



Importance of Extension Programs on Fish Production and Marketing

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Date of Submission: 04-06-2023

Date of Acceptance: 18-06-2023

Abstract

Descriptive research survey was adopted in evaluating the relevance of extension programs on fish production and marketing. Structured questionnaire was adopted in the survey which was used for collecting primary data. Multi-stage random sampling selected two communities in Epe, Lagos. The study then randomly chose five villages from each site to form 10 communities. Last round, five fish farms from each municipality were randomly selected for study. Research assistants distributed the questionnaires. Data showed frequency and percentages. The study found these features may aid extension efforts. Fish farming message transmission, knowledge source, technological efficacy, new technology introduction, effective identification of farmers' extension service needs, and accountability mechanism to enhance agricultural extension services to farmers. Extension programmes will improve fish production and marketing by integrating new technologies into farmers' indigenous knowledge, providing technical advice on farming and business management to new and established farmers, improving farming practises to increase fish production and income, and improving fish farmers' marketing techniques. Extension programmes integrate new technology into farmers' indigenous knowledge, advise new and existing farmers on farming practises and business management, enhance farming practises to boost fish output and revenue, and improve fish farmers' marketing tactics. Unstable government policies on agriculture, inadequate provision of basic/social amenities, loans and credits with high interest rates, inadequate number of agricultural education workers, natural hazards/environmental degradation, illiteracy/inadequate education, and inability of core farmers to effectively pass on knowledge and skills to heterogeneous fellow farmers all hinder extension programmes. Most respondents were willing to adopt new technology, making extension programmes vital to fish production and marketing. Thus, extension programme regulators should streamline services to

ensure that all farmers may utilise them at the right time.

Keywords: extension program, fish production, marketing

I. Introduction

In developing the aquaculture sector, extension service plays an important catalytic role as it serves as a source of information on technologies that can be utilized in fish farming communities to enhance production as well as improve the income and quality of life of people (Bonye et al., 2012). It is generally agreed that extension services can enhance the productivity of farmers if adequately designed and implemented (Ragasa et al., 2016). Yahaya (2003) noted that task of information exchange is achieved using various approaches of agricultural extension service delivery; which encompasses Training and Visit, Contact Farmer, Unified Agricultural Extension Services (UAES), and Transfer of Technology approach to extension service delivery. The rationale behind this is to enable farmers have easy access to information to aid their production. Olaoye, Ezeani and Onifade (2014) stated that the extension systems is made up of a framework which enables the organization of farmers into functional groups to grant them access to production resources such as information, credit facilities, marketing services and information on government development programmes. The ability to organize fish farmers into functional groups will aid the direction of resources by fisheries extension officials, thus increasing domestic fish production. The objective of this is to provide lasting solution to the challenge domestic fish production being in short supply and meeting up with demands (Bada and Rahji, 2010). This will also serve to curb the fear of importation being the only means of satisfying demands unless there is an intervention of policies and actions aimed at a sustainable domestic production.

As opined by Engle (2017) the development of extension programmes requires the



involvement of skilled extension personnel to identify significant issues and proffer appropriate solutions. This ensures the provision of important information and feasible results important to the timely transfer of technologies to farmers. In agricultural-dependent economies, extension programmes serve as the means by which relevant information is disseminated, render assistance to farmers, and develop their managerial and technical skills (Danso-Abbeam, Ehiakpor & Aidoo, 2018). To this end, it is expected that extension programmes will enhance farm productivity and revenue, as well as reduce poverty and food insecurity.

Statement of research problem

In spite of the advancements made in research and development, and the huge investments, aquaculture is still faced with the challenge of insignificant contribution to national food supplies and economic growth in Nigeria (Obiero et al., 2019). The challenges faced in the aquaculture sector includes limited knowledge, stiff competition from importers of fish which makes it cheaper fish, inadequate supply of quality fish seed and feed, and outdated or insufficient technical and marketing information (Awuor et al., 2019). In addition to these challenges, is the lack of incentives for investment in the sector which have influenced policy-makers to seek alternative ways of promoting aquaculture production in Nigeria (Sanyang et al., 2016). The foregoing has prompted the research into assessing the importance of extension programs on fish production and marketing.

Research objectives

Generally, the study seeks to assess the importance of extension programs on fish production and marketing. The study specifically seeks to

1. Determine the factors facilitating extension programs in fish farming
2. Ascertain the extent to which extension programs will improve fish production and marketing
3. Determine the preference of fish farmers for the factors facilitating extension services
4. Ascertain the factors hindering the availability of extension programs

Research questions

1. What are the factors facilitating extension programs in fish farming?
2. To what extent will extension programs improve fish production and marketing?
3. What is the preference of fish farmers for the factors facilitating extension services?

4. What are the factors hindering the availability of extension programs?

II. Literature review

Overview of extension

Extension defines the aid rendered to farmers enhance their production method, as well as improve their marketing techniques (Adams, 1982). It also describes efforts aimed at the achievement of a balanced social and economic development. Extension is also known as the transfer of technology, but it extends beyond that as it encompasses more than the sale of technology (Gebrehiwot, 2015). Effective implementation of extension requires understanding rural communities and individuals, their skills, knowledge, attitudes and aspirations.

The role of extension services in agriculture

Agricultural extension programmes is the means by which the issues of food insecurity and rural poverty is addressed. The rationale behind this is that extension programmes offers the means of transferring technology, aiding farmers in solving problems, supporting rural adult learning, and enabling farmers to become actively involved in the agricultural knowledge and information system (Danso-Abbeam, et al., 2018). The Food and Agriculture Organization (FAO) (2010) defines extension as; "systems that should facilitate the access of farmers, their organizations and other market actors to knowledge, information and technologies; facilitate their interaction with partners in research, education, agribusiness, and other relevant institutions; and assist them to develop their own technical, organizational and management skills and practices". This implies that an extension is regarded as the basic tool for enabling agriculture and other economic activities to meet the people's needs. To this end, it is a for improving the safety and quality of agricultural products, in addition to improving the knowledge of farmers for rural development; which makes it to be recognized as a significant component for technology transfer and development (Bonye et al., 2012).

From the foregoing, the extension programme serves to influence farmers' innovation and decision making process in a manner that enhances the social and economic status of farmers. Ajayi (2013) describes it as a key factor which enables farmers access important information and technologies to improve their lives, hence the recognition of the significant role it plays in factor in promoting agricultural development and



increasing farmers' income. Extension programs provides opportunities for identifying, adopting and sharing technology to align with varying socioeconomic conditions (Larbi Ayisi, 2016).

Bonye et al. (2012) noted that the implementation of extension programmes provides farmers with a notable source of information on new technologies which when utilized can improve production, incomes and living standards. Extension services enable the adoption of challenges confronting fish farmers, thus determining the direction of any formulated policy. Extension service encompasses improvement of skills and knowledge to enhance production, technology transfer, general community development through human and social capital development, improved access to markets and trade, and working with farmers to achieve a sustainable natural resource management (Danso-Abbeam, et al., 2018).

Danso-Abbeam et al. (2018) in investigating the effects of extension services on farm productivity and income in the Northern region of Ghana, collected data from 200 farm households, which was analyzed using regression. The study revealed that participating in the ACDEP agricultural extension programmes yielded positive economic gains. The study reemphasized the significant role of extension programmes in the improvement of farm productivity and household income.

Larbi Ayisi et al., (2016) examined the socioeconomic characteristics of fish farmers using

fifty farmers as respondents. The study findings indicated that the extension services were largely unavailable to rural farmers. It also revealed that the top need of these farmers was feed preparation and production. This led to the study concluding that despite the unavailability of the extension service to a large number of farmers, the their socio-economic characteristics implied that new technologies had a tendency to be accepted at a higher rate by the farmers.

III. Methodology

The descriptive research survey method was utilized in assessing the importance of extension programs on fish production and marketing. The primary sources of data using structured questionnaire was used in eliciting information from the respondents. Using the multi-stage random sampling technique, two areas were selected from the Epe area of Lagos state. In the second stage, the study adopted the random sampling method in selecting five communities from each of these areas, thus making ten communities. In the final stage, five fish farms were randomly selected from each of the community making fifty farms selected to participate in the study. Research assistants were utilized in questionnaire distribution to the respondents in view of the distance covered. The data collected was descriptively analyzed using frequency and percentages.

IV. DATA PRESENTATION ANALYSIS AND DISCUSSIONS

Table 1.0 Demographic data

Variables	Frequencies (n=50)	percentages
Gender		
Male	37	74.0
Female	13	26.0
Age group		
18-30	13	26.0
31-40	24	48.0
41-50	11	22.0
50 years and above	2	4.0
Highest Educational Qualification		
SSCE/GCE	22	44.0
OND/ND	19	38.0
B.SC/BA	8	16.0
Others	1	2.0
Number of years as a fish-farmer		
1-5years	22	44.0
5-10years	25	50.0



More than 10 years	3	6.0
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Field Survey (2023)

The result from the survey indicated that 74% males took part in the study alongside 26% female. The participant ages range between 18-30years (26%), 31-40years (48%); 41-40years (22%); and 50 years and above (4%). According to the study, 44% had SSCE/GCE as their highest educational attainment; 38% had OND/ND; 16% had B.Sc/BA; while the remaining 2% selected

others. 44% has been in fish farming for 1-5years; 50% had been into the business for 5-10years, whereas 6% had been into the business for more than 10years. This shows that anyone can enter into fish farming regardless of age, level of education, gender or experience. It is not distinguished by personal data.

RQ1: What are the factors facilitating extension programs in fish farming?

Table 2: The respondents' opinions on the factors facilitating extension programs in fish farming

STATEMENTS	SA	A	UN	D	SD	% in agreement
Fish farming message dissemination methods	10	31	1	5	3	82.0
Source of information on fish farming	22	26	1	0	1	96.0
Usefulness of demonstrated technology	18	27	2	1	2	90.0
Manner of new technology introduction	19	29	1	1	0	96.0
Effective identification of farmers' extension service needs	10	34	2	2	2	88.0
Accountability system to provide better agricultural extension services to farmers	22	26	2	0	0	96.0

Field survey, 2023

The following are the respondents' opinion on the factors facilitating extension programs in fish farming: Fish farming message dissemination methods (82.0%); Source of information on fish farming (96.0%); Usefulness of demonstrated

technology (90.0%); Manner of new technology introduction (96.0%); Effective identification of farmers' extension service needs (88.0%); and Accountability system to provide better agricultural extension services to farmers (96.0%)

RQ2: To what extent will extension programs improve fish production and marketing?

Table 3: The extent to which extension programs improve fish production and marketing

STATEMENTS	SA	A	UN	D	SD	% in agreement
Extension programs will enhance the capacity of extension programs to efficiently support fish farmers	14	33	1	0	2	94.0
Extension programs will integrate new technologies into the indigenous knowledge of farmers	16	25	2	1	6	82.0
Extension programs will provide technical advice on farming practices and business management to both new and established farmers	14	34	0	2	0	96.0
Extension programs will improve farming practices resulting in increased fish production and income	19	21	4	3	3	80.0
Extension programs will improve marketing techniques of fish farmers	17	29	2	0	2	92.0

Field survey, 2023



The following are the extent to which extension programs improve fish production and marketing: Extension programs will enhance the capacity of extension programs to efficiently support fish farmers (94.0%); Extension programs will integrate new technologies into the indigenous knowledge of farmers (82.0%); Extension

programs will provide technical advice on farming practices and business management to both new and established farmers (96.0%); Extension programs will improve farming practices resulting in increased fish production and income (80.0%); and Extension programs will improve marketing techniques of fish farmers (92.0%).

RQ3: What is the preference of fish farmers for the factors facilitating extension services?

Table 4: The respondent’s opinion on the preference of fish farmers for the factors facilitating extension services

STATEMENTS	SA	A	UN	D	SD	% in agreement
Credit Facilities	18	30	0	0	2	96.0
Environmental management practices	15	29	2	1	3	88.0
Farm record keeping	16	25	5	3	1	82.0
Literacy	19	21	8	2	0	80.0
Saving and investment	16	25	6	3	0	82.0

Field survey 2023

The following are the respondent’s opinion on the preference of fish farmers for the factors facilitating extension services: Credit Facilities (96.0%); Environmental management practices (88.0%); Farm record keeping (82.0%); Literacy (80.0%) and Saving and investment (82.0%).

RQ4: What are the factors hindering the availability of extension programs?

Table 5: The respondents opinion on the factors hindering the availability of extension programs

STATEMENTS	SA	A	UN	D	SD	% in agreement
Unstable Government policies on agriculture	14	33	1	0	2	80.0
Inadequate provision of basic/social amenities	16	25	2	1	6	82.0
Loans and credits with high interest rates	14	34	0	2	0	98.0
Inadequate number of agricultural education workers	19	21	4	3	3	80.0
Natural hazard/environmental degradation	17	29	2	0	2	92.0
Illiteracy/inadequate education	15	29	2	1	3	88.0
Inability of core farmers to pass on knowledge and skills effectively to heterogeneous fellow farmers	16	25	5	3	1	82.0

Field survey, 2023

The following are the respondents’ opinion on the factors hindering the availability of extension programs:

Unstable Government policies on agriculture (80.0%); Inadequate provision of basic/social amenities (82.0%); Loans and credits with high interest rates (98.0%); Inadequate number of agricultural education workers (80.0%); Natural hazard/environmental degradation (92.0%); Illiteracy/inadequate education (88.0%), and Inability of core farmers to pass on knowledge and

skills effectively to heterogeneous fellow farmers (82.0%).

V. Discussion of findings

The analysis revealed that extension programs can be facilitated using the following factors Fish farming message dissemination methods, source of information on fish farming, usefulness of demonstrated technology, manner of new technology introduction, effective identification of farmers' extension service needs, and accountability system to provide better agricultural



extension services to farmers. This finding is consistent with Obwanga et al. (2017) which noted that the aquaculture sector suffers varying challenges which affects their production and marketing techniques, and as such requires attention. To this end, changes in government led aquaculture research, and useful extension service will be rendered ineffective unless there are changes made first to the financial aspect of strengthening the capacity of fish farmers. This implies the necessity of government to identify innovative pathways to address the challenge of adequate financing.

This finding revealed that extension programs will improve fish production and marketing through the integration of new technologies into the indigenous knowledge of farmers, provision of technical advice on farming practices and business management to both new and established farmers, improving farming practices resulting in increased fish production and income and improving marketing techniques of fish farmers. This finding is consistent with Danso-Abbeam et al. (2018) which revealed that participating in agricultural extension programmes yielded positive economic gains.

The preference of fish farmers for the factors facilitating extension services includes credit facilities, environmental management practices, farm record keeping, literacy, saving and investment. This finding is consistent with Machila, Lyne and Nuthall (2015) which revealed that unstable government policy in addition to several other identified factors such as those identified in this study poses a severe threat to fish farmers productivity. To this friendly policies s up by the government to enhance fish farmers' performance to fight poverty, increase production and improve their marketing strategies.

The factors hindering the availability of extension programs include unstable government policies on agriculture, inadequate provision of basic/social amenities, loans and credits with high interest rates, inadequate number of agricultural education workers, natural, hazard/environmental degradation, illiteracy/inadequate education, and inability of core farmers to pass on knowledge and skills effectively to heterogeneous fellow farmers. This finding implies that extension organizations in attempting to enhance the living standards of farmers should encourage services that will promote their socioeconomic status and profitability. To this end, they have to be specific on the exact type of services they intend providing to them to influence their adoption of technology innovations.

VI. Conclusion

This study concludes based on the findings made that extension programs is significant to fish production and marketing, as most of the respondents indicated their willingness to adopt new technologies. It would be advisable for regulatory bodies in charge of organizing extension programmes to streamline the services rendered to ensure the availability and utilization of this service to every farmer at the right time in a timely manner.

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Appendix

REQUEST FOR

INFORMATION

Dear Respondent,

I am carrying out a study on “importance of extension programs on fish production and marketing”, and you have been chosen to be part of the study. This questionnaire is only for academic purposes. Kindly select the response which applies to you and all information will be kept confidential

SECTION A

Please tick () where appropriate

1. Gender: Female () Male ()
2. Age group: 18-30 () 31-40 () 41-50 () 50 and above ()
3. Highest Educational Qualification: SSCE/GCE () OND/ND () B.SC. () Others ()
4. Number of years as a fish farmer: 1-5 (), 5-10 (), more than 10 years ()

SECTION B:

Instructions: Please tick (√) as appropriate where

Key: Strongly agree (4), Agree (3), Disagree (2), and strongly disagree (1).

SN	Item	SA	A	UD	D	SD
RQ1	What are the factors facilitating extension programs in fish farming?					
1	Fish farming message dissemination methods					
2	Source of information on fish farming					
3	Usefulness of demonstrated technology					
4	Manner of new technology introduction					
5	Effective identification of farmers' extension service needs					
6	Accountability system to provide better agricultural extension services to farmers					
RQ2	To what extent will extension programs improve fish production and marketing?					
7	Extension programs will enhance the capacity of extension programs to efficiently support fish farmers					
8	Extension programs will integrate new technologies into the indigenous knowledge of farmers					
9	Extension programs will provide technical advice on farming practices and business management to both new and established farmers					
10	Extension programs will improve farming practices resulting in increased fish production and income					
11	Extension programs will improve marketing techniques of fish farmers					
RQ3	What is the preference of fish farmers for the factors facilitating extension services?					
12	Credit Facilities					
13	Environmental management practices					
14	Farm record keeping					



15	Literacy					
16	Saving and investment					
RQ4	What are the factors hindering the availability of extension programs?					
17	Unstable Government policies on agriculture					
18	Inadequate provision of basic/social amenities					
19	Loans and credits with high interest rates					
20	Inadequate number of agricultural education workers					
21	Natural hazard/environmental degradation					
22	Illiteracy/inadequate education					
23	Inability of core farmers to pass on knowledge and skills effectively to heterogeneous fellow farmers					