



ASSESSMENT OF INFORMATION IMPORTANT TO ARTISANAL FISHERS IN SELECTED COASTAL AREAS IN NIGER DELTA

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ABSTRACT: *The study was conducted between January 2018 and December 2018 to assess information important to artisanal fishers in selected coastal areas in Niger Delta. Data from well-structured questionnaire were collected from 477 artisanal fishers out of 820 registered artisanal fishers and subjected to descriptive and likert scale analysis. Based on an average of 2.5 out of 4-point scale, 17 out of the 24 information types were timely, 15 were adequate and 20 were relevant. Information most important to artisanal fishers in the study area were: types of materials for boat making and effects of mesh size used in fishing. Most important information based on timeliness were: modern technique in boat and engine maintenance (3.973), negative effects of middle-men (3.588), effect of different mesh size (3.511), effects of fishing methods (3.441), dangers of rough sea (3.396), effects of bad fishing practice (3.389) and types of materials for boat making (3.199). Information that were most adequate were: effects of use of explosives (3.685), effect of different mesh size (3.531), types of materials for boat making (3.410) and access to modern fishing activities (3.124). The least relevant information was: processing and storage (1.962), use of different types of fishing gears (2.061), water trend or movement (2.382) and use of non-motorized vessels (2.412). On the average the information types were timely (2.604), slightly adequate (2.487) and relevant (3.169). Addressing and implementing these important information types from the findings can improve the fisheries industry in the Niger Delta.*

KEYWORDS: Adequacy, Areas, Artisanal Fishers, Information, Relevance, Timeliness

INTRODUCTION

Artisanal fisheries sometimes referred to as small-scale fisheries or traditional fisheries are usually not mechanised with low level of production (Mathew, 2003). The practice and operations differ from country to country. It could be as small as a one man-canoe in poor developing countries, to about 20m trawlers, seiners or long-liners in developed countries. However, they are the prominent fisheries in tropical developing counties (Berkes et al., 2001). They can be subsistence or commercial fisheries providing for local consumption or export. The characteristics include: age, sex, marital status, house hold size, educational attainment and fishing experience. They make use of fishing nets of various sizes, hooks and lines, and dug-out boats (Ngodigha et al., 2013) and above all have access to little information.



The role of information in enhancing fisheries development cannot be over emphasized to accelerate the pace at which information reaches the artisanal fishers. Poor and unreliable information infrastructure, high illiteracy levels, low income, lack of electricity and high cost of ICTs has been identified as factors that have limited accessibility of information services in rural areas (Mtega & Benard 2013). If increased production must be achieved, artisanal fishers will need to avail themselves with information on current practices of fishing which are disseminated through various sources of information communication. Information dissemination is a significant tool for promoting national development and artisanal fishers can only make progress, increase production when needed information on fisheries are disseminated to them as and when due.

However, the information being disseminated depends on the information needs of the fisher such as: where to obtain loan, how to market fish, fish processing and storage, access to modern fishing facilities, new methods of catching fish, organisation of fishery cooperatives, middlemen exploitation, where to acquire fishing tools at cheap rates, effects of water pollution and effects of bad fishing practices (Annune, 2012). This study therefore aims at assessing the important information needs of artisanal fishers in some selected coastal areas of the Niger Delta.

LITERATURE REVIEW

Education which is knowledge acquired either formally or informally is expected to have positive impact on productivity of farmers and fishers. As reported by Biswanger (1989), educated farmers are likely to adopt modern agricultural practices. This assertion was supported by Williams (2002) who reported that lack of education among men and women in fishing communities in West Africa posed significant constraints on sustainability in artisanal fisheries, just as it will do in farm production in general. In the case of the fishers in Ekperikiri, that are not formally educated, they have informal education with the experience gained from many years of fishing and by observing the changes in the fishing industry as well as the aquatic environment (Ngodigha, et al 2018).

With experience, a fisher is able to discern when and where to fish at a particular season to get a good catch (Ngodigha, et al 2018). The more experience a fisher has, the higher his capability in fishing in the face of competition and dwindling fish stocks (Inoni and Oyaide; 2007). At higher level of formal education, people are discouraged from participating actively in artisanal fishing operations (Biswanger, 1989) because they feel the profession does not fit their status. Artisanal fishery has been recorded as a male dominated occupation (Olaoye et al., 2012; Onemolease & Oriakhi 2011; Akpoko 2003; Jim-Saiki et al., 2016), with an age range of 20 - 60years. The few young boys engaged in artisanal fishing may be attributed to their inability to go for higher education as most farmers belonged to middle age category (Ofuoku et al., 2008).

The attributes of good information as identified by Osikabor et al.,(2011) are relevance (the significance of the information), timeliness (the rightness of the information), credibility/accuracy (the integrity and exactness of the information), cost-effectiveness (cheaper but valuable source of information), consistency (the steadiness of the information), accessibility (the user-friendliness of the information) and usability (the ease with which the

information is put to use) and adequacy. Nevertheless, all these aforementioned attributes lead to an improved decision making (Ogola, 2015; Osikabor et al., 2011).

The success of these attributes depends on the information access points. These information access points are the channels through which information are communicated to the artisanal fishers such as newspapers, journals, bulletins, community leaders, extension agents, friends, and radio and farmer groups (Mtega & Benard 2013). Other sources are family members, neighbour farmers, extension services, input providers and mass media (Boz & Ozcatalbas 2010). Research has also found out that; personal experience, workshops and Seminars, training, friends and neighbours, Ministry of agriculture, magazines of agriculture, extension officers, local Government officers, Non-Governmental Organizations, libraries of agriculture and posters (Ogboma 2010) are channels of information.

METHODOLOGY

The study was conducted between January 2018 and December 2018 in three out of the seven states in the coastal region of Niger Delta. These states are; Bayelsa, Rivers and Akwa Ibom states. The states cover a landmass of about 18,050 km², of which more than 60% is land and lies between Longitude 5 ° 00 and 6°.45' East and Latitude 5 ° 00 and 6°.30' north. It is bounded in the west by Delta State, the north by Imo and Abia States and east by Cross River State. On the southern flank is the Bight of Benin, which covers about 160 kilometres of the state's coastline. The states have a wide coastal belt inter-lace with rivulets and streams, which form part of the Niger Delta (Michael, 2013).



Fig 1: Map of Nigeria showing Study Area (Bayelsa, Rivers and Akwa Ibom States)

Population of the study was all full-time artisanal fishers in the selected coastal states of Niger Delta. Multi-stage sampling technique was used in the selection of the sample of which it was in three stages. In the first instance, out of seven states, three were purposively selected,



because these states were more involved in artisanal fishing. Four local government areas were also purposively selected from each of the three states due to their more riverine nature in the second stage, after which a random sampling was used based on online Rao soft calculation making a sample size of 477 respondents out of 820 registered artisanal fishers.

The data for this study was obtained from primary sources based on structured questionnaire. The Statistical Package for Social Sciences (SPSS) version 20 was used to process quantitative data gathered from the structured questionnaire. Descriptive and inferential statistical analyses were employed. Importance of twenty-four (24) information types were analysed under timeliness, adequacy and relevance.

RESULTS

Demographic Characteristics

As indicated in Table 1, 79.90% of the fishers were males, while 20.10% were females. Most of the fisher's age range was between 41-50 years (43%) and the least age range was 20-30 years (7.2%). Most of the fishers (55%) income was between ₦11,000 - ₦50,000 at the rate of ₦360 to a dollar. The highest household size 46.4% was between 3-4 persons and 95.7% of fishers had between 1-2 wives. An average of 80.30% of the fishers were married while 19.70% were single.

The study shows that the highest percentage (49.3%) of fishers had fishing experience of between 1 – 5 years and the lowest 5.2% had fishing experience of more than sixteen years. Fishers that had 6 – 10 years fishing experience were 44.1%, while those that had 11 – 15 years fishing experience were 1.4%. About 88% of the artisanal fish fishers had one form of education or the other. Those with primary education were 168 (38%) while 195 (44.10%) had secondary school level education, 29 (6.60%) had higher education and 50 (11.30%) had no education.

Attributes of Information

Table 2, indicates that 17 out of the 24 information types were timely with an average of 2.5 and above calculated on a 4-point scale. The less timely information were: available government grants and provision of other incentives (1.023), access to modern fishing facilities (1.376), how to obtain loan (1.584), use of different type of fishing gear (1.586), use of motorized vessels (1.648), brackish or fresh water fishing (2.301), processing and storage (2.419).

Table 3 indicates that 15 of the information types were adequate, while 9 of the information types were less adequate. The less adequate information types were: effects of deforestation (1.010) how to obtain loan (1.025), use of different type of fishing gear (1.285), processing and storage (1.539), available government grants and provision of other incentives (1.821), modern technique in boat maintenance (2.335), use of non- motorized vessels (2.384), organization of fishing cooperatives (2.398) and negative activities of middle-men (2.412).



Four of the information types as shown in table 4 were not relevant, while 20 were relevant. The 4 less relevant information types were: processing and storage (1.962), use of different type of fishing gear (2.061), water trend or movement (2.382) and use of non- motorized vessel (2.412).

Table 1: Socio Economic Characteristics of Artisanal Fishers in selected Coastal Areas of Niger Delta

Socio-Economic Character	Frequency	Percentage
1. Sex		
Males	353	79.90
Females	89	20.10
Total	442	100
2. Age (years)		
20-30	32	7.20
31-40	187	42.30
41-50	190	43.00
51 and above	33	7.50
Total	442	100
3. Income (₦) @ ₦360/\$		
N1-10,000	99	22.40
11,000-50,000	243	55.00
51,000-100,000`	71	16.10
101,000 and above	29	6.60
Total	442	100
4. Children /dependents		
1-2	137	31.00
3-4	205	46.40
5- 6	71	16.10
7 and above	29	6.60
Total	442	100
5. Wives		
1-2	423	95.70
3-4	19	4.30
Total	442	100
6. Marital Status		
Married	355	80.30
Single	87	19.70
Total	442	100
7. Years of Fishing Experience.		
1-5 years	218	49.30



6-10 years	195	44.10
11-15 years	6	1.40
16 and above	23	5.20
Total	442	100
8.Educational Level		
No formal education	50	11.30
Primary school	168	38.00
Secondary school	195	44.10
Higher education	29	6.60
Total	442	100

Table 2: Timeliness of Information of Fishers in Selected Coastal Areas of Niger Delta

Information Type	Timeliness					Remark
	Vt	Mt	Lt	Nt	Mean	
1.Use of different types of fishing gears		69(15.6)	121(27.4)	252(57.0)	1.586	Less Timely
2.Water trend/movement	218(49.3)	5(1.1)	-	219(49.5)	2.502	Timely
3. Weather trend	-	334(75.6)	105(23.8)	3(.7)	2.749	Timely
4.New methods of catching fish	218(49.3)	4(.9)	120(27.1)	100(22.6)	2.769	Timely
5.Type of materials for boat making	218(49.3)	123(27.8)	72(16.3)	29(6.6)	3.199	Timely
6.Use of motorized vessels		88(19.9)	111(25.1)	243(55.0)	1.648	Less Timely
7.Brackish or fresh water fishing	135(30.5)	83(18.8)	4(.9)	220(49.8)	2.301	Less Timely
8.Access to modern fishing facilities		47(10.6)	72(16.3)	323(73.1)	1.376	Less Timely
9.Use of non-motorized vessels	218(49.3)	5(1.1)		219(49.5)	2.502	Timely
10.Effects of different fishing methods	218(49.3)	203(45.9)	19(4.3)	2(.5)	3.441	Timely
11.Use of safety materials	135(30.5)	171(38.7)	103(23.3)	33(7.5)	2.923	Timely
12.Effects of use of explosives (dynamite)	222(50.2)	1(.2)	47(10.6)	172(38.9)	2.617	Timely
13.Effects of different mesh size of nets	254(57.5)	163(36.9)	22(5.0)	3(.7)	3.511	Timely
14.Information on how to maintain fishing gears.	217(49.1)	5(1.1)	120(27.1)	100(22.6)	2.767	Timely



15.Effect of bad fishing practices& water pollution	270(61.1)	76(17.2)	94(21.3)	2(.5)	3.389	Timely
16.Modern techniques in boat & engine (outboard) maintenance	435(98.4)	4(.9)	1(.2)	2(.5)	3.973	Timely
17.Dangers of rough sea (waves) fishing	268(60.6)	81(18.3)	93(21.0)		3.396	Timely
18.Processing and storage	190(43.0)	28(6.3)	1(.2)	223(50.5)	2.419	Less Timely
19.Effects of deforestation	137(31.0)	87(19.7)	1(.2)	217(49.1)	2.526	Timely
20.How to obtain loan (where, when and requirements).		69(15.6)	120(27.1)	253(57.2)	1.584	Less Timely
21. Available government grants and provision of other incentives.	2(.5)	2(.5)		438(99.1)	1.023	Less Timely
22. Organization of fishing cooperatives.	218(49.3)	5(1.1)		219(49.5)	2.502	Timely
23. Negative activities of middlemen or exploitation.	265(60.0)	174(39.4)	1(.20)	2(.5)	3.588	Timely
24. Where to acquire cheap fishing tools.	9(2.0)	230(52.0)	129(29.2)	74(16.7)	2.594	Timely
Grand mean	2.604					Timely

Key: *Vt*, = *Very timely*, *Mt* = *Moderately timely*, *Lt* = *Less timely*, *Not timely*.

Table 3: Adequacy of Information of Fishers in Selected Coastal Areas of Niger Delta

Information type	Adequacy				Mean	Remark
	Va	Ma	La	Na		
1.Use of different types of fishing gears	-	-	126(28.5)	316(71.5)	1.285	Less Adequate
2.Water trend/ movement	218(49.3)	4(.9)	220(49.8)		2.500	Adequate
3. Weather trend	83(18.8)	198(44.8)	123(27.8)	38(8.6)	2.738	Adequate
4.New methods of catching fish	137(31.0)	87(19.7)	7(1.6)	211(47.7)	2.539	Adequate
5.Type of materials for boat making	218((49.3)	187(42.3)	37(8.4)		3.410	Adequate
6.Use of motorized vessels	45(10.2)	304(68.8)	10(2.3)	83(18.8)	2.704	Adequate



7.Brackish or fresh water fishing	218(49.3)	4(.9)	63(14.3)	157(35.5)	2.640	Adequate
8.Access to modern fishing facilities	196(44.3)	105(23.8)	141(31.9)		3.124	Adequate
9.Use of non-motorized vessels	216(48.9)	4(.9)		222(50.2)	2.384	Less Adequate
10.Effects of different fishing methods	83(18.8)	204(46.2)	132(29.9)	23(5.2)	2.785	Adequate
11.Use of safety materials	221(50.0)	65(14.7)	54(12.2)	102(23.1)	2.916	Adequate
12.Effects of use of explosives(dynamite)	375(84.8)	31(7.0)	36(8.1)		3.686	Adequate
13.Effects of different mesh size of nets	256(57.9)	166(37.6)	18(4.1)	2(.5)	3.529	Adequate
14.Information on how to maintain fishing gears.	87(19.7)	326(73.8)	29(6.6)		3.531	Adequate
15.Effect of bad fishing practices& water pollution	218(49.3)	4(.9)	220(49.8)		2.500	Adequate
16.Modern techniques in boat &engine(outboard) maintenance	62(14.0)	58(13.1)	288(65.2)	34(7.7)	2.335	Less Adequate
17.Dangers of rough sea (waves) fishing	135(30.5)	87(19.7)	1(.2)	219(49.5)	2.500	Adequate
18.Processing and storage	48(10.9)	142(32.1)	252(57.0)		1.539	Less Adequate
19.Effects of deforestation			4(.9)	438(99.1)	1.009	Less Adequate
20.How to obtain loan (where, when and requirements).			11(2.5)	431(97.5)	1.025	Less Adequate
21.Available government grants and provision of other incentives.		139(31.4)	85(19.2)	218(49.3)	1.821	Less Adequate
22.Organization of fishing cooperatives.	135(30.5)	9(2.0)	195(44.1)	103(23.3)	2.398	Less Adequate
23.Negative activities of middlemen or exploitation.	135(30.5)	83(18.8)	53(12.0)	171(38.7)	2.412	Less Adequate
24.Where to acquire cheap fishing tools.	147(33.3)	118(26.7)	75(17.0)	102(23.1)	2.701	Adequate
Grand mean	2.489				Slightly Adequate	

Key: Va = Very adequate, Moderately adequate, La = Less adequate, Na = Not adequate.

**Table 4: Relevance of Information of Fishers in Selected Coastal Areas of Niger Delta**

Information type	Relevance					Remark
	Vr	Mr	Lr	Nr	Mean	
1.Use of different types of fishing gears	12(2.7)	162(36.7)	109(24.7)	159(36.0)	2.061	Less Relevant
2.Water trend/movement	218(49.3)		1(.2)	223(50.5)	2.382	Less Relevant
3. Weather trend	218(49.3)	91(20.6)	130(29.4)	3(.7)	3.186	Relevant
4.New methods of catching fish	140(31.7)	170(38.5)	30(6.8)	102(23.1)	2.787	Relevant
5.Type of materials for boat making	413(93.4)	29(6.6)			3.934	Relevant
6.Use of motorized vessels	329(74.4)	29(6.6)	1(.2)	83(18.8)	3.367	Relevant
7.Brackish or fresh water fishing	218(49.3)	125(28.3)	97(21.9)	2(.5)	3.265	Relevant
8.Access to modern fishing facilities	174(39.4)	131(29.6)	1(.2)	136(30.8)	2.776	Relevant
9.Use of non-motorized vessels	218(49.3)		1(.2)	223(50.5)	2.412	Less Relevant
10.Effects of different fishing methods	219(49.5)	91(20.6)	100(22.6)	32(7.2)	3.124	Relevance
11.Use of safety materials	411(93.0)	1(.2)	1(.2)	29(6.6)	3.796	Relevant
12.Effects of use of explosives(dynamite)	218(49.3)	124(28.1)	70(15.8)	30(6.8)	3.199	Relevant
13.Effects of different mesh size of nets	218(49.3)	195(44.1)	29(6.6)		3.428	Relevant
14.Information on how to maintain fishing gears.	225(50.9)	189(42.8)	28(6.3)		3.446	Relevant
15.Effect of bad fishing practices& water pollution	225(50.9)	217(49.1)			3.509	Relevant
16.Modern techniques in boat &engine (outboard) maintenance	217(49.1)	201(45.5)	23(5.2)	1(.2)	3.434	Relevant
17.Dangers of rough sea (waves) fishing	265(60.0)	173(39.1)		4(.9)	3.581	Relevant
18.Processing and storage		201(45.5)	23(5.2)	218(49.3)	1.962	Less Relevant
19.Effects of deforestation	222(50.2)	1(.2)	219(49.5)		2.511	Relevance



20.How to obtain loan (where, when and requirements).	222(50.2)	191(43.2)	29(6.6)		3.437	Relevant
21.Available government grants and provision of other incentives.	341(77.1)	101(22.9)			3.772	Relevant
22.Organization of fishing cooperatives.	337(76.2)	105(23.8)			3.762	Relevant
23.Negative activities of middlemen or exploitation.	354(80.1)	4(.9)	84(19.0)		3.421	Relevant
24.Where to acquire cheap fishing tools.	265(60.0)	146(33.0)	29(6.6)	2,(.5)	3.525	Relevant
Grand mean	3.169					Relevant

Key: Vr = Very relevant, Mr = moderately relevant, Lr = Less relevant, Nr = Not relevant

DISCUSSION

Majority of artisanal fishers were male (79.90%). This finding agrees with the works of Annume (2012) and Ijatuyi (2016) that males dominate the fishing business. About 43% of artisanal fishers fall within the age bracket of 41 – 50 years followed by those of 31 – 40 years (42.3%) and the least age bracket been 20-30 (7.2%). This shows that artisanal fishers are predominantly young people. Very few old people (51 and above) are engaged in artisanal fishing (7.50%). The few young boys engaged in artisanal fishing may be as a result of their inability to go for higher education. The implication of people of 41 – 50 years age bracket engaged in fishing means that fishers in the study area are young and energetic people. Hence, they could withstand the drudgery and the risk of the venture which agrees with James et al., (2014) and Ogboma (2010).

However, this study notes that new entrant of young people with 1 – 5 years of fishing experience have come into fishing because of increase economic benefits in the fishing sector. This is in agreement with the findings of Ogboma (2010) and counteracts the finding of Ofuoku et al., (2008) who observed that fishing diffuses very slowly among artisans in the Niger Delta region.

The study shows that only 50 (11.30%) had no education. This finding disagrees with those of Onemolease & Alakpa (2009) who observed that artisanal fishermen had low educational background. Educational background of artisanal fishers under study can have impact on information accessibility. Furthermore, the research finding revealed that majority 243 (55%) of artisanal fish fishers earn monthly income between 11,000 Naira – 50,000, 22.40% earn 1 – 10,000, 16% earn 51,000 – 100,000 and 6.60% earn 101, 000 and above with a mean of 2.0679. The income earned by an individual can have influence on the access and the use of information.

The average of the different information attributes suggest that the information types were timely (2.604), slightly adequate (2.487) and relevant (3.169). Two information types: types of



materials for boat making and effects of using different mesh size were most timely, adequate and relevant. This suggest that fishers in the coastal region of the Niger Delta are in dare need of information on the best material for making their boats that would be durable as well as cheap. Also, from years of experience gained in fishing, fishers have realised the importance of using the right mesh size for fishing at any given period in time to avoid depletion of the fisheries resources. This finding agrees with those of Ngodigha, et al (2018) that; with experience, a fisher is able to discern when and where to fish at a particular season to get a good catch.

Timeliness of these information types is critical to the success of the fishing business as it conforms to the finding of Osikabor et al., (2011) and Dulle et al., (2014). In their different studies, they stated that timeliness was an attribute of good information. The grand mean of 2.604 suggest timeliness for which out of twenty-four information items, fifteen were timely whereas seven were less timely. Availability of government grant (least timely, 1.023) suggest that the information was not important to the fishers as at the point of conducting the study. While the timeliest information (modern technique in boat and engine maintenance, 3.973) indicates the importance of fishers maintaining their fishing vessels in order to continue in the fishing business.

Out of twenty-four (24) information types that were provided only nine (9) information types were found to be less adequate as against fifteen information types that were adequate. This suggest that the less adequate information types were not sufficient and not able to meet the needs of the fishers. The four (4) least relevant information types implies that these information types were not important to the fishers and so they do not have need of them.

IMPLICATION TO RESEARCH AND PRACTICE

This study has shown that it is very important for artisanal fishers to have sufficient and relevant information at the right time. Adult literacy classes should be organized to educate illiterate artisanal fishers with low formal educational background for more effective information dissemination. Also, artisanal fishers with higher educational qualification should be used as nomadic teachers in the fishing communities as well as train them as fisheries extension workers to ensure effective information dissemination. The male and young artisanal fishers should be encouraged with incentives to make them more productive as this will greatly enhance fish production in the Niger Delta.

Effective information dissemination methods like packaging and repackaging of information should be employed in the study area. This will help the artisanal fishers to improve on their fishing techniques for enhanced fish production. Other intervention agencies providing information on different information needs of the artisanal fishers should complement government efforts in providing valuable information in order to increase their level of production

Provision of basic amenities such as electricity so that artisanal fishers will listen to various electricity-based information sources such as television, radio as well as mobile phone in order to avail themselves the opportunity of getting information that will enhance fish production. The researcher also recommend that stakeholders should also consider the worth of the various information types based on the timeliness, adequacy and relevance of these information types,



and provide them on time, make them adequate and only the ones that are relevant be provided. This will be the basis for increased fish production.

CONCLUSIONS

The study has shown that artisanal fishing is a male dominated business in the coastal areas of Niger Delta. Young people are more into the artisanal fishing business with an income range of ₦11,000 to 50,000. The artisans were mostly married people who had one form of education or the other but most of them had middle class education with fairly large families with two wives.

The findings revealed that the information items were a little timely with the grand mean of 2.6 whereas this information were not adequate (2.4) even though they were relevant (3.2).

The study therefore lays the foundation through which solutions to the challenges artisanal fishers (respondents) faced in the study area could be improved upon to ensure fish sufficiency in the study area and increase income and the standard of living of the artisans. These findings if well managed could make significant contributions to food security, employment generation and multiplier effect on the economy of the study area.

Future Research

More studies should be conducted on the information needs of artisanal fishers in the coastal region of the Niger Delta not covered in the study. It should be a yearly research so to know the important information needs of the fishers at any given point in time. Fishing is a way of life of the people. It is the main source of their livelihood, they depend so much on the fisheries resources, so meeting their information needs will greatly enhance the fisheries industry.

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