attributed to low intake of good quality animal protein, hence production of fish is very imperative to the good health of the nations in the developing world.

Fish farming is uniquely placed to reverse the declining supplies from captured fisheries and the activity has notable potentials for new livelihood opportunities, providing the mechanism for lower priced fish, enhanced nutritional security and employment for poor communities by servicing urban markets [3]. Aquaculture production has increased from 49.9 million tonnes in 2007 to 55.1 million tonnes in 2009.World aquaculture production in 2010 was 60 million tonnes, with an estimated total value of US$119 billion. Nigeria as the second largest aquaculture producer in Africa only produced 200, 535 tonnes [4] in 2010.There is huge gap between demand and production of fish in Nigeria, some 1,380,000mt. In 2010 alone, for instance, Nigeria's fish demand stood at 2.66 million metric tons, and the country had to spend 100 billion naira on fish importation annually [5].

Aquaculture provides opportunities to improve livelihood prospects, ensures resource sustainability and foster economic growth [2, 6]. Poverty alleviation and improvement of livelihoods of the poor has always been one of the major objectives of all the aquaculture projects. [7] reported that fish farming is viable, sustainable and a profitable business which is now also being patronized by rice, corn and vegetable farmers as an alternative source of their income to help improve the living conditions of their respective families.

Moro Local Government Area is one area that showed little or no fish farming activities. As part of community outreach, the objective of this study was to investigate the level of engagement and interest of the rural people in fish farming enterprise.

II. Materials And Methods

2.1. Study Area

This study was carried out among people in Malete, Elemere and Shao villages in Moro Local Government Area. Moro Local Government Area has an area of 3, 272km^2 in Kwara state. Kwara state is located within the middle belt, Guinea Savannah region of Nigeria. The state experiences rainy and dry seasons. The rainy season starts from March and ends in October while the dry season begins in November and ends in early March. The total annual rainfall in the state ranges from 800mm to 1,200mm in the northwest and 1,000mm to 1,500mm in the southeast. The mean minimum temperature range of the state is 24-32°C while the mean maximum range is 35-38°C [8].

2.2. Data Collection and Analysis

The three villages were randomly selected. Data were collected using structured questionnaires, which were validated by three co-lecturers and with reliability co-efficient of 0.70. One hundred and twenty (120) questionnaires were randomly distributed in the three villages, out of which one hundred and two (102) were retrieved with response. The questionnaires consisted of demographic information as well as the current engagement of the rural people in fisheries activities and their interest in fish farming. The information obtained from the questionnaires was analysed using descriptive statistics.

III. Results

3.1. Personal Characteristics of the Respondents

3.11. Sex

Data in TABLE 1 showed that the total number of male respondents (90) was seven times more than the number (12) of the female.

Table 1: Personal Characteristics of the Respondents

Variables	Frequency	Percentage
Sex		
Male	90	88.2
Female	12	11.8
Age (years)		
Below 20	4	3.9
20-29	27	26.5
30-39	25	24.5
40-49	26	25.5
50-59	17	16.7
Above 60	3	2.9
Educational Level		
No Formal Education	6	5.9
Koranic Education	1	2.0
Primary Education	16	15.7
Adult Literacy	2	2.0
Secondary Education	28	27.5
Tertiary Education	49	48.0
Marital Status		
Single	23	22.5
Married	79	77.5
Occupation		
Farming	39	38.2
Artisan	9	8.8
Civil Servant	42	41.2
Trading	10	9.8
Others	2	2.0
Monthly Income(₦)		
Below 5,000.00	37	36.3
5,000.00 – 10, 000.00	8	7.8
10, 000.00 – 15, 000.00	9	8.8
15, 000.00 – 18, 000.00	7	6.9
Above 18, 000.00	35	34.3
No response	6	5.9

Field Survey, 2012

3.12. Age

3.9% of the respondents were below twenty (20) years of age while majority of them, 76.5%, were within 20 – 49 years. 16.7% of the respondents were in the age group 50-59 while very few of them, 2.9%, were above sixty years as indicated in TABLE 1.

3.13. Educational Level

Out of the one hundred and two respondents (102), six (6) of them did not have any formal education, sixteen (16) had primary education, two (2) had adult education while twenty eight (28) had secondary education. People with tertiary education constituted the highest (49) category as shown in TABLE 1.

3.14. Occupation

All the respondents were involved in farming activities. 32% of the respondents took farming as the main occupation while others take it as secondary. 8.8% were artisan, which engaged in fishing in the surrounding freshwater bodies.9.8% were traders while many of them, 42%, were civil servants as shown in TABLE 1.

3.15. Monthly Income

As shown in TABLE 1 many of the respondents , 36.3%, earned below ₦5, 000.00/month , 7.8% earned ₦ 5,000.00 – ₦ 10,000.00/month, while those who earned within ₦ 10, 000.00 – ₦ 15, 000.00 and ₦ 15,000 – ₦ 18, 000.00 monthly were 8.8% and 6.98% respectively. Only 34.3% of the respondents earned above ₦ 18, 000.00/month.

3.2. Findings on the Engagement and Interest of the Participants in Fisheries Activities

Out Of One hundred and two (102), 31 constituting 30.4%, of them are engaged (E) in fisheries activities while the remaining 71 (69.6%) did not engage (NE) in fisheries activities (Fig. 1). Out of the 31

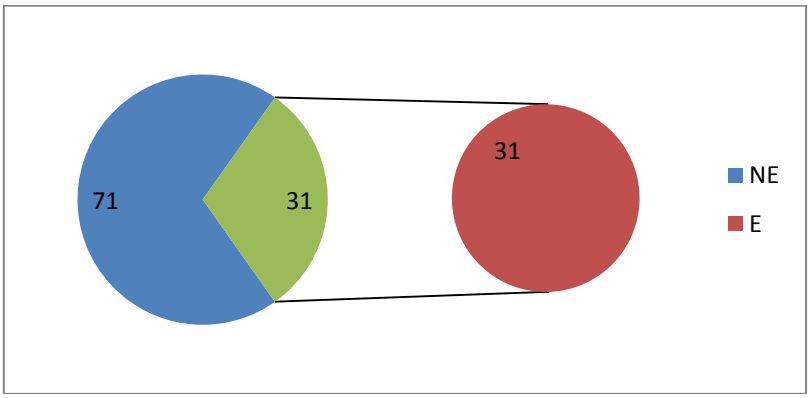


Figure 1: respondents' engagement in fisheries activities

respondents (Fig. 1) who indicated that they were engaged (E) in fisheries activities 2 were engaged in fish marketing, 6 in fish processing, 21 in fish hunting while only 2 were engaged in fish farming constituting 2.0%, 5.9%, 20.6% and 2.0% respectively.

Types of fish processing common in the area are drying, smoking and freezing. 63.7% of the respondents usually bought frozen fish while 30.4% usually bought smoked fish. 90% of the respondents indicated that there is demand for fresh/farmed fish in the area. 94.1% of them indicated their interest in fisheries, out of which 93.8%, 3.1% and 3.1% were interested in fish farming, fish processing and fish marketing respectively as shown in Fig. 2.

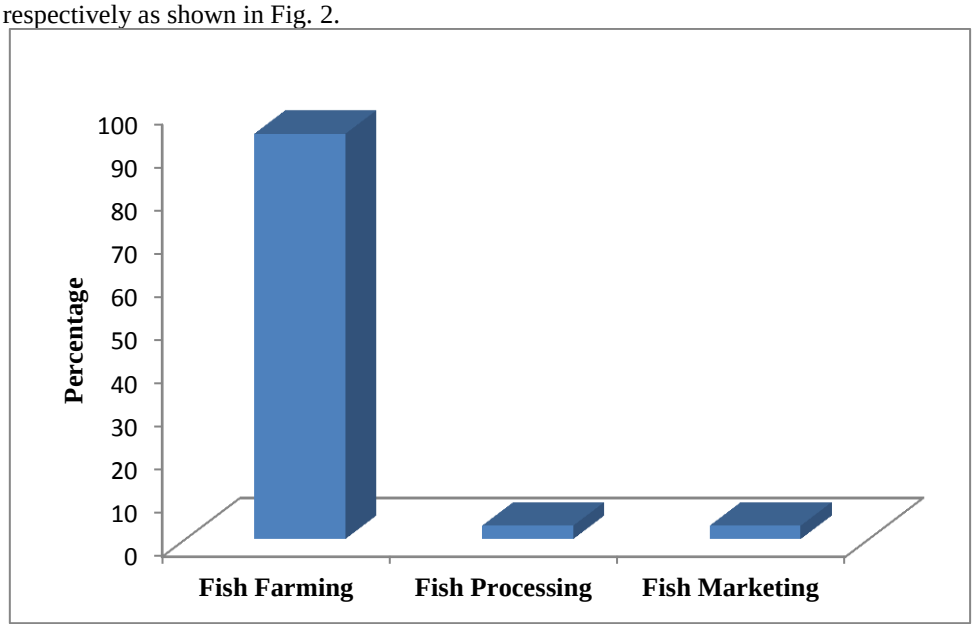


Figure 2: respondents' areas of interest in fisheries

3.3. Constraints to Fish Farming

Some of the identified problems why the respondents have not started fish farming are inadequate capital, inadequate water and lack of skills involved in fish farming. Lack of technical skills involved in fish farming was ranked as the highest constraint followed by inadequate capital while the least was inadequate water.

IV. Discussion

About 60% of the respondents, mostly married, in this study did not earn more than ₦18, 000.00 monthly. This is an indication of poverty. [9] using dollar per day measure reported rural poverty incidence of 60.6% in Nigeria. Low level of income of respondents can be a hindrance to their engagement in fish farming which is capital intensive. Lack of technical know-how has been ranked as the highest limiting factor in Nigeria's aquaculture development, even in the urban area [10]. [11] and [12]also reported lack of capital, lack of technical knowledge, inadequate water due to multiple use of pond water as constraints to fish farming. Lack of capital can be linked to the inadequate income earned by these rural people. Lack of technical skills in fish farming which was ranked the highest constraint among the respondents could be that they did not study fisheries related courses despite their tertiary education.

Continuous harvesting of fish from Nigerians water bodies by artisans and fish hunters without proper fisheries management will result to depletion. Out of the 31 respondents who were engaged in fisheries activities, 21 (67.7%) of them were fish hunters. [13] reported reduction in catch per unit effort over a period of five years in cross river state, which was due to heavy fishing pressure on the available fish stocks. Nigeria cannot rely on captured fisheries to bridge the existing gap between fish demand and supply in the country.

Most of the respondents (about 90%) are literate, while more than 75% fall within the middle age group of 20-49 years who are energetic. Involvement of these people in fish farming is an indication that they could make positive contributions to enhancing fish productivity because they will be able to accept and adopt any profitable innovations and keep proper records. A high percentage (93.8%) of the respondents indicated their interest in fish farming. [14] similarly reported a high interest rate (90.4%) of artisanal fishermen who were willing to engage in fish farming enterprise. This high interest rate could result to greater participation and better commitment of these people to fish production. The rural people can play important role in supplying fish needs of Nigerians. Their contribution can have positive impact in the growth of fish production to meet the fish demand in the country as well as contributing to sustainability of their livelihood and enhancing improved standard of living of the people and community development.

V. Conclusion

In conclusion, this research has shown some personal characteristics of rural people in Moro Local Government Area of Kwara State, Nigeria. Most of the respondents were interested in fish farming. The major constraints facing these people are lack of technical skills and lack of capital. If these rural people are helped to overcome these constraints and actively participate in fish farming with proper management, poverty level in the area will be alleviated through employment generation, additional income, food security and overall national growth in fish production.

VI. Recommendations

i. There is the need for the involvement of a variety of stakeholders; fisheries experts in Federal and State Ministries of Agriculture, universities and non-governmental organisations to assist in training interested members of rural communities on basic techniques involved in fish farming.
ii. Government and non-governmental organisations should also assist the rural people to have access to credit facilities in terms of loan without interest or with feasible and affordable interest.
iii. Government and non-governmental organisations can also assist in establishing fish farm projects randomly in rural areas as start up for interested members who are ready to be committed to the enterprise from which they can grow, with proper monitoring and supervision.
iv. Captured fisheries alone is not sustainable to meet Nigerians' demand for fish, hence effort should be made to increase fish production through higher involvement in fish farming.

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