

INFORMATION NEEDS OF FISH FARMERS IN ILORIN METROPOLIS, KWARA STATE, NIGERIA

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ABSTRACT

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The study investigated the management practices employed in fish farming and the constraints militating against effective fish production in Ilorin Metropolis, Kwara State. Structured questionnaire was used to elicit information from one hundred and twenty fish farmers that were randomly selected from two fish farmers association existing in the area. Data obtained were analyzed using descriptive (frequency, percentages and mean scores) and inferential (Pearson product moment correlation) statistics. Findings from the study showed that respondents had average age of 46.23 years, 82.8% indicated different levels of formal education while more than 2/3rd of them had between 1 to 20 years of fish farming experience. Information was mostly needed in fish marketing strategy. Respondents indicated lack of sufficient capital as a major challenge in fish farming. Correlation analysis revealed significant relationship between age ($r = -0.821$, $p = 0.001$); educational level ($r = -0.718$, $p = 0.000$); years of experience ($r = -0.870$, $p = 0.003$) of the fish farmers and their information needs. The implication of the findings of the study is that information is urgently needed by the fish farmers in areas such as fish marketing, processing and preservation, brood stock selection and water quality management. The study therefore recommends the need for extension agencies to provide robust and timely information in the areas of need highlighted by the fish farmers in order to increase production efficiency and output of the fish farmers.

Keywords: Information needs, Fish, Fish farmers, Aquaculture

INTRODUCTION

Fish is one of the most diverse groups of animals that live and breathe in water by means of gills, known to man with more than 20,000 species. There are more species of fish than the other vertebrate (FAO, 1997). Nigerians are high fish consumers and offer the largest market for fish and fisheries product in Africa (Olaoye and Oloruntoba, 2011). Aquaculture has prospects in alleviating under-nutrition and poverty. As a matter of fact, fishery sub-sector provides employment opportunities for young and old people due to the low capital outlay required to take-off. It can also serve as a source of foreign exchange while also serving as a viable alternative remedy to the already depleted capture fisheries. Aquaculture can be operated on a small scale, utilizing family labour or at medium and high cost under intensive operation. This provides opportunities for both the poor and the rich to improve their standards of living through incomes generated from fishery production. Fisheries occupy a unique position in the agricultural sector of the Nigerian economy. The contribution of the fisheries sub-sector to agriculture GDP was estimated as 4.0% in the year 2007, out of the total estimate of 40% being contributed by agriculture to GDP (FDF, 2008). Fish demand in Nigeria is put at about 1.2 million metric tons per annum, and the total domestic fish production can only supply 511,700 metric tons, leaving a shortfall of 680,000 metric tons of fish annually (Nwankwo, 2005). To meet the local demand, government imports fish worth of N97 billion annually (Adekunle, 2013). This indicates the large deficit in fish supply in Nigeria. The inability of production to meet demand can be attributed to a number of constraints which include inadequate capital, high cost of feed and inadequate supply of quality fingerlings. However, the main being inadequate provision of information and training to the small scale fish farmers, as well as the scarcity of guidelines for existing fish farmers with little or no knowledge of fresh water fauna. Hence, the average fish farmer is ill equipped for successful and sustainable fish production (Adereti et al, 2006). Information on relevant training needed by fish farmers are essentially generated and provided by government research stations and Non-Governmental-Organizations (NGOs). In spite of the effort being made by the various extension organizations to close the gap in the production capacity in this sector of the Nigerian economy, much work is still required in the area of capacity building to raise productivity through improved management practices (World Bank, 2010). This study is therefore poised to provide solution to challenges in this sector of the economy by attempting to highlight important areas of training needs for fish farmers. The general objective of the study is to determine fish farmer's information needs in Ilorin Metropolis, Kwara State while the specific objectives are to:

describe the socio-economic characteristics of fish farmers, determine the management practices carried out by the respondents in fish farming production, determine the constraints faced by the respondents that is militating against effective fish production.

This will allow the stakeholders involved in agricultural development to address the areas where information is needed and the constraints militating against effective fish production thus alleviating the problems facing the fishery sub-sector.

METHODOLOGY

The study was carried out in Ilorin which is the capital of Kwara State, Nigeria. The state is geographically located between latitude $7^{\circ} 20'$ and $11^{\circ} 05'$ north of the equator longitude $2^{\circ} 05'$ and $6^{\circ} 45'$ east of the prime meridian (Ogunlade, Oladele and Babatunde 2009). It is located in the North Western Nigeria and because of this unique geographical location; the state is referred to as the “gateway” between the north and south of the country. Ilorin city has a population of 847,582 and it is the confluence of cultures, populated by Yoruba, Hausa, Fulani, Nupe, Baruba and other Nigerians.

The population for this study comprised of all fish farmers in Ilorin metropolis. A well structured questionnaire was used to elicit information from one hundred and twenty (120) fish farmers that were randomly selected from two fish farmers association existing in the area. In this study, data that was collected include the socio-economic characteristics of fish farmers and the management practices they employ in fish farming, while the dependent variables were the information needs of the fish farmers and the constraints against effective fish production.

These variables were measured as follows:

Management practices carried out

The farmers were presented with seven (7) management practices carried out in fish farming to determine whether they carry it out or not.

Information needs of fish farmers

Respondents were presented with eleven (11) different items on their information needs and were asked to rate the item on 4-point likert need scale of highly needed (4); moderately needed (3); rarely needed (2); and not needed (1)

Perceived Constraints against effective fish production

The fish farmers were presented with eleven (11) listed points of the various constraints they may face and they were asked to rate the items on a 5-point likert type scale of Strongly agree (5); Agree (4); Strongly disagree (3); Disagree (2) and Undecided (1);

Pearson Product Moment Correlation analysis was used to determine the relationship between the socio-economic characteristics of the respondents and their information need on fish farming and also the perceived constraints militating against effective fish farming.

RESULTS AND DISCUSSION

Socio-economic characteristics of Respondents

Socio-economic characteristics may influence the fish farmers' production decision as well as their overall efficiency in production. Table 1 presents the socio-economic characteristics of the respondents. As shown in Table 1, the mean age of the respondents was 46 years. The oldest respondent was aged 78 years while the youngest was aged 23 years. Majority (80%) of the respondents were below 60 years of age. This age distribution of the respondents may give them more leverage in fish farming as they generally fall within their active and more productive years. The gender of an individual can influence the type and quality of work carried out by the individual. The results obtained showed that there were more males (64.2%) involved in fish farming than their female (35.8%) counterpart. This might be as a result of the nature of fish farming which involves a lot of tasks requiring more physical and mental coordination.

In traditional agricultural production, the amount of family labour available is usually closely related to the marital status of the farmer. Table 1 shows that majority (73.3%) of the respondents were married. This suggests that the married farmers in the sampled area might have a reasonable family size providing more family labour compared to those with different marital status. Majority (60%) of the respondents had a household size of between 5 – 9 persons, and the mean household size was 5 persons. This figure is in consonance with the 5 persons per rural household as established by the National Bureau of Statistics (NBS, 2006). A farmers' level of education is expected to influence his innovativeness and ability to make decisions on various aspects of farming. Education is therefore highly important for sustainable agricultural growth and development. As shown in Table 1, a greater percentage of the fish farmers (62.5%) had tertiary education. This implies that the respondents are not likely to have much difficulty in understanding and adopting modern agricultural technologies and innovation. Farming experience generally correlates with acquisition of improved skills in agricultural production. The result

of this study as presented in Table 1 shows that majority (95%) of the respondents had fish farming experience ranging from between 1 and 20 years while the average years of experience was 9 years. This indicates that the farmers have some years of reasonable in fish farming which might have facilitated their acquisition of some good skills in fish farming production.

Table 1: Socio-economic characteristics of the respondents

Age	Frequency	Percentage	Mean
23-40	45	37.5	46.23yrs
41-58	51	42.5	
59-76	23	19.2	
77 and above	1	0.8	
Total	120	100.0	
Sex			
Male	77	64.2	
Female	43	35.8	
Total	120	100	
Marital status			
Single	23	19.2	
Married	88	73.3	
Divorced	2	1.7	
Widowed	7	5.8	
Total	120	100	
Household size			
0-4	42	35	5 persons
5-9	72	60	
10-14	6	5	
Total	120	100	
Educational level			
No formal education	10	8.3	
Primary school	10	8.3	
Secondary school	35	20.3	
Tertiary school	75	62.5	
Total	120	100	
Years of experience			
1-20	114	95	9.34yrs
21-30	2	1.7	
31-40	2	1.7	
41-50	2	1.7	
Total	120	100	

Source: Field Survey, 2013

Management practices carried out by the fish farmers

The fish farmers were asked to indicate the management practices they carry out in fish farming production. Results from table 2 revealed that all the farmers were involved in cleaning their ponds and more than half of the farmers were involved in other management practices like water quality maintenance (91.7%), disease control (70.8%), fertilization (62.5%), weeding (58.3%) and liming (50%). However, it is worthy of note that only very few of the farmers were involved in processing (8.3%) and preservation (20.8%) of their fish produce. This might be an indicator to the fact that the farmers have very little knowledge and information about the basic intricacies involved in fish processing and preservation.

Table 2: various management practices carried out among the respondents

Management practices	Frequency	Percentage
Cleaning	120	100
Fertilization	75	62.5
Water quality maintenance	110	91.7
Weeding	70	58.3
Disease control	85	70.8
Liming	60	50
Processing	10	8.3
Preservation	25	20.8

Source: Field Survey, 2013; NB: Multiple response.

Areas of information needs on fish farming production

The fish farmers highlighted some areas of information needs on fish farming production. Table 3 shows that the farmers highly needed training on fish marketing ($\bar{x} = 3.26$), fish processing ($\bar{x} = 3.18$), and fish preservation ($\bar{x} = 3.09$) as they ranked 1st, 2nd, and 3rd respectively while the respondents moderately needed training on water quality management ($\bar{x} = 2.98$), brood stock selection ($\bar{x} = 2.93$) and record keeping ($\bar{x} = 2.90$) which ranked 4th, 5th, and 6th respectively. The implication of respondents' high demand for training in fish marketing, processing and preservation reveals that the farmers are not sufficiently knowledgeable in these areas and this might make them susceptible to poor marketing strategy and post harvest losses which might hinder their level of profit maximization in fish farming production.

Table 3: Information needs of fish farmers

Information/training	Highly needed	Moderately needed	Needed	Not needed	Mean	Rank
Fish Marketing	63(52.5%)	30(25%)	22(18.3%)	5(4.2%)	3.26	1 st
Fish Processing	57(47.5%)	32(26.7%)	26(21.7%)	5(4.2%)	3.18	2 nd
Fish preservation	57(47.5%)	24(20%)	32(26.7%)	7(5.8%)	3.09	3 rd
Water Quality Management	44(36.7%)	41(34.2%)	24(20%)	11(9.2%)	2.98	4 th
Brood Stock Selection	39(32.4%)	41(34.2%)	33(27.5%)	7(5.8%)	2.93	5 th
Record Keeping	39(32.5%)	35(29.2%)	41(34.2%)	5(4.2%)	2.90	6 th
Source of Fingerlings	33 (27.5%)	44(36.7%)	39(32.5%)	4(3.3%)	2.88	7 th
Identification of Disease Symptoms	44 (36.7%)	30(25%)	24(20%)	22(18.3%)	2.80	8 th
Feed Formulation	36(30%)	33(27.5%)	41(34.2%)	10(8.3%)	2.72	9 th
Pond Construction	44(36.7%)	18(15%)	30(25%)	28(23.3%)	2.65	10 th
Fish Transportation	35(29.2%)	27(22.5%)	29(24.2%)	29(24.2%)	2.57	11 th

Source: Field Survey, 2013

Constraints militating against effective fish production

The respondents rated some constraints they perceive to be militating against effective fish production in the study area. Results from table 4 reveal that lack of capital ($\bar{x} = 4.60$), high cost of fish feed ($\bar{x} = 4.44$), difficulty in procuring good fingerlings ($\bar{x} = 3.70$), poor government policies on fish production ($\bar{x} = 3.51$), and lack of readily available market for fish ($\bar{x} = 3.50$) which were rated 1st, 2nd, 3rd, 4th and 5th respectively were the major perceived challenges against fish production in the area.

Table 4: Constraints of effective fish production

Perceived challenges against effective fish production	Strongly agreed	Agreed	Disagreed	Strongly disagreed	Undecided	Mean	Rank
Lack of capital	87(72.5%)	18(15%)	15(12.5%)	0	0	4.60	1 st
High cost fish feed	84(70%)	15(12.5%)	11(9.2%)	10(8.3%)	0	4.44	2 nd
Difficulty in procuring good fingerlings	38(31.7%)	44(36.7%)	12(10%)	16(13.3%)	10(8.3%)	3.70	3 rd
Poor government policies on fish production	48(40%)	22(18.3%)	15(12.5%)	13(10.8%)	22(18.3%)	3.51	4 th
Lack of readily available market for fish	32(26.7%)	27(22.5%)	35(29.2%)	15(12.5%)	11(9.2%)	3.50	5 th
Scarcity of good water quality in farm area	44(36.7%)	16(13.3%)	23(19.2%)	18(15%)	19(15.8%)	3.45	6 th
Lack of technical skill	24(20%)	39(32.5%)	24(20%)	21(17.5%)	12(10%)	3.35	7 th
Incidence of disease/pest	30(25%)	38(31.7%)	15(12.5%)	13(10.8%)	24(20%)	3.31	8 th
Scarcity of feed	21(17.5%)	39(32.5%)	24(20%)	18(15%)	18(15%)	3.23	9 th
Inability to expand pond size	18(15%)	39(32.5%)	24(20%)	25(20.8%)	14(11.7%)	3.18	10 th
Stealing of fish is common	30(25%)	15(12.5%)	0	38(31.7%)	22(18.3%)	2.82	11 th

Source: Field Survey, 2013

Relationship between selected socio-economic characteristics of Respondents and their information need

Pearson correlation analysis in table 5 shows that age ($r = -0.821$, $p = 0.001$), educational level ($r = -0.718$, $p = 0.000$) and years of experience ($r = -0.870$, $p = 0.003$) were significant and negatively related to the information need of the fish farmers. The implication of this result is that the more the educational level, years of experience and age of the fish farmers the lesser the information needed as regards fish farming production. This is as a result of the fact that the farmers are expected to have acquired the necessary basic knowledge over the years for effective fish production.

Table 5: Relationship between selected socio-economic characteristics and their information need

Variable	Coefficient (r)	P-value	Remarks
Age	-0.821**	0.001	Significant
Educational level	-0.718**	0.000	Significant
Years of experience	-0.870**	0.003	Significant
Household size	-0.061	0.505	Not significant

** Correlation is significant at 0.05 level (2-tailed); Source: Data analysis

Relationship between selected socio-economic characteristics of respondents and the perceived constraints to effective fish production

The result of the correlation analysis in table 6 revealed vividly that age ($r = -0.822$, $p = 0.023$), educational level ($r = -0.699$, $p = 0.002$) and years of experience ($r = -0.864$, $p = 0.001$) were significant and negatively related to the perceived constraints militating against effective fish production. This reveals that as the years of experience, educational level and age of the farmer increases, the lesser the constraints encountered militating against effective fish production. This is because the farmer would have being equipped in the course of the years with the skills and strategies needed to cope and surmount such constraints.

Table 6: Relationship between selected socio-economic characteristics of respondents and the perceived constraints to effective fish production

Variable	Coefficient(r)	p-value	Remarks
Age	-0.822**	0.023	Significant
Educational level	-0.699**	0.002	Significant
Years of experience	-0.864**	0.001	Significant
Household size	-0.606	0.512	Not significant

** Correlation is significant at 0.05 level (2-tailed); Source: Data analysis

CONCLUSION AND RECOMMENDATION

Based on the findings of this study, it was evident that fish farmers in the study area lack adequate information on several management and production practices involved in fish farming production. They are still faced with a lot of constraints which is hindering them from maximizing the potentials embedded in fish production. Therefore, in order to ensure that the aquaculture sector contributes maximally its own quota to agriculture and economic development in Nigeria, the study recommends that extension agencies should provide a robust capacity building for fish farmers in the areas of information need highlighted. They should ensure that the fish farmers have access to timely and adequate information that will equip them with the required knowledge on fish marketing, processing and preservation, water quality management, source of good fingerlings for stocking and brood stock selection. Furthermore, government and other relevant NGOs should provide assistance for fish farmers by granting them credit facilities in form of loans and subsidies on fish feeds in order to empower them to increase their production output which will help bridge the gap between demand and supply of fish products. These will lead to a rapid transformation of the aquaculture sector thus enhancing the development of agriculture in Nigeria.

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