

Full Length Research Paper

Perception of small scale fish farmers on agricultural extension services delivery towards aquaculture development in Oyo State, Nigeria

OLAOYE O. Jacob¹, ASHLEY-DEJO Samuel S^{2*}, ADELAJA Olusunmbo A. B.² and IKILILU Abdulraheem¹

¹Agricultural Media Resources and Extension Centre, Federal University of Agriculture, P.M.B 2240, Abeokuta, Ogun State, Nigeria.

²Department of Aquaculture and Fisheries Management, Federal University of Agriculture, P.M.B 2240, Abeokuta, Ogun State, Nigeria.

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This study evaluates perception of small scale fish farmers on agricultural extension services delivery towards aquaculture development in Oyo State, Nigeria. Multi stage random sampling techniques were used to select two hundred and twenty two fish farmers in the state. A well-structured interview schedule was randomly administered to 222 fish farmers from 4 Agricultural Extension Zones in Oyo State. Data collected were analysed using descriptive and inferential statistics. The study revealed majority (49.1%) of the respondents were within the age range of 41 – 50 years, almost 50.0% of the respondents sourced extension information from the ADPs, 88.7% were aware of extension service in Oyo State, 73.4% contact extension agent fortnightly. Chi square analyses showed that there was no significant association between nature of extension service available and sex ($\chi^2 = 66.82$, $p > 0.05$), but there was a significant association between nature of extension service available and age ($\chi^2 = 48.67$, $p < 0.05$), marital status ($\chi^2 = 29.70$, $p < 0.05$) and educational level ($\chi^2 = 20.25$, $p < 0.05$). It was concluded that extension agencies should be well funded to enable effective communication and dissemination of improved innovations.

Key words: Fish farmers' perception, agricultural extension services, information, Oyo State.

INTRODUCTION

Agricultural extension service which is one of the pillars for development plays a significant role in agricultural and rural development in Africa. It serves as the source of information on new technologies for farming communities which when adopted can improve production, incomes and standards of living. Moreover, agricultural extension provides a channel through which farmers' problems could be identified for research and formulation of agricultural policies to the benefit of rural communities. The extension system constitutes a framework through which farmers are organized into functional groups in order to gain access to production resources such as credit, inputs, marketing services and information on government development programmes (DFID, 2001). In recent time, agricultural development in Nigeria depends

so much on extension services delivery which aims at providing farmers with necessary education, skills and technical information to enable them to make effective farm management decisions to enhance their productivity. An effective extension service delivery is therefore an essential factor for the accelerated development of agriculture in developing countries (Nigeria) (Ashley-Dejo, 2012).

Agricultural extension service is a package/system designed to assist farmers through dissemination of

*Corresponding author. E-mail: ashleydejosamuel@gmail.com.
Tel: 234-803-658-4136.

improved innovations, increase farmers production efficiency and income, better their levels of living and lift the social and educational standards of the farmers. The main objective of agricultural extension is the communication of useful information to people and then helping them to learn how to use the information to build a better life for themselves, their families and communities (Ajieh, 2006).

Aquacultural extension can be seen as the promotion of any aspect of fish farming technology development: "how farmers acquire the necessary resources, how new technologies evolved, what influences their choice, the kind of support a given technology requires, how its adoption can be financed and encouraged, and the kind of protection it entails". Some of the problems facing small scale fish production in Nigeria are innovation adoption, inadequate research and extension, high cost of fish feed, post-harvest losses due to poor handling, processing, preservation and storage technologies, fish seed, lack of credit and insurance cover for fisheries enterprises (Olaoye, 2010). Stagnation and decline in capturing fisheries has put pressure on fish farming as an alternative to meet increase in fish demand. Intensification of aquaculture practice is associated with progress in technologies, efficient extension delivery and economic benefit to operators (Ashley-Dejo, 2012). This is an indication that effective agricultural extension service delivery is sine qua non to agricultural development of any country. Dissemination of agricultural information and practices are central roles of agricultural extension which ensures that proven technologies are disseminated to fish farmers for adoption process (Asiabaka, 2008).

Aquacultural extension, one of the pillars for development, plays an important role in aquacultural development in Oyo State, Nigeria. Agricultural Extension is an educational process and it brings about behavioural change in farmers and other stakeholders. It also serves as the source of information on new technologies for fish farmers. Most serious constraint to agricultural development in Nigeria and in Africa as a whole is the limited access to agricultural information and that information is a key resource in the function and attainment of development goals of the extension service. It is also a veritable tool needed by the farmers to be acquainted with the latest agricultural technologies and innovations (Olaoye, 2010).

This study aims at giving some insight into the perception of small scale fish farmers on agricultural extension services delivery towards aquaculture development in Oyo State, Nigeria. Specifically, the study seeks to investigate the socio-economic characteristic of the fish farmers, determine the sources of extension services available, ascertain the nature of extension services available and determine fish farmers' preferences for the nature of extension services available.

Hypothesis of the study

There is no significant association between the socio-economic characteristics of the small scale fish farmers and nature of extension services available

MATERIALS AND METHODS

The study area

This study was conducted in Oyo State, South - West Nigeria. Oyo State is one of the thirty-six states of the Federal Republic of Nigeria. The state has an estimated population of over 5,591,589 million people (National population Commission, 2006). It is located in the rainforest vegetation belt of Nigeria within longitude 7°23'47"N and 3°55'0"E. It is bounded in the south by Ogun State, in the north by Kwara State, in the west by the Republic of Benin, and in the east by Osun State. In concerted efforts to revitalize agriculture in the state and thereby boost food production, the State Government has established the state-wide Oyo State Agricultural Development Programme (OYSADEP), which is an offshoot of the defunct Oyo North Agricultural Development Project (ONADEP). Oyo State is divided into four agricultural extension zones namely: Ibadan/Ibarapa, Ogbomoso, Oyo and Saki.

Data collection, sampling technique analytical procedure

The study covered the four agricultural extension zones in the state; multi-stage random sampling technique (purposive and random sampling) was used for the selection of two hundred and twenty-two fish farmers throughout the four agricultural extension zones in the state. Respondents were interviewed using their responses as primary data; secondary data were obtained from records provided by Oyo State Agricultural Development Programme. A well-structured interview schedule was developed and used in the collection of the data. The interview schedule was divided into different sections based on the objectives of the study. Data obtained from the field were subjected to descriptive and inferential statistics.

Analytical techniques

The primary data obtained from the structured interview schedule were subjected to descriptive and inferential statistical analysis. Descriptive statistics for this study include frequency, percentages, mean, standard deviation, hypotheses and profitability ratios.

RESULTS AND DISCUSSION

Table 1 shows the distribution of small scale fish farmers

Table 1. Percentage distribution of the socio-economic characteristics of small scale fish farmers in Oyo State (N = 222).

Variable	Frequency	Percentage	Mean	Std
Age (years)				
Below 20	0.0	0.0		
21-30	11	5.0		
31-40	84	37.8		
41-50	109	49.1		
Above 50	18	8.1	46	0.709
Sex				
Male	187	84.2		
Female	35	15.8		
Marital status				
Single	25	11.3		
Married	169	76.1		
Widowed	20	9.0		
Separated	8	3.6		
Educational status				
No formal Education	7	3.2		
Adult Education	0	0.0		
Primary Education	44	19.8		
Secondary Education	62	27.9		
Tertiary Education	88	39.6		
Others	21	9.5		
Fish farming experience (years)				
Less than 5	35	15.8		
5 – 10	79	35.6		
11 – 15	90	40.5		
Above 15	18	8.1	9.3	0.850
Cooperative society				
Yes	139	62.6		
No	83	37.4		
Source of finance				
Personal savings	106	47.8		
Friends/Relatives	22	9.9		
Cooperatives society	55	24.8		
Bank loan	39	17.6		

Source: Field Survey (2011).

with respect to their socio economic characteristic. Most (49.1%) of the fish farmers fell within the age bracket of 41 – 50 years, 37.8% fell within 31 – 40 years, 8.1% were above 50 years of age, while 2.0% fell within the age range of 21 – 30 years. This age bracket (41 – 50 years) is a productive age which portends better future for catfish production. Also it is considered as an

economically active age (Olowosegun et al., 2004). This indicates that very few young and old people are involved in fish farming. Sex plays a very important role in fish farming and agriculture, in terms of property acquisition, for example, fixed assets like land and machines. Most (84.2%) of the respondents who engaged in fish farming business were males. This indicates that fish farming in

Table 2. Distribution of farmers according to sources of extension services available.

S/N	Sources	Always used	Occasionally used	Do not use
		Freq (%)	Freq (%)	Freq (%)
1	Extension agents form ADPs	156 (70.3)	52 (23.4)	14 (6.3)
2	Radio broadcast	43 (19.4)	106 (47.7)	73 (32.9)
3	Television broadcast	42 (18.9)	93 (41.9)	87 (39.2)
4	Newspaper	11 (5.0)	79 (35.5)	132 (59.5)
5	Friends and relation	93 (41.9)	74 (33.3)	55 (24.8)
6	NGO extension workers	61 (27.5)	104 (46.8)	57 (25.7)
7	Universities	96 (43.2)	79 (35.6)	47 (21.2)
8	Research institutes	55 (24.8)	106 (47.7)	61 (27.5)
9	Ministry of Agric.	84 (37.8)	68 (30.6)	70 (31.6)

Source: Field Survey (2011).

Oyo State is predominantly a male occupation. This result can be justified by the assertion of Brummett et al. (2010) that fisheries activities are mostly dominated by men. Ekong (2003) pointed out that marriage in our society is highly cherished. This fact was further confirmed by the report of Fakoya (2000) and Oladoja et al. (2008) who assert that marriage confer some level of responsibility and commitment on individuals who are married.

In this study, it was discovered that majority of the farmers were married (46.1%) while very few were single, widowed and separated. Considering the educational level of the sampled fish farmers in the study area, it was observed that majority (87.3%) of the respondents were educated. This means that fish farming was dominated by the educated class and mostly by those armed with high level of education. The farmers can therefore be said to be literate since only small proportion of them had no formal education. The result compares favourably with Lawal and Idega (2004) who observed that the level of education attended by the fish farmers to a large extent determine the strategies which he/she may use to relate with the extension officers. Experience is the act of gaining knowledge through constant practices of skill, which brings about specialization. The sum of these then results in increase in output. Experiences played prominent role in any farming enterprise (Olaoye, 2010). From the findings of this study, 40.5% of the respondents had within 11 – 15 years' experience in fish farming business and 35.6% had within 5 – 10 years' experience in fish farming. Cooperative society is a social participation that helps farmers to pool their resources together in order to have access to fisheries inputs and to have insights in their fishing issues. Majority of the fish farmers (62.6%) subscribed to cooperative societies, while 37.4% did not belong to any form of cooperative society. Those that financed their farm through cooperative society constituted 24.8% of the respondents, 47.8% of them financed their farm through personal savings, while 9.9% financed their farm through

friends/relatives.

The sources of extension services available to the respondents

The results in Table 2 revealed that about 70% of the respondents always get information source of extension services from the Extension Agents from ADPs, whereas 2.6% and 4.3% got the idea through universities and research institutes, respectively. This shows that out of all the sources identified in this study, ADPs is the most competent and it reaches out best to the farmers. Therefore this organization should be given more attention and adequate resources needed so that they can perform better.

Nature of extension services available to the respondents

Table 3 shows that almost 50% of the respondents sourced extension information from the ADPs while very few (2.7%) sourced from NGOs. This implies that the extension services in Oyo State's ADP is the one that reach out most effectively to the majority of the respondents to fulfill their information needs, which is probably due to the interests of the governments at promoting the enterprise. This is in line with the work of Bolorunduro et al. (2003) that majority (88.7%) of the fish farmers were aware of extension agents while 11.3% were not aware. It was also revealed the frequency of visit/contact with extension agent. Most (73.4%) of the respondents claimed to had contact with extension agent fortnightly, 21.6% had contact monthly, while 5.0% claimed to had contact with extension agent/officer occasionally. In terms of availability of extension services, 87.4% of the respondents claimed that extension services were available, while 12.6% claimed that extension services were not available in their areas. Furthermore, extent of availability of extension services was also determined, 67.1% of the respondents claimed

Table 3. Distribution of respondents by sources of extension service available (N = 222).

Source of information on fish farming	Frequency	Percentage
ADP	97	43.7
Ministry of Agriculture	28	12.6
Research Institute	12	5.4
NGOs	6	2.7
ADP and Ministry of Agriculture	38	17.1
ADP and NGOs	14	6.3
ADP and Research Institute	27	12.2
Assess to extension service		
Yes	197	88.7
No	25	11.3
Frequency of visit/contact with extension service		
Forth nightly	163	73.4
Monthly	48	21.6
Occasionally	11	5.0
Availability of extension service		
Yes	194	87.4
No	28	12.6
Extent of availability of extension service		
Always available	149	67.1
Rarely available	45	20.3

Source: Field Survey (2011).

Table 4. Distribution of respondents according to perception of benefits derived from the use of extension services (N = 222).

Z-score	Categories	Frequency	Percentage
-0.90 to -0.40	Low benefit	29	13.1
-0.41 to 1.10	Medium benefit	126	56.8
1.11 to 2.60	High benefit	67	30.1

Source: Field Survey (2011).

that extension services were always available, while 20.3% claimed that extension services were rarely available.

Perception of benefits derived from the use of extension services

Table 4 reveals that fish farmers were categorized on the basis of their perception of benefits derived from the use of extension services raw score. It gave rise to a continuum which became the three point scale. The score that qualified a farmer into any category was determined by the use of the respondent's standard score (Z-score). It was shown that 29 respondents a little over one-tenth (13.1%) were classified as low users of extension services, moderately high proportion (56.8%) were medium users, while about one-third (30.1%) were classified as high users with Z-score ranging from -1.90

to 2.60.

Hypothesis testing

H₀₁: Socio-economic characteristics of the fish farmers have no significant association on the nature of extension services available.

The socio-economic characteristics of the fish farmers were significantly related to nature of extension services available. The independent variables considered were: age, sex, educational level, marital status, family size and years of experience. Each of these variables was tested against each of the scores for the dependent variables in line with the set hypotheses.

Table 5 reveals the result obtained from Chi – square analysis. From the result, there was no significant association between nature of extension services

Table 5. Chi-square analysis of respondents' socio-economic characteristics and nature of extension services available.

Variable	χ^2	Df	CC	Decision
Sex	66.82	5	0.640	NS
Age	48.67	6	0.038	S
Marital status	29.70	6	0.00	S
Educational level	20.25	9	0.001	S

Source: Field Survey (2011).

χ^2 = chi square calculated, df = Degree of freedom, CC = Contingency Coefficient, S = Significant ($p < 0.05$), NS = Not significant ($p > 0.05$).

available and sex ($\chi^2 = 66.82$, $p > 0.05$), but there was a significant association between nature of extension service available and age ($\chi^2 = 48.67$, $p < 0.05$) marital status ($\chi^2 = 29.70$, $p < 0.05$) and educational level ($\chi^2 = 20.25$, $p < 0.05$). This implies that the nature of extension service available to fish farmers in Oyo State had significant effect on the socio economic characters of the fish farmers except on their sex.

CONCLUSIONS AND RECOMMENDATIONS

Fisheries extension services came into existence from the unified agricultural extension system, and extension services were made effective in Oyo State through the state ADPs. Extension service is a sector-which can be best described as an emerging energy that the country's agricultural productivity largely depends on. They are not just the issues but efficiently extension delivery system with appropriate approaches in their dissemination. These organizations had been responsible for dissemination of proven innovations, organized training workshops, and marketing sources to fish farmers. Based on these findings, the following are recommended:

- i. Extension agencies should be well funded to enable effective communication and dissemination of improved innovations.
- ii. Efforts should be made to have sufficient technological demonstration centers to show the knowhow of recommendations to farmers through contact approach.
- iii. The Government should endeavor to modify the existing extension system to suit the sector so that they can function better.
- iv. Credit facilities should be provided at minimal interest rate to the fish farmers.

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