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Analysis of Information Sources Used By Fish Farmers in Ife Central

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ABSTRACT Information sources play a vital role in improvement of fish farming, however, the different sources of information do not receive equal attention by farmers, and as a result this study was conducted in the Ife Central Local Government area in Osun state, Nigeria. Using multistage sampling technique, 80 respondents were randomly sampled from 160 fish farmers registered by the Osun State Zonal Agriculture Development Project. The findings of the study showed information sources are in use by fish farmers in the study area. The frequency of their use, information and credibility as perceived by the respondents was also recorded. However, mobile phones, radio and professional colleagues were most useful sources of information and it is recommended that farmers should endeavor to associate with farmer groups to enjoy the benefits of being a member of a farmer organization. However, the null hypothesis was rejected in the study. It is therefore recommended that extension information should be disseminated through radio, religious organizations as they are considered more reliable and timely, information communication technology infrastructures should be provided and improve the transport system so that modern agricultural information can be made available on time.

INTRODUCTION

Agriculture is regarded as the engine of development in most developing countries and agricultural information is a major tool for the development of small-scale farmers and it contributes to the livelihood of people both in urban and rural areas (Ronald et al. 2015). Okoedo-Okojie (2015) stated that agriculture with its positive impact on the Nigerian population is faced with a myriad of problems among which is low utilization of technologies. Ugboma (2010) stated that in agriculture, the role of information in enhancing agricultural development cannot be overemphasized. Information is vital for increasing production and improving marketing and distribution strategies (Oladele 2006). However, the efficiency of technologies generated and disseminated depends on effective information sources, which are the key processes of information dissemination (Oladele 2006). One of the limiting facts in agricultural advancement in Nigeria is due to the lack of information on agricultural innovations, and this shows that low utilization of technology by farmers is a result of the gap between the farmers and the research institutes in the timing and disbursement of the information. Information also opens windows for sharing experiences, best practices, sources of financial aids and new markets. Information is an indispensable factor in the practice of farming and it is the basis of extension service delivery (Ofuoku et al. 2008). Furthermore, he defined information as a power every individual should have access to. Agbamu (2006) stated that agricultural information is all published and unpublished knowledge on all aspects of agriculture. He classified agricultural information into four categories namely, technical, commercial, sociocultural and legal information.

The quality of any information relies solely on three pillars, which are accuracy, timeliness and relevance. Access to adequate information is very essential to proper agricultural production and contribution to any given economy. Information on fish farming includes and covers the whole process from the construction of the fish pond, the technology needed for farming, stocking rate, breed selection water management, spawning, sorting, harvesting, processing, storage, recordkeeping and the marketing (Ofuoku et al. 2008). Ronald et al. (2015) stated in the study by Ronald et al. (2014) in Tanzania that

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however, the major sources of information used by farmers in accessing agricultural information were family or parents, personal experience, radio, neighbor, friends and agricultural extension officers. Any system initiating and stimulating development has a responsibility to provide and disseminate information about its activities to make the people knowledgeable about things happening around them, generate in them the right attitudes and encourage the adoption of desirable value systems (Okoedo-Okojie 2015).

Statistics and researches show that meat protein shortage continues to increase everyday in Nigeria, despite various efforts to improve its productivity in the field of cattle production, and the price of beef has become unaffordable for an average consumer (Olawumi et al. 2010). The awareness of the need for adequate protein in the human diet has greatly increased in many developing regions of the world and fish has been widely acknowledged as a rich source of dietary protein (Ajayi 2001). It is needless to emphasize the need for substantial increase in fish protein supply. This is because, fish provides a valuable source of animal protein, representing about forty percent of such supplies and remains the cheapest source of animal protein (Fapohunda 2005).

Increases in food prices have become not just a daily phenomenon but also outside the reach of a large percentage of the people. This has limited the majority to the consumption of more carbohydrates such as cassava products, yam and cocoyam at the expense of food containing protein, such as fish. Fish farming is the principal source of aquaculture. Fish farming involves raising the fishes from fingerlings to adulthood either for commercial purpose or as food consumption. If local fish production must be boosted, fish farmers must raise their yield using modern techniques of production, processing, and marketing (Alfred and Fagbenro 2006). Recent accounts show that domestic demand (because of progressive increase in the Nigeria population with over 140 million people) for fish in Nigeria could not be met only by dependence on artisanal fisheries, which experts say is fast depleting (Ojo and Fagbenro 2004). This observation, contradicts the report of the FAO-World Fish Center workshop on small-scale aquaculture in sub-Saharan Africa in 2005, which identified Nigeria as one of the countries in the region with great potential to retain sustainable fish production, via aquaculture considering the extensive mangrove ecosystem available in the country (FAO 2005).

Salau et al. (2014) recommended consumption of fish to nursing mothers and growing kids due to its high protein content, other nutrients and its low level of calories and cholesterol. These researchers further noted the importance of fish farming to the country's economy through its contribution to the GDP from N 76.8 billion in 2001 to N 162.6 billion in 2005. However, the gap between the demand and supply of fish in Nigeria is widening. National fish demand in Nigeria is 1.9 million metric tons while domestic production is about 0.7 million metric tons. It is noted that Nigeria currently imports about 0.7 million metric tons of frozen fish annually making it the highest importer of frozen fish in the world at an annual foreign exchange cost of N 35 billion (Salau et al. 2014). For fish production to be increased, current, relevant and timely information must be disseminated to fish farmers especially in the technological and agricultural trends. It is in light of this that this study investigates the information sources used by fish farmers in the Ife Central Local Government Area, Osun State Nigeria. The null hypothesis was rejected for the basis of the study.

Objectives

The general or main objective is to analyze the information sources used by fish farmers in Ife Central local government area of Osun state, Nigeria.

Specific objectives are to:

1. Determine the socio-economic characteristics of the farmers in the study area
2. Ascertain the sources of information available to the farmers
3. Determine the usefulness of the sources of information available to the famers
4. Determine the credibility of the sources of information available to farmers

MATERIAL AND METHODS

Study Area

The study was carried out in Ife Central Local Government Area (Ife Central LGA) located in Osun State in southwest Nigeria. Ife Central LGA is located between longitudes 7°, 33 and

4°, 32 east and latitudes 7, 55° and 4, 533° of the equator. It is characterized by two distinct seasons namely, rainy and dry seasons. The rainy season lasts from March to October, while the dry season comes between November and late March. The study area is well known for palm oil production, palm wine production, fish production, and other agricultural produce.

Population and Sample Size

The population of this study comprises all fish farmers in Ife Central LGA. Simple random sampling technique was employed in selecting 80 respondents across the LGA out of 160 registered fish farmers in the area as provided by the zonal office of Osun State Agriculture Development Project representing fifty percent sample size.

Method of Data Collection and Measurement of Variable

This survey study used multistage sampling techniques by choosing Osun State out of 36 states in Nigeria. It also made use of Ife Central LGA out of 30 LGAs in the state. Data was collected through scheduled interviews with the use of structured open and closed-end questionnaires. Both primary and secondary data were used for the analysis in the study. The primary data was collected through the use of questionnaires while the secondary data was obtained from relevant and current literature. The instrument was divided into six sections comprising socio-economic characteristics of respondents, information sources available to them, their information needs, information needs recently met by what information, usefulness of information sources and their credibility. It contained Likert format, close and open-ended questions. The independent variables are the farmers' socio-economic conditions of respondents and can be measured as follows:

- Age (in years)
- Gender
- Marital status
- Educational level (number of years in school)
- Years of farming (farming experience)

The dependent variables of the study comprise the usefulness of sources of information and credibility of the source of information. Usefulness of the source of information was measured on a 4-point rating scale including, "Not useful"=0, "Fairly useful"=1, "Useful"=2 and "Most useful"=3.

Data was analyzed through a descriptive statistical tool, which includes frequency counts and percentages while chi-square was considered to test the hypotheses.

RESULTS AND DISCUSSION

Respondents were requested to state their ages, sex and other background-related information. The personal characteristics that were considered for the study are shown and discussed below. The findings are presented in Table 1.

Table 1: Personal characteristics of the respondents

Variable	*Frequency*	*Percentage*
Age		
20-30	27	33.8
31-40	25	31.2
41-50	18	22.5
51 and above	10	12.5
Total	80	100
Gender		
Male	52	65.0
Female	28	35.0
Total	80	100
Marital Status		
Single	21	26.3
Married	52	65.0
Widowed	1	1.2
Divorced	6	7.5
Total	80	100
Religion		
Christianity	56	70.0
Islam	20	25.0
Traditional belief	4	5.0
Total	80	100
Years of Schooling		
0	3	3.8
1-6	48	60.0
7-9	4	5
10-12	11	13.7
13 and above	14	17.5
Total	80	100
Farming Experience		
1-5	61	76.3
6-10	15	18.6
11-15	3	3.8
16-20	1	1.3
Total	80	100
Membership of Social Org		
Yes	28	35
No	52	65
Total	80	100

Source: Field Survey 2014

Age

Results show that 33.8 percent of the respondents were aged between 20 and 30 years. About 31.2 percent aged between 31 and 40 years while 22.5 percent were aged between 41 and 50 years, which are regarded as the fairly old. Only 12.5 percent were old (51 and above). The mean age of the respondents was 37.3, which is also in agreement with the finding of Awoyemi and Ajiboye (2011) where the majority of the respondents were between the ages of 31 and 40 years. The result indicates that respondents were in their active age, and hence they are considered productive to the economy. More productivity of fish farming is expected because of the strength and physical ability to manage the fishpond (William et al. 2012). The findings of Ronald et al. (2015) show that farmers in their young, active ages would be open to accept innovations and information from sources more easily than their aged colleagues. This is in consonance with Ugboma (2010) who found that fish farmers in her study were predominantly between the ages 26 and 30 years.

Gender

Majority (65.0%) of the respondents are male while the remaining thirty-five percent of the respondents are female, thus showing that the male are actively involved in fish production, this agrees to the study by Alfred and Fagbenro (2012), Ofuoku et al. (2008) and Salau et al. (2014). A study by Okoedo-Okojie (2015) shows that 53.3 percent of the respondents were males indicating that they are more involved in farming. This maybe due to the fact that males are known to be the breadwinner of every family. Oke (2014) also confirms that more men engage in farming either as a hobby or main occupation irrespective of whether it is the urban or rural in the study area. This contradicts the statement of Awoyemi and Ajiboye (2011) that it is generally accepted that women participate actively in the rural economy due to their social and economic roles.

Marital Status

Majority with sixty-five percent of the respondents were married, 26.3 percent of the respondents were single, 7.5 percent of the respondents were divorced, and 1.2 percent of the respondents were widows. Getting married is a highly cherished value among the respondents in the study area. This conforms to the study of Ronald et al. (2014) that farming is practiced mostly by married people to provide for their families. Okoedo-Okojie (2015) stated that married people were regarded to be more responsible and so their views are likely to be respected within the farming communities as they take decisions on the use of farm inputs.

Religion

From Table 1, seventy percent of the respondents are Christians and twenty-five percent of the respondents practice Islam while the remaining five percent practice the traditional religion. This implies that the majority of the respondents are Christians.

Years of Schooling (Educational Level)

Majority of the respondents (60%) spend between 1 and 6 years in school, 17.5 percent of respondents had spent between 13 years and above in school, and 13.7 percent of respondents had between 10 and 12 years. Furthermore, about five percent of respondents spent between 7 and 9 years, while 3.8 percent of the respondents spent no years in school. The mean of the number of years of schooling is 7.1. Based on the mean of years spent in schooling, it was observed that most of the respondents had spent at least some years in school in the study area. This high level of literacy could be regarded as an advantage for the choice of source of information for fish production and this corresponds with Alfred and Fagbenro (2012). Such farmers are imbued with the ability to access and appreciate the use of improved technology and best practices in their enterprises (Oke 2014).

Farming Experience

Majority (76.3%) of the fish farmers had between 1 and 5 years of experience in fish farming, about 18.6 percent had between 6 and 10 years, 3.8 percent had between 11 and 15 years while 1.3 percent had between 16 and 20 years in fish farming. This implies that majority of fish farmers in the study are new entrants into fish production in the area. This is in harmony with

the findings of Williams et al. (2012) that majority of their study respondents had little experience in farming.

Membership of Social Organization

About sixty-five percent are not members of any social group while thirty-five percent of the respondents joined a social group. This shows that majority of the respondents did not have a social affiliation within their environment. This contradicts the findings of Ofuoku et al. (2008) that farmers who subscribed to joining a farmers' social organization have more information and access to credit, input and aids from government and extension agents. Those involved in fish farmers' association did so because of easy access to extension services, market and credit facilities. Basorun and Olakulehin (2007) also stated that when the fish farmers' association was formed in Lagos State and fish farmers got wind of it, they joined on hearing about the results achieved by members, mostly in terms of the association's link to markets, credit facilities and extension services. In view of these researchers, farmers who do not have social affiliations might likely be deprived of some opportunities attached to the latter.

Distribution of Respondents According to Sources of Information Available

In Table 2, findings revealed that about 41.3 percent of the respondents made use of radio as a source of information available while 33.8 percent of respondents made use of television, about 26.3 percent made use of friends and relatives, and respondents also used religious organizations as a source of information based on this study. The fish farmers used these sources because they were readily available and information got from them was perceived to be reliable as shown in Table 2. The radio having the highest percentage agrees with the findings of Alfred and Fagbenro (2012) and also the report by Adekunle and Alfred (2002) that radio is most commonly used amongst farmers because it is readily available and can be used with batteries in order to circumvent the incessant problem of power outage in Nigeria. This is also in accordance with the findings of Aphunu and Atoma (2011) that majority of their study respondents had access to radio. From Table 2, it is noted in the study that extension agents were available to only a quarter (25%) of the fish farmers.

Table 2: Distribution of respondents according to sources of information available

Information source	*Frequency*	*Percentage*
Extension agent	20	25.00
Radio	33	41.25
Television	27	33.75
Cooperative society	14	17.50
Bulletin/posters	20	25.00
Friends and relatives	21	26.25
Newspaper	15	18.75
Professional colleagues	17	21.25
Religious organization	21	26.25
Mobile phones	14	17.50
Internet	13	16.25
Feed millers	14	17.50
Commercial input dealer	13	16.25

Source: Field Survey 2014

Usefulness of Sources Information

Table 3 revealed that mobile phones ranked 1st (wms=1.71), followed closely by radio (wms=1.66) and professional colleagues ranked 3rd in terms of their usefulness as sources of information (wms=1.50). All these three sources of information are claimed to be most useful sources by fish famers. Other sources of information that were fairly useful to the respondents include religious organizations ranked 4th (wms=1.49), Internet ranked 5th (wms=1.47), bulletins and posters ranked 6th (wms=1.39), and friends and relatives ranked 7th (wms=1.35). Commercial input dealers ranked 8th (wms=1.31), feed millers ranked 9th (wms=1.29), and cooperative society and television ranked 10th and 11th (wms=1.08), respectively and lastly extension agents ranked 12th (wms=0.98). These findings revealed that the most useful sources of information include mobile phones, radio and professional colleagues. This could be due to the fact that mobile phones could have radio inbuilt into them and ease of contact and interaction among farmers could be guaranteed among the respondents in the study area.

Credibility of Information Sources among Fish Farmers

Table 4 shows the credibility of information sources in the study area. Professional col-

Table 3: Usefulness of sources information

Information sources	*Not useful*	*Fairly useful*	*Useful*	*Most useful*	*WMS*	*Rank*
Extension agent	28 (35.0)	31 (38.8)	16 (20.0)	5 (6.3)	0.98	12th
Radio	7 (8.8)	25 (31.3)	36 (45.0)	12 (15.0)	1.66	2nd
Cooperative society	20 (25.0)	27 (33.8)	22 (35.0)	5 (6.3)	1.08	10th
Bulletin/Posters	22 (27.5)	18 (22.5)	27 (33.8)	13 (16.3)	1.39	6th
Friends and relatives	18 (22.5)	26 (32.5)	26 (32.5)	10 (12.5)	1.35	7th
Professional colleague	19 (23.8)	18 (22.5)	29 (36.3)	14 (17.5)	1.50	3rd
Internet	25 (31.3)	17 (21.3)	21 (26.3)	17 (21.3)	1.47	5th
Feed millers	21 (26.3)	15 (18.8)	23 (28.8)	21 (26.3)	1.29	9th
Religious organization	25 (31.6)	17 (21.5)	23 (29.1)	14 (17.7)	1.49	4th
Commercial input dealers	21 (26.3)	17 (21.3)	24 (30.0)	18 (22.5)	1.31	8th
Mobile phones	11 (13.8)	22 (27.5)	26 (32.5)	21 (26.3)	1.71	1st
Television	25 (31.6)	30 (38.0)	16 (20.3)	8 (10.1)	1.08	11th

Source: Field survey 2014 WMS = Weighed Mean Score

Table 4: Credibility of information source among fish farmers

Information sources	*Not credible*	*Credible*	*Always credible*	*WMS*	*Rank*
Extension agent	12 (15.0)	42 (52.5)	26 (32.5)	1.18	4th
Radio	20 (25.0)	32 (40.0)	28 (35.0)	1.10	7th
Cooperative society	22 (27.5)	34 (42.5)	24 (30.0)	1.03	9th
Bulletin/Posters	21 (26.3)	38 (47.5)	21 (26.3)	1.00	10th
Friends and relatives	15 (18.8)	36 (45.0)	29 (36.3)	1.18	3rd
Newspaper	16 (20.0)	32 (40.0)	32 (40.0)	1.20	2nd
Professional colleague	10 (12.5)	40 (50.0)	30 (37.5)	1.25	1st
Television	25 (27.5)	24 (30.0)	34 (42.5)	1.15	5th
Religious organization	19 (23.8)	39 (48.8)	22 (27.5)	1.04	8th
Commercial input dealers	21 (26.3)	28 (35.0)	31 (38.8)	1.13	6th
Feed millers	27 (34.2)	27 (34.2)	25 (31.6)	0.96	11th
Internet	31 (38.8)	18 (22.5)	31 (38.8)	0.85	12th
Mobile phones	32 (40.0)	33 (41.3)	15 (18.8)	0.79	13th

Source: Field survey 2014 WMS = Weighed Mean Square

leagues ranked 1st and newspapers ranked 2nd with a weighed mean score of 1.25 and 1.20, respectively. Other sources of information that were perceived to be less credible as claimed by

the respondents include friends and relatives, and extension agents ranked 3rd and 4th, (wms=1.18) respectively, television ranked 5th (wms=1.15), commercial input dealers ranked 6th (wms=1.13), radio ranked 7th (wms=1.10), religious organizations ranked 8th (wms=1.04), cooperative society ranked 9th (wms=l.03), bulletins and posters ranked 10th (wms=1.00), feed millers ranked 11th (wms=0.96), Internet ranked 12th (wms=0.85), and lastly mobile phones ranked 13th (wms=0.79). This implies that the respondents perceived professional colleagues and newspapers to be the most credible sources of information in the study area. Though farmers used other information sources, some of them were not perceived to be credible.

CONCLUSION

Information has been seen to be a very important resource to aid any form of economic development. Agriculture progresses when there is the bridge between the farmers and the researchers through information communicated to the farmers either through the preferred source of information by the farmers or through direct dissemination from the extension agents or officers to the farmers. Information can then only have a positive impact on agriculture when it is adequate, relevant, timely, and easy to access through appropriate sources. The results from the study showed that the information sources were used but there was a variation in their degree of credibility. The results also showed that the fish farmer's gender and membership of social organizations had a significant effect and utilization of the information sources available. However, mobile phones, radio and professional colleagues were the most useful sources of information.

RECOMMENDATIONS

Based on the results from the findings, the following recommendations are proposed.

- There is a need for extension agents to disseminate timely information on fish farming technologies that will improve the production of fish. Enlightenment programs on marketing information, construction of modern ponds, feeding formulation and techniques should be introduced to the farmers.
- More information should be disseminated through the radio and religious organizations because the farmers consider these sources more reliable.
- Extension agencies should be more active in disseminating information to the fish farmers and in encouraging them to subscribe to various fish farmer groups that exist around the local government, hence making information more easily assessable
- The government should support rural electrification, Information Technology Communication (ICT) infrastructures and improve the rural transport system so that modern agricultural information facilitates can be made available and used in the study area.

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