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FARMERS' PERCEPTION OF EFFECTIVENESS OF AGRICULTURAL EXTENSION DELIVERY TOWARDS AQUACULTURE DEVELOPMENT IN EBONYI STATE

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ABSTRACT

The major focus of most researchers on extension service delivery has been on farmers' behaviour change in terms of adoption and outputs, forgetting the efficiency with which extension personnel deliver extension services. This study examined farmers' perception of success of extension service delivery towards aquaculture development in Ebonyi State. The study was a survey research design as it utilized questionnaire to gather data from a sample of one hundred and sixty-eight respondents. The questionnaire was developed by the researchers and validated by 3 experts. It was used to gather data on socio-economic characteristics of farmers, sources of extension services and the nature of extension service delivery. The data were analysed using mean and standard deviation to answer the research question. t-test was used for testing the hypothesis. It was found out that most farmers operate at small scale level and use personal savings as the major source of finance; get extension information from friends and relatives; extension personnel were rated low on farmers' training, extension linkage system, and provision of technical advice to farmers. It was then recommended that extension agents should properly train and regularly visit farmers to create awareness on sources of extension services.

Keywords: Aquaculture, Perception, Extension service, Delivery, Programme, Effective, Fish, Farmer.

1. INTRODUCTION

Most of the time, farmers are blamed for poor adoption of extension services on the ground that they are conservative. Then, people measure success or failure of extension delivery based on the level of adoption without consideration of the effectiveness of extension service delivery. Extension service delivery in words of Oguremi and Olatunji (2013) is the process by which extension providers bring extension services in form of technical advice, advice on credits and other farm inputs, marketing information and all other innovation from the research institutes to the farmer. The authors stressed further that it is the responsibility of extension providers to provide learning situations, make farmers aware of research findings and persuade them to change their behaviours in favour of the services. The change in behaviour of farmers towards adopting extension services is an indicator of the effectiveness of the programme. Effectiveness of extension services was explained by Misra (1997) as the observed impacts of the program, expressed by ideal teaching and learning situation and positive change in behaviour of farmers. Adejo, Okwu and Ibrahim (2012) said that effectiveness of extension services is determined through the level; of awareness created among farmers, number of visits paid to farmers by extension workers, regularity of field meetings, farmers' training sessions and number of farmers trained. Then, Ajayi (2005) came up with a model for evaluating effectiveness of extension programme which stresses assessment of the activities of extension personnel: training, supply of inputs, and technologies, and creation of awareness. These according to Ajayi (2005) are the indicators of the effectiveness. The way these indicators are expressed with regard to aquaculture development is an aspect of this study. In the opinion of Ashley – Dejo (2012) aquaculture extension is the promotion of any aspect of fish farming technology development; with respect to how farmers acquire resources, skills, credits and technologies for the fish farming. Olaoye, Ashley – Dejo and Adelaja (2014) explained aquaculture development as the provision of fish production efficiency and improved innovations to farmers. In the context of this study aquaculture development involves the use of extension delivery to provide education, improved innovations and technical information to enable fish farmers make effective farm management decisions to enhance their productivity. It involves also the use of extension to reduce problems facing fish farmers such as high cost of feeds, post-harvest losses due to poor handling, processing, preservation and storage technologies, fish seed, lack of credits, and insurance cover for fisheries enterprises (Olaoye, 2010). Farmers perceive the innovations in different ways. Perception has been explained by Hornby (2010), as how people regard something and their beliefs about what it is like. In the context of this study perception refers to the way farmers assess and adopt innovations geared towards aquaculture development. However, perception as bedrock of adoption is contingent upon many factors such as personal, socio-

economic, socio-cultural and socio-political parameters (Babasanya, Oladele, and Odidi, 2013). They stressed further that availability of credits, compatibility of existing technology with improved ones, suitability to farmers' circumstances and needs, and the financial benefits influence perception and adoption of innovations. Thus, there is need to investigate how fish farmers in Ebonyi State perceive innovations in terms of its benefits and constraints.

The people of Ebonyi have high value for fish due to its nutritional content. The high demand for fish coupled with stagnation and decline in capturing fishes has put pressure on fish farming. Fish farming is a lucrative business venture as it gives great economic benefits to the operators. (Ashley Dejo 2012). To derive the benefits, fish farming needs to be intensified. Intensification of fish farming requires innovation and agricultural technologies effectively delivered to farmers. The farmers' beliefs about these innovations in terms of their delivery systems, benefits, and constraints on aquaculture development are yet to be investigated. It is against this background that this study was carried out.

2. PURPOSE OF THE STUDY

The study determined farmers' perception of agricultural extension services delivery towards aquaculture development in Ebonyi State. Specifically the study sought to:

1. Identify the socio-economic characteristics of fish farmers that affect their perception and adoption of extension services.
2. Determine farmers' views on the sources of extension services to fish farming.
3. Ascertain farmers' beliefs about the nature of extension services delivery towards fish farming.

3. METHODOLOGY

Three research questions and one hypothesis guided the study. The area of study is Ebonyi State which was chosen because of high interest of large number of farmers in fish farming. The study covered the three agricultural zones of the State: Abakaliki, Afikpo and Onueke. Multi-stage sampling method was utilized to obtain a representative sample. To do this, each of the agricultural zones was divided into extension blocks and finally cells. One extension block was randomly selected from each zone using balloting. Hence, a total of 3 extension blocks were selected. Two cells were selected from each block, giving 6 cells. Thereafter, 15 small scale farmers and 13 large scale farmers were selected from each cell. This gave a sample size of 168 fish farmers, made up of 90 small scale and 78 large scale fish farmers. The study was a survey design, as questionnaire was utilized to gather information from the respondents. Olaitan, Ali, Eyo and Swande (2000) stated that survey research design is the plan, structure and strategy that the investigator wants to adopt in order to obtain solution to research problems using questionnaire in collecting, analyzing and interpreting the data. The questionnaire was developed on four point rating scales and validated by 3 experts. Data collected through the questionnaire were analysed using mean and standard deviation to answer the research questions, and t-test for testing the null hypothesis.

The following research questions guided the study:

1. What are the socio-economic characteristics of fish farmers that affect their perception and adoption of extension services?
2. How do farmers access the sources of extension services for fish farming?
3. What are the farmers' beliefs about the nature of extension services delivered towards fish farming?

4. RESEARCH HYPOTHESIS

There is no significant difference in the responses of small and large scale farmers on the nature of extension services delivered to farmers.

5. RESULTS AND DISCUSSIONS

The results for the study were obtained from the research questions answered through the data collected. They were presented in table one, two and three below.

Table 1 Socio-economic characteristics of fish Farmers

S/N	Variable	Frequency	Percentage
1	Age years		
	21 – 30	9	5.36
	31 – 40	64	38.09
	41 – 50	78	46.43
	Above 50	17	10.12
2	Sex		
	Male	142	84.52
	Female	26	15.48
3	Marital status		
	Single	24	14.29
	Married	126	75.00
	Widowed	18	10.71
4	Educational status		
	No formal education	6	3.57
	Primary education	32	19.05
	Secondary education	49	29.19
	Tertiary Education	81	48.21
5	Farming experience (years)		
	Less than 5	59	35.12
	5 – 10	68	40.48
	10 – 15	29	17.26
	Above 15	12	7.14
6	Source of finance		
	Personal savings	40	23.81
	Friends/relatives	16	9.52
	Cooperative societies	74	40.05
	Bank loan	38	22.62
7	Size of farm		
	Small	86	51.19
	Moderate	42	25.00
	Large	40	23.81

Source: field survey 2014

Table 1 shows socio-economic characteristics of fish farmers. Most of the fish farmers (46.43%) were aged between 41 – 50; 38.09% fell within 31 – 40, 10.12% were above 50 and 5.36% were within the range of 21 – 30. The age bracket of 31 – 50, in which most farmers were found, is a productive age, and an advantage for adoption and spread of innovative practices. These agrees with the statement by Olowosegun, Sani, Sule and Bwala (2004) that young people are likely to accept and serve as better agents of innovation transfer; and are economically active age. Most of the respondents (84.52%) who engage in fish farming were males, signifying that fish farming in Ebonyi State is predominately a male occupation. It was also found that majority of fish farmers are married (75%) which is an indication of commitment to the business. The fact is confirmed by the report of Fakoya (2000) that marriage confers some level of responsibility and commitment on individuals. The results also reveal that majority of the respondents (96.43) are educated. This implies that the educational level of the respondents readily predispose them to have balanced perception of fish farming innovation. The result is in keeping with Lawal and Idega (2004) who observed that the level of education of farmers greatly determines the strategies they may use to relate to extension officers and their services.

From the finding of the study, 40.48% of the respondents had 5 – 10 years' experience in fish farming venture, and 35.12% are within 0 – 5 years in the business. This implies that most of fish farmers sampled are not highly experienced in the job. But it is often said that experience plays prominent role in any farming enterprise. The findings in this aspect of the study disagree with the popular opinion and report of Olaoye (2010) that experience is vital for accepting and utilizing information. The study further shows that the most common source of finance to fish farmers is cooperative societies (40.05 followed by personal savings 23.81%). This is a pointer that most fish farmers do not source funds from banks. This may be responsible for the greater number of the farmers with small scale farm size.

Table 2. Respondents' view point on sources of Extension Services utilized by fish farmers.

S/N	Source Item	\bar{X}	SD	Remarks
1	Extension agents	2.77	0.71	HU
2	Ministry of Agriculture	2.84	0.68	HU
3	Radio broadcast	2.61	0.79	HU
4	Television broadcast	2.32	0.88	RU
5	Friends and relation	2.86	0.67	SU
6	Universities	2.69	0.74	HU
7	Ngo extension workers	2.63	0.81	SU
8	Newspaper	2.29	0.83	RU

Source: Field Survey, 2014

Key: Hu= Highly Utilized

Su= Sometime Utilized.

Ru=Rarely Utilized

The results in table 2 show that friends and relation ($\bar{x} = 2.86$), ministry of agriculture ($\bar{x} = 2.84$), extension agents from ADP ($\bar{x} = 2.77$) and universities ($\bar{x} = 2.69$) are highly utilized sources of extension information and services. NGO extension workers and radio broadcast are sometime utilized with means of 2.69 and 2.61 respectively. Television broadcast and newspapers were rated low as sources of extension services to fish farmers. With friends and relation ranking first sources of information and extension services, traditional means of spreading agricultural innovation is still great in the study area. However, ministry of agriculture, extension agents and universities play significant role in disseminating agricultural innovation as indicated by the results. This is in consonance with the report of Olaoye et al (2013) that many farmers are now conscious of formal sources of extension services.

Table 3: Respondents views point on the nature of extension services delivered to fish farmer.

S/N	Items on Services	\bar{X}	SD	Remarks
1.	Farmers' training programmes			
a.	Training and visits of farmers	2.51	0.81	SE
b.	Organization of field meetings	2.57	0.60	SE
c.	Organization of methods, techniques and result demonstrations	2.68	0.82	SE
d.	Training on efficiency of production, processing and storage	2.60	0.83	E
e.	Organization of research linkage workshops	2.57	0.75	SE
2.	Farm inputs supply to farmers			
a.	Supply of improved animal stocks	2.79	0.61	HE
b.	Supply of agrochemicals	2.78	0.69	HE
c.	Supply of tools and equipment	2.47	0.88	NE
3.	Dissemination of information			
a.	Creating awareness through electronic media	2.89	0.59	HE
b.	Use of interpersonal contacts to pass technical information	2.80	2.60	HE
c.	Use of printed media to circulate information	2.49	2.87	NE
4.	Provision of advice to farmers			
a.	Provision of technical advice	2.55	0.86	SE
b.	Advice on credit facilities	2.67	2.79	E
c.	Advice on use of inputs	2.68	0.77	E
d.	Provision of advice on marketing situations	2.44	0.89	NE

Source: field survey, 2014.

Key

HE = Highly Effective

E = Effective

SE = slightly Effective

NE = Not Effective

Results in table 3 indicate that farmer' training programmes and research-extension-farmer linkage is not very effective. This result agrees with the report of Amalu (1998) that farming system research and extension is a weak link in the agricultural extension delivery in Nigeria. This is of a very high concern as farmers' training and research linkage system constitute strong pillars of extension delivery (Agbarevo, Machiadikwe and Benjamin, 2013). It implies that conducting demonstrations as an area of strength indicated by the findings of this study may not bring

high adoption in absence of adequate farmers' training and system research programmes. The inability of extension officers to deliver effectively on training program may be due to high ratio of an extension worker to farmers.

Other areas of weakness in extension delivery in Ebonyi State as found by this study are in the use of printed media to circulate information, supply of farm tools and provision of marketing advice. It is not surprising to observe low performance in the use of printed media since it forms part of the training program which has been identified by the study as a weak link. It is a common observation that farmers in the study greatly use crude tools in agricultural practices. This has been confirmed by the result of this study that extension service delivery is poor in supply of farm tools and equipment.

However, the respondents rated supply of improved animal stocks, and agro-chemicals as being effective. Other areas rated high by the respondents are creating of awareness through electronic and interpersonal media. Ikpi (1989) said that awareness promotes demand and demand is a force for rapid adoption of innovations. Thus, fish farmers in the study area accept improved stock of fish supplied to them as they are aware of its benefits. Again, provision of advice on the sources and use of credits and other inputs enjoyed high rating by the respondents. This may be responsible for farmers' great interest in utilizing funds from cooperative societies and banks as indicated by the results of this study. It implies that fish farming has bright prospect if farmers, especially small scale farmers are motivated and mobilized into utilizing funds from external sources.

Table 4: t-test Analysis of Mean Responses of Small Scale and Large Scale Farmers' Views on Extension Service Delivery.

S/N	Items	GP	N	\bar{X}	SD	DF	t-cal	t-Table	Rmks
1	Farmers' training programs								
a.	Training and visits of farmers	SSF	90	2.52	0.81	166	0.16	1.96	NS
		LSF	78	2.50	0.80				
b.	Organization of field meetings	SSF	90	2.58	0.60	166	0.11	1.96	NS
		LSF	78	2.57	0.59				
c.	Organization of methods and results demonstrations	SSF	90	2.69	0.82	166	0.16	1.96	NS
		LSF	78	2.67	0.81				
d.	Training on efficiency of production and processing	SSF	90	2.61	0.83	166	0.15	1.96	NS
		LSF	78	2.59	0.82				
e.	Organization of research linkage workshops	SSF	90	2.58	0.75	166	0.17	1.96	NS
		LSF	78	2.56	0.74				
2.	Farm inputs supply								
a.	Supply of improved crop and animal stocks	SSF	90	2.80	0.61	166	0.11	1.96	NS
		LSF	78	2.79	0.60				
b.	Supply of agro-chemicals	SSF	90	2.79	0.69	166	0.19	1.96	NS
		LSF	78	2.77	0.68				
c.	Supply of tools and equipment	SSF	90	2.48	0.89	166	0.15	1.96	NS
		LSF	78	2.46	0.88				
3.	Dissemination of information								
a.	Creating awareness through electronic media	SSF	90	2.90	0.59	166	0.13	1.96	NS
		LSF	78	2.88	0.58				
b.	Use of interpersonal contacts to pass technical information	SSF	90	2.80	0.60	166	0.12	1.96	NS
		LSF	78	2.77	0.59				
c.	Use of printed media to circulate information	SSF	90	2.50	0.87	166	0.22	1.96	NS
		LSF	78	2.47	0.86				
4.	Provision of advice to farmers								
a.	Provision of technical advice	SSF	90	2.56	0.86	166	0.21	1.96	NS
		LSF	78	2.54	0.85				
b.	Advice on credit facilities	SSF	90	2.68	0.79	166	0.16	1.96	NS
		LSF	78	2.66	0.78				
c.	Advice on use of inputs	SSF	90	2.69	0.77	166	0.20	1.96	NS
		LSF	78	2.67	0.76				
d.	Provision of advice on market situations	SSF	90	2.46	0.87	166	0.22	1.96	NS
		LSF	78	2.42	0.86				

Key: SSF = Small Scale Farmers
LSF = Large Scale Farmers
DF = Degree of Freedom
SD = Standard Deviation

From table 4; each of the items had calculated t-value less than the table value (1.96). This implies that there is no significant difference in the mean responses of small scale and large scale farmers' perception of extension service delivery. The hypothesis is therefore upheld. The similarity in the responses of the small and large scale fish farmers testifies that the findings on the nature of extension service delivered to farmers are true views of the farmers.

6. CONCLUSION AND RECOMMENDATION

From the results of this study, it was discovered by the researchers that the age in which most farmers were found fall within the age bracket 31-50 which is a productive age and an advantage for adoption and spread of innovative practices. The study found also that the most common sources of finance available to fish farmers as perceived by farmers were through cooperatives and personal savings. The study having assessed farmers' perception of extension service delivery towards aquaculture development in Ebonyi State, concluded that regular contact and good information will provide veritable ground for balanced perception of innovation especially in rural areas. It is therefore recommended that there is therefore urgent need for proper training and regular visits of farmers to create awareness on existence of innovations, and sources of inputs.

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Statement:

We hereby confirm that this research paper is our own original work and we have cited all sources that were used.