



Assessment of the sustainable practices by artisanal fishers' association in Ilaje Local government area of Ondo State, Nigeria

Joshua Babatunde Ogunremi ^{1*}, Oluwafemi Olowojuni ², Olalekan Jacob Olaoye ³

¹ Department of Fisheries and Aquaculture, Federal University, Wukari, Taraba State, Nigeria

² Department of Biological Sciences, Ondo State University of Science and Technology, Nigeria

³ Agricultural Media Resource and Extension Centre, Federal University of Agriculture, Abeokuta, Nigeria

Abstract

The study considered the sustainable practices by artisanal fishers association in Ilaje local Government Area in Ondo State, Nigeria. Multistage random sampling technique was used to select three hundred and twenty four artisanal fishers' association members from the study area. Structured questionnaire and in-depth guided interview were used as instrument for data collection. Data collected were analyzed through descriptive statistics and multiple regression was used to determine the significance of the variables. The results indicated that majority of the respondents were female (50.3%), married (94.8%) and 63.6% had over twenty years fishing experience. Report of water pollution to Government agencies (57.7%) and regulation of mesh size (57.4%) were the major sustainable practices by the respondents while Majority of the respondents (85.8%) agreed that there were penalties for the contravention of any sustainable practices set by the artisanal fishers' association, temporary ban from fishing (35.5%) and payment of monetary fine (33.3%) were penalties mostly used by the association. There was a significant relationship between sustainable practices and Gender ($\beta = -.197, P < .05$); Age ($\beta = -.254, P > .05$) and marital status ($\beta = .092, P > .05$). It is recommended that there is the need for the Federal and State Department of fisheries to train, equip and deploy Fisheries Officers to open water bodies to assist various artisanal fishers in improving sustainable practices.

Keywords: Artisanal; Association; Fishermen; Practices; Sustainable

Published by ISDS LLC, Japan | Copyright © 2018 by the Author(s) | This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Cite this article as: Ogunremi, J.B., Olowojuni, O. and Olaoye, O.J. (2018), "Assessment of the sustainable practices by artisanal fishers' association in Ilaje Local government area of Ondo State, Nigeria", *International Journal of Development and Sustainability*, Vol. 7 No. 4, pp. 1441-1448.

* Corresponding author. E-mail address: jogunremi@gmail.com

1. Introduction

Despite the fact that crude oil is of high importance to Nigerian economy, agriculture also play a significant role. Farmers in Nigeria still face various difficulties, such as low incomes, low yields, and shrinkage of agricultural labour despite the significance of agriculture to the economy (Nlerum and Ogu 2014). Different meanings are given to associations depending on the purposes and the profession of the people who are involved. However a co-operative can be defined as a voluntary association of individuals, who democratically organize business organization, operate at owned cost managed by members, patrons as users, sharing risks and benefits according to individuals' contribution to achieve a common economic goal (Kareem 2012).

A framework known as the Sustainable Livelihoods Approach (SLA) has recently proved to be very helpful in bringing a fuller understanding of fisher folk's adaptive strategies into the policy arena of small-scale fisheries management in low-income countries. Taking a wide view of the term sustenance, there are four key approaches to it – social, environmental, economical and institutional sustenance. All are significant and livelihood approaches seek equilibrium between them, which will often mean trade-offs and compromises must be made (Allison 2004). 'Sustaining livelihoods' of the poor rural fisher folks whose major profession is fishing requires accessibility to water bodies for fishing opportunity as a modern method of fisheries development. However, this appears to be basically incompatible with the current trend and attempt of reducing capacity and to create more effective barriers to entry to fisheries, in order to conserve fully endangered fish stocks thereby preventing extinction (Horemans, 2004).

There has been high level of awareness among user-groups to participate more actively in fisheries management. Actually, the major difference in the area of agriculture in general and fisheries in particular, is that the beneficiaries (i.e., the fishers) perform different roles (Samian et al., 2017). Over fishing resulting to depletion of the available fish resources intensively and frequently is an indication that the issue of sustainable exploitation of the fishery resources should be addressed. Preservation of the ecological and biophysical resources is major to sustain the exploitation of fishery resources. Present level of fish exploitation can be maintained consistently without compromising the tendency to meet the requirement of the future generation (Enaikele and Olutayo, 2010). In Nigeria, many professional bodies come together in form of association for the furtherance of their profession. On this basis and considering the absence of data on the contributions of artisanal fishers' associations on sustainability of renewable resources campaign by the Government, the study therefore considered the assessment of the sustainable practices by artisanal fishers' association in Ilaje Local Government area of Ondo State, Nigeria. The specific objectives are:

- Identify the demographic characteristics of artisanal fishers' association members
- Examine the sustainable practices of the respondents
- Identify the penalties for the contravention of any sustainable practices.

2. Materials and methods

2.1. Study area

The headquarters of Ilaje local government area located in the southern part of Ondo State, Nigeria is Igbokoda, situated between latitude 6° 21'0" N and longitude 4° 48'0" E. It has coastline area of about 80 Km which runs in a northwest to southeast direction (Olawusi-Peters et al., 2015). There are about 400 fishing communities scattered around the river tributaries and along the coast area of Ilaje Local Government Area. Substantial proportion of about 80% of the population in the study area are full time fishers whose catches accounts for the bulk of fish produced in Ondo State (Babatunde 2010).

2.2. Data collection and analysis technique

Multistage random sampling technique was used to first select twenty seven fishing communities and later twelve different artisanal fishers' association members were selected to make a total sampling population of three hundred and twenty four respondents from the study area. Structured questionnaire and in-depth guided interview were used as instrument for data collection. Data collected were analyzed through descriptive statistic.

3. Results and Discussion

3.1. Demographic characteristics of artisanal fishers' association members

Presented in Table 1 are the demographic characteristics of the artisanal fishers' association members interviewed. There is more female association members (50.3%) compared to male. The reason was because female usually have more expenses to male in an attempt to save and obtain loan they resulted to association membership. These results agreed with the general observation that since women forms a major percentage of the population in our rural communities it is also expected that more women are engaged in farming activities compared to males (Nlerum and Ogu 2014). Majorities are married (94.8%), and are within age bracket of 30-39 years (32.4%) with house hold size of 5-8 (45.4%). In terms of education, 33.6% had secondary education while majority of 63.6% had twenty years and above as the fishing experience.

Table 1. Demographic Characteristics

Variable	Frequency	%
Gender		
Male	161	49.7
Female	163	50.3
Total	324	100

Table 1. Cont.

Variable	Frequency	%
Age (yrs)		
20-29	79	24.4
30-39	105	32.4
40-49	83	25.6
50-59	24	7.4
60≥	33	10.2
Marital status		
Married	307	94.8
Divorced	16	4.9
Widowed	1	0.3
Household size		
1-4	60	18.5
5-8	147	45.4
9-12	76	23.5
13-15	20	6.2
16≥	21	6.5
Education		
Illiterate	107	33.0
Primary	78	24.1
Secondary	109	33.6
Tertiary	30	9.3
Fishing experience (yrs)		
1-4	12	3.7
5-10	74	22.8
11-14	20	6.2
15-19	12	3.7
20≥	206	63.6

3.2. Sustainable practices by artisanal fishers' cooperative society members

Table 2 indicated report of water pollution to Government agencies (57.7%), regulation of mesh size (57.4%) as the major sustainable practice by the respondents, awareness of fisheries rules and regulations in Nigeria was 18.5% while other sustainable practices were observed although minimal, ban on limitation on total catch and limit on length of time for fishing were not observed at all. Reporting water pollution to Government agencies is so crucial to fishers because in most cases it is beyond what they can handle and if not reported on time it would drastically affect the production of the fishers there by reducing their income and the overall effect is the reduction in protein supply from the sector which affects the Gross Domestic Production of the nation. Rathakrishnan et al. (2009) reported that sustainability of the traditional fishing practices is more important in the issue of environmental pollution control and bio diversity conservation.

The sustainable development of inland fishery has been reported to be threatened by pollution (Enaikele and Olutayo, 2010). The fishing regulations forbid the use of chemicals in fishing and the use of small gears to catch fingerlings Oruonye (2014). Crude fishing methods has been identified as a major threat to the development of artisanal fishery in general and the inland fishery stocks (Kallie et al., 2000; Solarin and Kusemiju, 2003). Regulation of mesh size is equally important if the issue of unchecked over fishing that result in stock depletion and extinct of endangered species is to be controlled. Regulation of mesh size if properly monitored should take care of restriction on sizes of fishes landed. Nets with small mesh sizes have devastating effects on fish species recruitment into the stock when they are used; small mesh sizes constitute a major problem because it results to over fishing and depletion of the fishery stocks.

Awareness of fisheries rules and regulation by various fishers societies will go a long way exposing them to practices which if not avoided is capable of jeopardizing their profession. Limit on total catch and limit on length of time for fishing though not observed are equally important practices that could help in sustaining fish stock. Hakhnazaryan (2007), observed that the role played by the government in regulating agriculture is minimal; therefore farmers argued that legal and political environment are not conducive to the development of agricultural sector Grigoryan et al. (2009) however opined that in agriculture there are fundamental laws, many sub legal acts needed to be updated and necessary amendments to the existing laws.

Table 2. Sustainable practices by fisher folks association

Variable	Yes	%	No	%
Ban on use of chemicals	1	0.3	323	99.7
Ban on use of explosive	3	0.9	321	99.1
Ban on closed season	15	4.6	309	95.4
Ban on closed area	10	3.1	314	96.9
Ban on limitation of total catch	-	-	324	100.0
Limit on length of time for fishing	-	-	324	100.0
Restriction on types of fishing gear	30	9.3	294	90.7
Restriction on sizes of fishes landed	24	7.4	300	92.6
Regulation of mesh size	186	57.4	138	42.6
Restriction on species of fish caught	41	12.7	283	87.3
Issue of fishing license to members	11	3.4	313	42.3
Report water pollution to government agencies	187	57.7	137	42.3
Fishing guard to monitor catches	25	7.7	299	92.3
Awareness of fisheries rules and regulations in Nigeria	60	18.5	264	81.5

3.3. Penalties for the contravention of any sustainable practices

Majority of the respondents (85.8%) agreed that there were penalties for the contravention of any sustainable practices set by the artisanal fishers' association (Table 3). Temporary ban from fishing (35.5%) and payment of monetary fine (33.3%) were penalties mostly used by the association. The essence of these is to serve as deterrent to members and also protect the overall interest of association members for continuous exploitation of the resources on a sustainable level. Oruonye (2014) in a similar study in Taraba State

reported that apart from Officers from the Ministry of Fisheries, traditional authority in the communities also play important role in ensuring compliance with fishery resource management practices such as assignment of use rights, arbitration in tenancy regulation, non use of chemicals in fishing and adherence to approved fishing gears. He added that no tenant fisher is allowed to engage in any unproductive activity in the studied area other than fishing. The fishers are also not allowed to use fishing techniques/gears other than the ones for which the prescribed rents have been paid for. Neiland et al. (2005) observed that many State fisheries Departments in Nigeria have been constrained for various reasons, including financial under-resourcing in their ability to assume the responsibilities of overseeing and regulating fisheries in their areas. There is paucity of data on fish stocks inevitably warrant the over dependency on pre cautioned approach as the only management option in the country.

Table 3. Penalties for the contravention of any sustainable practices

Variable	Yes	%	No	%
Penalty for contravention of any sustainable practices	278	85.8	46	14.2
Withdrawal of fishing license	2	0.6	322	99.4
Temporary ban from fishing	115	35.5	209	64.5
Permanent ban from fishing	4	1.2	320	98.8
Payment of fine (monetary)	108	33.3	216	66.7
Payment of fine (non- monetary)	3	0.9	321	99.1
Others	73	22.5	251	77.5

Table 4. Zero-order correlation showing the significant relationships between sustainable practices, gender, age, marital status, house size, educational background, years of experiencing in fishing of the artisanal fishers' association members

	1	2	3	4	5	6	7	Mean	S.D
1	1							12.05	1.11
2	-.197** .000	1						1.50	.50
3	-.254 .000	.030 .585	1					2.47	1.22
4	.092 .097	-.103 .063	-.150** .007	1				1.06	.24
5	-.211** .000	.024 .665	.618** .000	-.032 .572	1			2.37	1.06
6	.052 .350	.091 .101	-.181** .001	.122* .028	-.163** .003	1		2.19	1.00
7	-.134* .016	.013 .812	.491** .000	-.184** .001	.334** .000	-.140* .011	1	4.01	1.40

Keys: (1) Sustainable practices (2) Gender (3) Age (4) Marital status (5) House size (6) Educational background (7) years of experiencing in fishing

Results from Table 4 showed that there was significant relationship between sustainable practices and Gender ($\beta = -.197, P <.05$); Age ($\beta = -.254, P >.05$); marital status ($\beta = .092, P >.05$); and Household size ($\beta = -.211, P <.05$); no significant relationship exist between sustainable practices and educational background ($\beta = .052, P >.05$); and years of experiencing in fishing ($\beta = -.134, P <.05$). The implication is that gender, marital status and household size determines the sustainable practices among the respondents while educational back ground and years of fishing experience of artisanal fishers' association has nothing to do with sustainable practices.

4. Conclusion and recommendation

Majority of the respondents (85.8%) agreed that there were penalties for the contravention of any sustainable practices set by the artisanal fishers' association, temporary ban from fishing (35.5%) and payment of monetary fine (33.3%) were penalties mostly used by the association.

It is recommended that there is the need for the Federal and State Department of fisheries to train, equip and deploy Fisheries Officers to open water bodies to assist various artisanal fishers in improving sustainable practices. Public awareness campaign on various fisheries regulations should be given wide publicity among the artisanal fishers so that the end users will see the need for involvement in sustaining the resource. The Government should empower the artisanal fishers like their counterpart in other sector of agriculture as a way of motivation and appreciation of their roles in the development of the agriculture sub sector.

References

- Allison, E.H. (2004), "Potential applications of a 'sustainable livelihoods approach management and policy development for European inshore fisheries" available at: <http://www.vliz.be/imisdocs/publications/74377.pdf> (accessed September 2017).
- Babatunde, A. (2010), "The Impact of oil exploitation on the socioeconomic life of the Ilaje-Ugbo people of Ondo State, Nigeria", *Journal of Sustainable Development in Africa*, Vol. 12 No. 5, pp. 61-68
- Enaikele, M.D. and Olutayo, A.O. (2010), Explorative analysis of the effect of inland fisheries decree on sustainable exploitation of inland fisheries in Lagos State, *Nigeria Journal of Agricultural Extension and Rural Development*, Vol. 2 No.8, pp. 154-160
- Grigoryan, A., Hakhnazaryan, T., and Kwapong, N.A. (2009), "Farmer Organizations in Armenia's Agricultural Development", *Journal of Rural Cooperation*, Vol. 37 No. 1, pp. 88-100
- Hakhnazaryan, T. (200), Innovative Technologies in Cooperatives. European Regional Educational Academy pp. 34-56.
- Horemans, B. and Allison, E.H. (2004), Poverty Alleviation, Sustainable livelihoods and management in Small-scale Fisheries: Selected papers on issues and approaches International workshop on the implementation of

International fisheries instruments and factors of Unsustainability and overexploitation in fisheries FAO Report No. 782.

Kallie I, Taua .A, and Faasili. U. (2000), Community Based Fisheries Management in Samoa (in) Use of Property Rights in Fisheries Management FAO of United Nations, Rome, Italy, p. 304.

Kareem, R.O, Arigbabu, Y.D, Akintaro, J.A and Badmus, M.A. (2012). The Impact of Cooperative Society on Capital Formation (A Case Study of Temidere Co-Operative and Thrift Society, Ijebu- Ode, Ogun State, Nigeria), *Global Journal of Science Frontier Research Agriculture and Agriculture and Veterinary Sciences*, Vol. 12 No.11, pp. 17 – 29.

Neiland, A. E., Madakan S. P. and Bene, C. (2005), “Traditional Management Systems, Poverty and Changes in the Arid Zone Fisheries of Northern Nigeria”, *Journal of Agrarian Change*, Vol. 5 No. 1, pp. 117-148.

Nlerum, F.E., and Ogu, P.I. (2014), “Roles of farmers’ Cooperative Societies in Rural Development in Nigeria”, *Journal of Rural Cooperation*, Vol. 42 No.2, pp.154-162.

Olawusi-Peters¹, O.O., Ajibare, A.O. and Ajetunmobi¹, O.A. (2015), “Gillnet fishing in Igbokoda coastline area of ondo State, Nigeria Nigerian”, *Journal of Agriculture, Food and Environment*, Vol.11 No.1, pp. 13-18.

Oruonye, E.D. (2014), “The Challenges of Fishery Resource Management Practices in Mayo Ranewo Community in Ardo Kola Local Government Area (LGA), Taraba State Nigeria”, *Global Journal of Science Frontier Research: D Agriculture and Veterinary*, Vol.14 No.3 pp. 15-26.

Rathakrishnan, T., Ramasubramanian, M., Anandaraja, N., Suganthi, N., and Anitha S. (2009), “Traditional fishing practices followed by fisher folks of Tamil Nadu Indian”, *Journal of Traditional Knowledge*, Vol. 8 No. 4, pp. 543-547.

Samian, M., Heshmatollah, S., Asadi, M., Mirzaei, K., Ansari, E., Ahmadihagh, E. and Soleymani, A. (2017), “The role of fishing cooperatives on Social – Economic and cultural development of rural areas of Bord Khun city of Bushehr, Iran”, *Journal of the Saudi Society of Agricultural Sciences*, Vol. 16, pp. 178-183