DETERMINANTS OF CAPACITY BUILDING NEEDS OF ARTISANAL FISHERS IN KOGI STATE, NIGERIA

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Abstract: Nigerians are high fish consumers as the per capita consumption is 14.9 kg per year and has the largest market for fish and fishery products in Africa. Artisanal fishers provide fish for large proportion of fish consumed by our teeming population. These set of fishers depend on crude gears and technology and small vessels in capturing multiple fish species. This study examined the determinants of the capacity building needs of artisanal fishers in Kogi State, Nigeria. The study used primary data. The primary data were collected using structured questionnaire. Multistage sampling technique was use to select the respondents. A total number of 292 respondents were selected for the study. Data were analyzed using frequency, percentage, mean and Binary Logistic Regression. The results showed that more than half (71.6%) of the respondents had low knowledge level and majority (87.0%) of the respondents had high capacity building needs. The educational status (p<0.10), years of experience in fishing activities (p<0.10), contacts with extension services (p<0.01) and craft type (p<0.05) are the determinants factors of capacity building needs of the artisanal fishers. The study concluded that the majority of the fisher folks had low knowledge level on fishing practices. Majority of the fisher folks had high capacity building needs. The study therefore recommends the provision of training in the areas of high capacity building needs and that there should be consideration of factors influencing the capacity building needs of artisanal fisher folks during the planning and implementation of any training programme on artisanal fisheries.

Keywords: Artisanal Fishers; Fisher folks; Capacity Building Needs

1. Introduction

Fish is an important source of nutritious and affordable food for Low income people in the world (Bene *et al.,* 2015). Fisheries make a vital contribution to global food and nutrition security as FAO (2018) reported that about 88.42 percent of the total 171 million tons of fish produced were consumed by man. Fish accounts for about 17 percent of animal protein consumed by the global population (FAO, 2018). Nigerians are high fish consumers as the per capita consumption is 14.9 kg per year and has the largest market for fish and fishery products in Africa (FAO, 2016; Olaoye and Oloruntoba, 2011). Fish products and foods are consumed in Nigeria because of their high protein contents and their relatively cheap prices when compared with meat (FAO, 2012). Its amino acid profile, low cholesterol content, high vitamins and minerals content (calcium, iron, zinc), as well as fatty acid profile makes it stands out among animal proteins (FAO, 2012). Although fish is highly susceptible to

deterioration without any preservative measures, fish currently constitutes 41% of total animal protein intake by the average Nigerian and is increasingly a substitute for meat due to health and nutrition considerations (Okonta and Ekelemu, 2005).

Artisanal fishers depend on crude gears and technology and small vessels in capturing multiple fish species. Artisanal fishing is the process of capturing fish from the natural water using traditional gears and crafts. According to FAO (2008), artisanal fisherfolks are small-scale fishers who are into fishing activities on a part-time or full-time basis to make money and also for consumption purposes. The key features of artisanal fisheries are that it depends on crude technology which involves the use of small boats and canoes, different types of fishing gears,   mostly operate close to the river banks and coastal areas, labour intensive, low capital outlay and catches small quantities of different species of fish (FAO, 2008; Onuoha, 2009; Sumaila, 2017; Gibson and Sumaila, 2017 and Ifabiyi et al.,2017). The artisanal fishery provides income and employment for the fisherfolks and supplies cheap protein for the populace. Sustainable artisanal fishery practices are idea and hygienic fish capturing, handling, processing, preservation and marketing. Knowledge and adherence to sustainable fishing practices would make fish to be available continually in the water bodies, ensure the production of good quality fish products and would maximize the profit of the fisherfolks.

Capacity building is the acquisition of skills and knowledge required to perform a task better (Ifabiyi, Banjoko and Komolafe, 2017). *Capacity building is the effort geared towards improving the level of knowledge, skills and attitude possessed by an individual for proficiency in a given task or job.* Capacity building would improve the skills, knowledge and attitude of the fisherfolks. Capacity building needs is the skill, knowledge and attitude an individual requires to overcome problem as well as to avoid creating problem situation (Owona *et al.,* 2010). Capacity building needs also refers to additional specific information, knowledge and skills required to perform certain operation or activities (Ifabiyi, 2019).

The artisanal fisheries could contribute to national economic growth if they received opportunities to become more productive as the population increases, the demand for fish and fish products increases, especially with its nutritional advantage over meat. Alagoa, Elo, Andew and Ojukuli (2011) reported that the demand for fish in Nigeria is increasing at an annual rate of 3%. However, artisanal fisheries are fast depleting (Kapadia, 2002). The World Fish Center, as reported by Dambatta and Sogbesan (2015), stated that enormous potentials of fisheries to help feed and improve the nutritional status of Nigerians are greatly under-realized and precious aquatic resources are being degraded. The technologies in artisanal fishery in Nigeria are poor and crude, as post-harvest losses is as high as between 30 – 50 % (Olowoniyan, Bolorunduro, Dikko and Chindo, 2013 and FAO, 2007). Kyangwa and Odongkara (2005) attributes the high post-harvest losses and the low quality of fish products to the procedural techniques employed by the fisherfolks. The result of this is economic losses to fishermen, fish farmers, fish processors and marketers (Bolorunduro, 1996). Studies on the factors influencing the fisherfolks' areas of capacity building needs are necessary so as to know the right intervention to make. The main objective of this study was to examine the determinants of capacity building needs of artisanal fishers in Kogi State, Nigeria. The specific objectives were to determine the artisanal fishers' knowledge level on sustainable artisanal fishery practices in the study area; identify perceived areas of capacity building needs of artisanal fishers in the study area; and to identify the factors influencing fisherfolks' capacity building needs.

2. Methods

The study was conducted in the Kogi State, North-central, Nigeria. Kogi State is located in the North-Central geo-political zone of Nigeria. It extends from latitudes 6.33^0N to 8.44^o N and from longitudes 5.40^o E to 7.49^o E. The State covers a land area of about 75,000 square kilometers. Out of these, about 20% of the land is occupied by people (15,000 sq kilometers). The population for the study consists of all the artisanal fishers in the Local Government Areas (LGAs) along the River Niger bank in Kogi State, North Central, Nigeria. Three -stage sampling procedure was used to select the respondents for this study. The first stage involved a purposive selection of Local Government Areas (LGA) located along the River Niger banks in Kogi State, Nigeria where there is high rate of fishing activities (see selected LGAs in Kogi State: Lokoja, Idah and Koton-karfe LGAs).

The second stage involved a random selection of 5 fishing communities per selected LGA. A total of 15 fishing communities were selected. The third stage involved a proportionate random sampling of 10 % of the population of the fisherfolks from the selected fishing communities. A total of 292 respondents were selected for this study.

To determine the knowledge of the respondents on fishing practices, 22 knowledge statement were provided on a scale of yes and no, where Yes=1 and No =0. The Respondents with knowledge score of $\leq$ 50 % (1-50%) were categorized as having Low Knowledge Level while those that has Knowledge score range of between 51-100% were categorized as High Knowledge Level. The perceived areas of capacity building need were determined on a set of 18 fishing task statements where Capacity building needed =1 and capacity building not needed = 0.

To determine the factors influencing the capacity building needs, Binary logistic regression was used where dependent variable (Y_i) = Capacity Building Needs (High Need = 1, Low Need = 0) and the independent variable (X_i) = (age, gender, educational level, marital status, years of experience, income, household size, quantity of catch, contact with extension agents, fishing craft, number of fishing trips). The data was analyzed using frequency, percentage, mean and Binary Logistic Regression.

Logit Regression Model

$$Y_i = li \left(\frac{P_i}{1-P} \right) = \beta + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_i X_i \cdot \qquad - \qquad - \qquad (1)$$

$$Y_i = \beta + \sum_{i=1}^{n} \beta_{iX_i} + U_i \qquad - \qquad - \qquad - \qquad (2)$$

Measurement of variables
Y_i = Capacity Building Needs (High Need = 1, or Low Need = 0),
X_1 = Age of the artisanal fish farmer (years),
X_2 = Marital status (Numerical: single =1, Married =2),
X_3 = Educational level (years of schooling),
X_4 = Years of experience (in years),
X_5 = Income (Naira),
X_6 = household size (actual number),
X_7 = Labour type (hired =1, family =0),
X_8 = Membership of association (actual number),
X_9 = Quantity of catch per day (Kg),

X_{10} = Contact with extension agents (dummy: Extension contact =1, or No contact =2),
X_{11} = other supportive occupation (dummy: other supportive occupation =1, or otherwise=0),
X_{12} = Craft type
X_{13} = Number of fishing trips (actual number),

3. Results and Discussion

3.1. Background Information of the Respondents

This section presents and discussed the research findings of the background information of the respondents. This section (Table 1) presents the Socio-economic characteristics of respondents in the study area include: age, gender, marital status, educational level, household size, membership of association, Contact with Extension Service, primary occupation and annual income among others.

Table 1: The Result of Background Information of the Respondents

Socio-economic Characteristics	Frequency	Percentage	Mean	S.D
Gender				
Male	288	98.6		
Female	4	1.4		
Age (Year)			46.2 years	±12.0
20 -30	38	13.0		
31- 40	63	21.6		
41– 50	83	28.4		
51– 60	80	27.4		
61-70	26	8.9		
Above 70	2	0.7		
Marital Status				
Single	22	7.5		
Married	249	85.3		
Separated	15	5.1		
Widowed	6	2.1		
Educational Status				
No formal	101	34.6		
Primary	112	38.4		
Secondary	53	18.1		
Tertiary	26	8.9		
Membership of Association				
Yes	63	21.6		
No	229	78.4		
Contact with Extension Service				
Yes	64	21.9		
No	228	78.1		
Fishing as Primary Occupation				
Yes	134	45.9		
No	158	54.1		
Other Supportive Occupation				
Farming	146	50.0		
Trading	75	25.7		

Artisans	41	14.0		
Others	30	10.3		
Household size			6 Persons	±2.4
Below 5	137	46.9		
5 – 10	145	49.7		
Above 10	10	3.4		
Years of Fishing Experience			24.0 Years	±11.6
Below 10	49	16.8		
11 – 20	76	26.0		
21 – 30	91	31.2		
Above 30	76	26.0		
Monthly Income			44,119 Naira	±23667
Below 20,000	57	19.5		
20,000-40,000	102	34.9		
41,000- 60,000	77	26.4		
61,000- 80,000	35	12.0		
Above 80,000	21	7.2		
Quantity of Catch per Day (KG)			10.0 Kg	**±8.3**
Below 5	69	23.6		
5- 10	139	47.6		
11- 20	58	19.9		
21 – 30	16	5.5		
31 – 40	10	3.4		
Above 40	-	-		
Number fishing trips per Day			2 Trips	±0.6
One trip	160	54.7		
Two trips	126	43.2		
Three trips	4	1.4		
Four trips	2	0.7		
Type of Crafts				
Boats with Engine	10	3.4		
Boats without Engine	66	22.6		
Dugout/Plank Canoe	193	66.1		
Gourds	23	7.9		

Source: Author's Field Survey 2018, S.D – Standard Deviation

The result in Table 1 reveals that majority (98.6%) of the fishers were male. This indicates that artisanal fishing is dominated by male which might be due to the strenuous nature of fishing activities. The average age of the respondents was 46.2 years. This indicates that the fisherfolks were young, agile and are within the economically active age to undertake strenuous tasks associated with fishing activities. This further implies that fishing activities requires much energy in which children and elderly people might not be able to participate fully. The result in Table 1 further revealed that majority (85.3%) of the respondents were married. The implication of majority of respondents being married is that family members could be of great assistance in artisanal fishing operations. The result in Table 1 revealed that about 38.4% of the respondents had primary education. This indicated that fisherfolks had low level of education. This study is in agreement with the findings of Dogondaji *et al,* (2009) who revealed that fishermen had low levels of education.

The result further revealed that higher percentage (78.4%) of the respondents does not belong to any association. Membership of fishing association can enhance productivity as

fishers can exchange useful information. Also, extension agents can make use of this platform to provide information on improved fishing practices. Furthermore, membership of association will enhance fisherfolks' accessibility to credit which will enable them to overcome financial constraints. The result in Table 1 revealed that majority (78.1%) had no contact with extension services. This implies that majority of the fisherfolks do not have access to information on improved fishing practices as they had no contact with the extension services. Access to adequate information through fishery extension services is essential for increased artisanal fishery productivity.

The result in Table 1 revealed that about 45.9% of the respondents practiced fishing as primary occupation and about 50% of the respondents practice farming as supportive occupation. The result also revealed that the average household size of the respondents was 6 persons. This implies that the fisherfolk's household size could have influence on their output and income. This indicates that the respondents have family dependents that will require more financial commitment which might propel them to acquire training in order to increase their fishing capacity and income. The average years of experience in fishing activities of the respondents was 24 years. Years of working experience has a lot to do with productivity and efficiency. The implication of this result is that majority of the respondents had some experience in fishing business. The average monthly income of the respondents was ₦44,119. This is equivalent to USD 96.5. The average monthly income is higher than the current national minimum wage of ₦30,000 Naira. This indicates that artisanal fishing is a viable means of livelihood. The average quantity of fish catch per day was 10 Kg.

The result in Table 1 revealed that the average number of fishing trips per day was 2 fishing trips. This could be attributed to the strenuous nature of fishing activities, lack of cold storage facilities, long distanced fishing trips and delay in selling the captured fish. The result further revealed that about 66.1% of the respondents uses dugout/plank canoe for their fishing activities. This indicates that dugout/plank canoes are important fishing craft as higher percentage of the fisherfolks utilized it for fishing activities. This could be attributed to the fact that majority of the fisherfolks depends on crude technology for their fishing activities.

3.2. Knowledge of Sustainable Artisanal Fishery Practices

The respondents' knowledge of Sustainable artisanal fishery practices in the study area is presented in the following Table.

Table 2: Percentage Distribution of Respondents based on Knowledge of Sustainable Artisanal Fishery Practices

	Knowledge Area	Frequency	Percentage
1.	Can identify all the various local species of fish	156	53.4
2.	Fish abundance and diversity vary seasonally	169	57.9
3.	Use of non-selective fishing nets makes artisanal fishing to be unsustainable	36	12.3
4.	Boat and other equipment should be cleanse before each fishing trip	138	47.3
5.	Poor on board handling, exposure to high temperature and sun leads to damaged fish	176	60.3
6.	Fish captured in dirty and polluted water can harm the consumer	64	21.9
7.	Knowledge of fishing regulations and Acts	60	20.5
8.	Handling fish when sick (i.e. diarrhea, vomiting etc.) can contaminate the	138	47.3

	fish.		
9.	Use of pesticides or any chemicals substances for fishing activities leads to decline in fish harvest	165	56.5
10.	Drying is a way of preserving fish and is often done through the use of salt and sun radiation.	253	86.6
11.	Placing smoked fish on a raised platform prevents uptake of moisture and insect infestation.	22	7.5
12.	All materials used in packing fish must be clean and designed for food.	159	54.5
13.	Packing smoked fish into wooden boxes/jute bags before transportation can prevent fish breakages	161	55.1
14.	Can improves smoked fish appearance and preservation through the use of vegetable oil.	187	64.0
15.	Keeps record of fishing activities.	136	46.6
16.	Value addition initiatives increases the profit margin	165	56.5
17.	Unfavourable and harsh climatic condition (drought, flooding, harmattan) reduces fish harvest	209	71.6
18.	Uncontrolled and excessive fishing can make fish species go into extinction	57	19.5
19.	Use of waste products like rubber, nylon or oil during fish smoking can impact high content of polycyclic aromatic hydrocarbon (PAH) on the smoked fish.	35	12.0
20.	Can accurately forecast local weather	53	18.2
21.	Uncovered cuts/injury can become infected with germs and then increase the risk of fish contamination with germs.	78	26.7
22.	Fish should be processed or preserved with ice as soon as possible to prevent spoilage.	250	85.6

Source: Author's Field Survey 2018

The Table 2 revealed that about 85.6 % of the respondents had knowledge that fish should be processed or preserved with ice as soon as possible to prevent spoilage, about 86.6 % of the respondents knows that fish should be dried through the use of salt and sun radiation and about 71.6% had knowledge that unfavorable and harsh climatic condition (drought, flooding, harmattan) reduces fish harvest. This result implies that the fisher folks are well knowledgeable in fish preservation practices. The result in Table 2 also revealed that about 7.5% of the respondents knows that placing smoked fish on a raised platform prevents uptake of moisture and insect infestation, about 12.3% knows that the use of non-selective fishing nets makes artisanal fishing to be unsustainable and about 19.5% knows that uncontrolled and excessive fishing can make fish species go into extinction. This implies that there is gap in the fisher folk's knowledge level. This could be attributed to the poor extension services on fishery practices in Nigeria as Samson (2006) reported that fishery extension services in Nigeria are inadequate and ineffective. This result is similar to the findings of Adesoji and Kerere (2013) who reported that fisher folks in Lagos State had low knowledge level on improved fishing techniques and management practices.

3.3 Knowledge Level on Sustainable Artisanal Fishery Practices

Table 3, presents the result of the distribution of the respondents' knowledge level on sustainable artisanal fishery practices when categorized into Low and High in the study.

Table 3: Percentage Distribution of Respondents' Knowledge Level on Sustainable Artisanal Fishery Practices

Knowledge Level	Percentage Range	Frequency	Percentage
High	100 – 51	83	28.4
Low	50 – 01	209	71.6

Source: Author's Field Survey 2018

The result in Table 3 revealed that more than half (71.6%) of the respondents had low knowledge level while about 28.4% had high knowledge level. This implies that artisanal fisher folks' knowledge of fishing practices is not adequate and the need for training arises as a result of deficit situation in knowledge level. This could be attributed to the fact that the contact with extension services are low (Samson, 2006). This result is in agreement with the findings of Raji, *et al.,* (2012) who reported that artisanal fisher folks had low knowledge level on modern fishing practices.

3.4. Perceived Areas of Capacity Building

The Perceived Areas of Capacity Building Needs of the Respondents on Fishing Practices is presented in Table below.

Table 4: Percentage Distribution of Respondents based on Perceived Areas of Capacity Building Needs of the Respondents on Fishing Practices.

Fishing Tasks	Need Capacity Building	Need No Capacity Building
	Frequency (%)	**Frequency (%)**
1. Identification and sorting of fish	181(62.0)	111(38.0)
2. Handling and transportation of captured fish from landing site	235(80.5)	57(19.5)
3. Use and repair of nets, cage and traps	192(65.8)	100(34.2)
4. Use and maintenance of multiple hooks on a line	248(84.9)	44(15.1)
5. Canoe use and maintenance	229(78.4)	63(21.6)
6. Icing of fish	79(27.1)	213(72.9)
7. Outboard engine use and repairs	82(28.1)	210(71.9)
8. Rescue, resuscitation and safety skill	100(34.2)	192(65.8)
9. Use of chorkor smoker	242(82.9)	50(17.1)
10. Drying of fish	123(42.1)	169(57.9)
11. Salting of fish	137(46.9)	155(53.1)
12. Branding/packaging of processed fish	128(43.8)	164(56.2)
13. Management of storage pest	116(39.7)	176(60.3)
14. Fish marketing and distribution	239(81.8)	53(18.2)
15. Record keeping	89(30.5)	203(69.5)
16. Credit Acquisition	204(69.9)	88(30.1)
17. Maintaining personal and environmental health hygiene	185(63.4)	107(36.6)
18. Local weather forecasting	221(75.7)	71(24.3)

Source: Author's Field Survey 2018

The result in Table 4 revealed that about 84.9% of the respondents required capacity building on use and maintenance of multiple hooks on a line, about 82.9 % required capacity building on choker smoker, 81.8% of the respondents required capacity building on fish marketing and distribution, 75.7% required capacity building on local weather forecasting and about 65.8% required training on the use and repair of nets, cage and traps. This result shows that most of the fisher folks are not skillful in canoe use and maintenance, use and maintenance of multiple hooks, use of chorkor smokers and fish marketing and distribution. These high percentages of capacity building need indicates that most of the fisher folks have inadequate access to extension services. This result is in agreement with the findings of Onyebinama and Onyebinama (2010) who reported that most of people who are into agricultural practices in Nigeria had low technical and managerial skills.

3.5. Level of Capacity Building

Table 5, presents the result of the distribution of the respondents based on Level of Capacity Building Needs on Artisanal fishing practices in the study. Table 5 shows the level of Capacity building needs on artisanal fishing practices when categorized into Low needs and High needs.

Table 5: Distribution of Respondents based on Level of Capacity Building Needs on Artisanal fishing practices

Capacity Building Needs Level	Frequency	Percentage
Low Needs	38	13.0
High Needs	254	87.0

Source: Author's Field Survey, 2018. Low Needs – requires capacity building in less than 9 fishing tasks; High Needs - requires capacity building in more than 9 fishing tasks.

The result in Table 5 revealed that majority (87.0%) of the respondents had high capacity building needs while 13.0% had low capacity building needs. This indicates that most of the fisher folks required high level of capacity building on fishing practices. Provision of required training on artisanal fisheries will improve their production, income and standard of living. This result is in agreement with the findings of Okwu, *et al.*, (2011) who reported that the artisanal fisher folks in Benue State, Nigeria had high level of information needs on fishery practices.

3.6. Identify Determinants of the Artisanal Fishers' Capacity Building

Capacity Building Needs of the study were assessed using Logistic regression model and presented in Table 6 below. Explanatory variables in the study includes age, marital status, education status, years of experience, income, Household size, Labour Type, Membership of Fishing Association, Quantity of catch per day, Contact with Extension,

Table 6: Result of Logistic Regression Analysis to Identify Determinants of the Artisanal Fishers' Capacity Building Needs on Fishing Practices

Variables	Coefficient	Standard Error	z-value	p-value
Constant	-2.8678	2.1806	-1.32	0.188
Age	0.0049	0.0294	0.17	0.867
Marital status	0.6823	0.6190	1.10	0.270
Education status	0.3448	0.1931	1.79	0.074 *
Years of Experience	-0.0497	0.0286	-1.74	0.082*
Income	-0.0011	0.0118	-0.92	0.360
Household size	0.1582	0.1107	1.43	0.153
Labour Type	0.1061	0.2240	0.47	0.636
Membership of Fishing Association	-0.0349	0.5808	-0.06	0.952
Quantity of catch per day	-0.0246	0.0268	-0.92	0.359
Contact with Extension	0.5815	0.1958	2.97	0.003***
Other Supportive occupation	0.1981	0.2597	0.76	0.446
Craft Type	0.4583	0.2306	1.99	0.047**
Number of fishing trip	0.4381	0.3712	1.18	0.238

Prob > Chi^2= 0.0219
Pseudo R2 = 0.1115
Log likelihood = -100.31062

Source: Author's Field Survey 2018, Note: ***, **, *, Significant at 1%, 5% and 10% levels respectively.

The binary logistic regression model with four predictors produced Pseudo R^2 =0.1115, P <0.001. The Pseudo R-squared value indicates that 11.15 percent of the variation in the capacity building need is explained by the independent variables. It has been opined that studies in fields that attempt to predict human behavior typically have low R^2 values as humans are harder to predict than physical processes (Martin, 2012). Educational status: The result in Table 6 showed that the years of fishing experience has a positive coefficient (0.3448) and also a determinant of capacity building needs on fishing practices (p<0.10). This suggest that an increase in the level of education will likely increase the fisher folks' capacity building needs. Education will enable a fisher to make independent choice and act on the basis of the decision. Years of Experience: The result showed that years of fishing experience has a negative coefficient (-0.0497) and also a determinant of capacity building needs on fishing practices (p<0.10). This result implies that the higher the years of fishing experience, the lower the capacity building needs of the respondents. This implies that wealth of experience has influence on the fisher folks' skills. This may be expected as the fisher folks must have acquired enough fishing skills over the years. This result agrees with the findings of Alarima *et al.,* (2011) who reported that training needs of rice farmers in Nigeria decreases with increase in the years of farming experience.

Contact with Extension Services has a positive coefficient (0.5815) and also a significant factor influencing fisher folks' capacity building needs (p<0.01). This implies that the higher the number of contacts with extension services, the more the areas of capacity building needs of the fisher folk. This might be attributed to the effectiveness of extension services in providing relevant information to the fishers. This result agrees with the findings of Etwire *et al.,* (2013) who reported that increase in number of contacts with extension services increases the farmers' likelihoods of participating in farmer associations in Northern region of Ghana. Craft Type has a positive coefficient (0.4583) and has a significant relationship with capacity building needs (p<0.05). A unit increase in number of crafts used for fishing activities will

increase the fisher folks' capacity building needs. This implies that acquisition of additional fishing craft would activate their capacity building needs.

4. Conclusion

The study examined the determinants of capacity building needs of artisanal fishers in Kogi State, Nigeria. Based on the findings of this study, the study concluded that the majority of the fisher folks had low knowledge level on fishing practices. Majority of the fisher folks had high capacity building needs. The areas of capacity building needs are on canoe use and maintenance, use and maintenance of multiple hooks, use of chorkor smokers and fish marketing and distribution. The educational status, years of experience on fishing activities, contacts with extension services and craft type are the determinant factors of capacity building needs of the fisher folks.

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