

Artisanal Fishers Knowledge of Covid-19 and the Impact of Lock Down on Fishing in Igbomotoru Bayelsa State, Niger Delta

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ABSTRACT

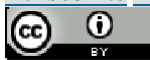
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The study was conducted with the aimed of identifying the impact of COVID-19 lock down on Artisanal Fishers and fishing operations. Data was collected through face-face interview. Fishers who had 15 years of fishing experience and above were involved in the research. Results showed that Fishers were well informed of COVID-19 pandemic. There was no case of COVID-19. Fishers could read and write as they had the basic primary education. Restriction on movement had major setback on the fishing operations of fishers and intermediaries given the low fish price and reduced movement of fish traders. Landings were very good during lock down. Poor before lock down dwindled down to good after the lock down due to human activities.

INTRODUCTION

The first case of severe acute respiratory syndrome Corona virus (SARS-COV2) was reported in Wuhan, China in the month of December 2019 and named COVID-19 from the World Health Organization. Its fast spread prompted the declaration of a global pandemic by the World health organization (WHO) in the first quarter of 2020 (WHO 2020). States were to take various restrictive measures to mitigate the spread of the disease. Different health laws such as use of mask, social distancing, lockdown of cities, washing of hands, using of sanitizers, restriction of movement, home confinement, business and market close down were initiated to control the spread of the disease.

In Nigeria, the first reported case was confirmed in February in Lagos by Federal Ministry of Health and it gradually spread over the whole country. As in other countries, the Federal government of Nigeria on March 29th declared an initial four weeks lockdown in Lagos, Abuja and Ogun. With the spread of the disease, other states were included in the lockdown. Further extension of the lockdown created panic in the consumers to buy food products in greater quantities that resulted to increase in the price of food items including fish. The pandemic created world health and economic crises, leading to increased incidence of poverty and food crisis especially on both agriculture and the fisheries (Sumner et al. 2020). This pandemic had affected almost every aspect of life in the society, including fishers and their families. The drastic implementation of COVID-19 lockdown in small-scale fisheries (SSF) affected fishers by closing of market channels that made it difficult for consumers to have access to fish and fish products.

Fisheries and aquatic resources are economically and ecologically important to Nigeria. Fisheries contribute about 3-5% to the National Gross Domestic Product (GDP) and more than 60% of world supply of protein (Olaoye and Ojebiyi 2018). It is one of the major sources of livelihood in the Niger delta (Ngodigha et al. 2013; 2015). Even though the COVID-19 pandemic disrupted the fishers' economy, most of them still fished every day and ignored its possible effect on their health and fishing costs (Kaewnuratchadasorn et al. 2020). This is because they have no alternative source of generating income and the aquatic organisms were not affected by the pandemic. Hence, there was no cause for alarm.

Various local and global studies have been conducted to investigate the impact of COVID-19 on artisanal fisheries but there has been no known research to assess the fishers' knowledge of COVID-19 and the impact on small-scale Fishers in Igbomatoru. Thus, the study was conducted to identify the impact of COVID-19 lock down on the artisanal fishers in Igbomatoru community in Bayelsa State, Niger Delta.

THEORETICAL REVIEW

The study is to determine Fishers knowledge of COVID-19 and how the lock down due to information and spread of the disease affected fishing activities in Igbomatoru. Human knowledge is the understanding of a subject

matter or information a person have or already has. Knowledge gained through authorities from scientific findings such as COVID-19 pandemic spreads fast to all areas including fishing communities. According to Wasave et al. (2021), age and education contribute highly to the knowledge, attitude and practice of Fishers of Maharashtra State of India. Despite the fact that the Fishers were not privileged as other areas, they were well informed of the COVID-19 diseases, its symptoms and precautions because unconcerned attitude of people leads to spread of the disease (Zhong et al.2017). Supporting Wasave et al. (2021) findings, Liu et al (2022) reported that better educated Fishers with higher income had more knowledge of COVID-19 in Fuqing, China. On the contrary, Fishers in Kashmir Valley though illiterates, were well informed of COVID-19 and so they acted accordingly to reduce spread of the disease (Siddique et al. 2022).And in fishing communities in Bangladesh, the crisis reduced demand for fish that brought about a fall in the price of fish negatively affecting Fishers livelihood(Hoque et al. 2021).

METHODOLOGY

Description of the project area

The study was conducted in Igbomotoru (Igbematoru) in the Niger Delta. Igbomotoru is a major community in Southern Ijaw Local Government Area of Bayelsa State, Niger Delta. The local government area is the largest in Bayelsa State and lies between longitude 6°00'10'' and 6°25'15''E and latitude 4°40'07'' and 5°5'20''N . There are predominately two seasons, which are the rainy season (April-October) and the dry season (November-March). To the north of Igbomotoru is Ikorumogbene while Lasgbene lies to the south of Igbomotoru. Lasukugbene lies to the east of Igbomotoru; Olugbogbene, Sabarugbene and Biabagbene lie to the west of Igbomotoru.

Data collection and Analysis

The study was conducted to determine Fishers' knowledge of COVID-19 and the impact on fishing in Igbomotoru. Initial fishers' knowledge of COVID-19 was gathered on renaissance visit to the study area. Primary data was collected from artisanal fishers. 65 Fishers were recorded in the study area, of which 45 were involved in the research based on their years of fishing experience of 15 years and above. Quality time was spent with informants in order to get the real situation. Face-to-face interview was freely conducted that involved the 45 informants. According to Johannes (1981), the fundamental principles for obtaining high quality local knowledge was applied where Fishers were at ease by social interaction (socio-ecological approach).

Fishers were asked questions on their fishing activities before the COVID-19, during the pandemic and after the lock down as it affects their income as fishers and the fish caught. Answers were assigned into categories. Five-point rating of Likert scale was used to assess landings and income, which had different levels rating. Level one - strong dislike and labelled "very bad", level two was dislike labelled "bad", level three = agreement level, meaning

“No difference”, level four – agreement level = “good” and level five – agreement level “very good”.

Fishers were asked if the number of trips per week and number of hours spent fishing per trip before and during the COVID-19 were the same. They were also asked if the same vessels and gears were used during the COVID-19. Reliability attribute to a measure’s ability to yield consistent value if multiple values are taken over time. Parallel form reliability was used to determine the reliability of interviews (Hair et al., 1998). Repeated answers on questions can also increase the level of confidence (Williams and Bax, 2007).

Validity refers to the extent the measures correctly represent the concept or construct intended and how well the construct is defined by the measure (Hair et al., 1998). Though the conversation was freely conducted, some specific topics were predetermined such as the Fishers’ knowledge of COVID-19

RESULTS

The common occupation of the inhabitants of Igbomotoru is fishing. Fishing activities were carried out all year round because some fishes are more abundant in a given period of the year than others. 65 persons were engaged in fishing in Igbomotoru. Males were 61.5% while the females were 38.5% (Table 1). All 65 fishers attended primary school, 26.2% attended secondary school while 7.7% are graduates of higher institutions. Forty-five Fishers were interviewed that had fished for 15 years and above and were composed of 30 males and 15 females.

Number of trips per week embarked by Fishers reduced from six before the lock down gradually to three during the lock down and increased to six after the lock down. Hours spent fishing per trip before and during the COVID-19 were same before and after the lockdown but less during the lock down. Same vessels and gears were used during the COVID-19.

Fishers’ knowledge of COVID-19 was through information from travellers that came into the community and those from the community that travelled out and came back. They were enlighten of the symptoms which were, fever, cough, tiredness, loss of taste or smell, headache, chest pain, difficulty breathing.

Parameters	Characteristics	Percentage (%)
Age	< 40	23.08
	>40	76.92
Gender	Males	61.5
	Females	38.5
Educational qualification	Primary	100
	Secondary	26.2
	Higher institution	7.7

Occupation	Fishing	100
	Others	50
Fishing experience	< 15	30.8
	>15	69.2

Table 1: Demographic characteristics of Artisanal Fishers in Igbomotoru Community

Impact of COVID-19 on Fishers livelihood was very bad. Landings during lock down were very good, while landings three months after lockdown were good and landings before lock down were bad (Table 2). Income of Fishers was poor before and during the lock down but good after lock down (Table 3). Movement restrictions significantly affected the fishers due to its effect on fish supply and demand. Ban on movement associated with the COVID-19 pandemic constituted a threat on the ability of Fishers to market their products eventually leading to a short in fish supply.

Impact of COVID-19 lock down	1	2	3	4	5	Score	Points	Rank
Landings before lock down	32	5	3	4	1	72	1.60	x
Landings during lock down	2	3	5	16	19	182	4.04	xxx
After the lock down (3 months)	4	9	11	11	10	149	3.31	xx

Table 2: Impacts of COVID-19 Lock down on artisanal fishing in Igbomotoru
<2.99 (x) = very bad; 3.00 – 3.99 (xx) = Good; 4.00 – 4.99 (xxx) = very good.

Impact of COVID-19 lock down	1	2	3	4	5	Score	Points	Rank
Income before lock down	34	3	5	2	1	68	1.51	x
Income during lock down	32	3	5	3	2	75	1.67	x
Income after the lock down (3 months)	3	10	10	12	10	151	3.36	xx

Table 3: Impacts of COVID-19 Lock down on Artisanal fisher's income in Igbomotoru
<2.99 (x) = very bad; 3.00 – 3.99 (xx) = Good; 4.00 – 4.99 (xxx) = very good

DISCUSSION

Inhabitants of Igbomotoru irrespective of age and sex fish during the wet and dry seasons as fishing is based on fishing calendar that has been used for years. This finding agrees with Ngodigha et al. (2018a) in their study of using Fisher's knowledge in community based Fisheries management in River Nun Estuary, Niger Delta. Most fishing activities were done during the raining Season, as it is believed to be the period of abundant catch (Ngodigha and Gbarabe 2015; Ngodigha et al. 2015). Fishers' knowledge of fishing is directly related to fishing success, so it is very important to them (Ngodigha et al. 2015). Such knowledge is essential for successful fishing practices (Symes 2008), in

using the right fishing materials and equipments. The research is reliable with a high level of confidence because observations of daily activities repeated over time can increase the level of confidence (Williams and Bax 2007).

Fishing is based on the abundance of different fish species during the year. Even though most fish species are caught all year round (Ngodigha et al. 2013), Fishers tend to concentrate their catch on the most abundant fish species at a given time. The fishing calendar is base on Fishers' experience gained over the years, which enables them to know when and where to harvest a particular fish species. Hence, Fishers went fishing irrespective of the lock down in order to meet their financial needs.

All Fishers in the study area were schooled to at least the basic educational level indicating that Fishers can read and write and understood the research after explaining it to them. Participants who had fished for a minimum of 15 years were interviewed for the purpose of the study. The total number was 45 constituting of 30 males and 15 females.

Youths, below 40 years were not identified because they were not around. They have the conviction that the artisanal fishery business is not a lucrative one (Ngodigha et al. 2018b). This view has prompt most of them to be engaged in illegal crude oil refining business due to poverty (Arugu and Eseduwo, 2014) as they believe strongly that it will greatly improve their finances.

Fishers are of the opinion that the COVID-19 symptoms were malaria symptoms that could be treated in the local traditional method. No record of COVID-19 was reported in the community. This could be due to either the local herbs taken regularly by Fishers or persons having COVID-19 never travelled to the community. Since COVID-19 does not affect aquatic species, Fishers interaction with migratory aquatic organism could not introduce COVID-19 to the area nor could Fishers contract the disease.

Restriction on movement had a great impact on the artisanal fisheries sector in Igbomotoru. In developing countries, the impact of COVID-19 was expected to take a significant toll on global fisheries with predictions of potentially negative consequences for the livelihood and income of the Small Scale Fishers (FAO 2020a). Artisanal Fisheries also known as Small-scale fisheries contribute to coastal communities' social and economic development as they provide food, livelihood, and income to the poor vulnerable and marginal sectors (FAO 2020b). The poor income of Fishers during the lock down could be connected to the fact that buyers were prevented from coming to the community to buy the fish products and Fishers were not able to travel out to sell resulting in lower prices of fish products. This led to many Fishers reducing their fishing activities. Some had to completely stop as their work had become unprofitable. This finding agrees with FAO (2021) and Adibie et al. (2021) that COVID-19 lockdown had serious negative implications on the fish suppliers. Thus, leading to a decrease in prices of fish in the fishing community, that had negative effect on Fishers finance.

On a brighter note, the aquatic ecosystems had an intangible respite from overfishing pressures due to the laws on restrictions. This assertion agrees with

the findings of Ngodigha et al. (2018a) that a Fishery could recover if there are laws limiting fishing activities on the fish stock. Fishers complained of very poor landing before the COVID-19 as this could be due to the crude oil pollution in the area (Arugu and Eseduwo 2014) as well as indiscriminate fishing activities (Ngodigha et al. 2018b). As against very bad landing before the lock down, fish landings improved tremendously during the lock down (Table 2). This supports the fact that crude oil refining activities contributed to fish stock depletion in the area and worsen by fishing pressure as reported by Ngodigha et al. (2018b) in the study of Status and Constrains of Artisanal Fisheries in Ekperiamama (Ekperikiri) Fishing Area, Niger Delta. A further support of the negative effect of human activities on the ecosystem was the gradual reduction in catch as the lock down was lifted (Table 3). As explained by Fishers, the increase in income after the lock down could be attributed to high sale of fish landings that was “good” immediately after the lock down. There was easy movement of fish and fish produce out of Igbomotoru and cash flow of money into the community was greatly improved.

CONCLUSIONS

The global pandemic COVID-19 was declared by the World Health Organization in the year 2020. Countries had to put up several measures such as restriction of movement and lock down to curtail the spread of the disease. Lock down was also declared by the Nigerian government in March when the pandemic was first reported in February. Fishers were affected directly due to the lock down imposed by the government to reduce spread of the disease. The study showed that COVID-19 tremendously affected the fishers and their fish catch both economically and socially. Lock down had major setback on the fishing operations of fishers as there were no buyers of their products . Intermediaries were also affected by restricted movement causing reduction in fishing activities since it was not profitable. Though the Fishers were greatly affected, the aquatic ecosystem had a chance to recover due to low fishing pressure.

FURTHER STUDY

More studies should be conducted in other fishing communities to ascertain the level of compliance and the effect of COVID-19 on artisanal fisheries in the Niger Delta.

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REFERENCES

- Adibie, O., Morris, R., & Ozigbu, J. (2021). Economic Implications of COVID-19 Lockdown on Fish Suppliers in Port Harcourt City, Rivers State, Nigeria. *Asian Journal of Economics and Financial Management*. 5(3): 1-5
- Arugu, L.O., & Eseduwo, F.S. (2014). Poverty and sustainable development in Bayelsa State: A Survey of selected communities in Southern Ijaw Local Government Area of Bayelsa State. *International Journal of Advanced Studies Ecological Development and Sustainability*, 2(1):1741-8771.
- FAO. (2020a). Summary of the Impacts of the Covid-19 Pandemic on the Fisheries and Addendum to the State of World Fisheries and Aquaculture. Rome: FAO.
- FAO. (2020b). How is Covid-19 outbreak Impacting the Fisheries and Aquaculture Food Systems and What can FAO do. Rome: FAO.
- FAO. (2021). The Impact of COVID-19 on Fisheries and Aquaculture Food Systems, Possible Responses. Rome: FAO.
- Hair, J., Anderson, R., Tatham, R., & Black, W. (1998). Multivariate data analysis, 5th edition, Prentice-Hall, Inc. Upper Saddle River, New Jersey, ISBN 0-13-894858-5, 1-15. Johannes RE. 1981. Working with fishermen to improve coastal tropical fisheries and resource management. *Bulletin of Marine Science*. 31 (3): 673-680.
- Hoque, M.S., Bygvraa, D.A., Pike, K., Hasan, M.M., Rahman, M.A., Akter, S., Mitchell, D., & Holliday, E. (2021). Knowledge, Practice and economic impact of COVID-19 on Small-scale coastal fishing communities in Bangladesh: Policy recommendation for improved livelihood. *Marine Policy*. Doi: 10.1016/j.marpol.2021.104647
- Kaewnuratchadasorn, P., Smithrithee, M., Sato, A., & Wanchana, W. (2020). Capturing the impacts of COVID-19 on the fisheries value chain of Southeast Asia. *Fish People*. 18: 2-8.
- Knowledge in Fisheries; Research in Ogbia Creek, Niger Delta. *International Journal of Novel Research in Life Sciences*. 2 (5): 41-49.

- Liu, Xiaojun., Du, S., Feng, R., Yan, L., Huang, Y., & Ye W. (2022). Knowledge of COVID-19 and its prevention among rural residents in Fuqing, China. *International Journal of Nursing Sciences*. 9(2): 196-202
- Ngodigha, S.A., & Gbarabe, R. (2015). Local Ecological knowledge on Palaemon shrimp in River Nun Estuary, Niger Delta. *Journal of Ecology*. 2(3): 1-12.
- Ngodigha, S.A., Abowei, J.F.N., & Ogamba, E.N. (2015). The Role of Indigenous Knowledge in Fisheries; Research in Ogbia Creek, Niger Delta. *International Journal of Novel Research in Life Sciences*. 2 (5): 41-49.
- Ngodigha, S.A., Alagoa, K.J., & Abowei, J.F.N. (2018b). Status and Constrains of Artisanal Fisheries in Ekperiana (Ekperikiri) Fishing Area, Niger Delta. *Annals of Ecology and Environmental Science*. 2 (4): 24-29. ISSN 2637-5338.
- Ngodigha, S.A., Gbarabe, R., & Abowei, J.F.N. (2013). Palaemon Fishery in River Nun Estuary Bayelsa State, Niger Delta. *African Science and Technology Journal*. 7 (1). 142-149. ISSN: 1786-7711
- Ngodigha, S.A., Gbarabe, R., & Austin, A. (2018a). Using fisher's knowledge in community based fisheries management in River Nun Estuary, Niger Delta. *Transylvanian Review of Systematical and Ecological Research*. 20 (2): 75 - 84. DOI: 10.2478/trser-2018-007. DOI: 10.2478/trser-2018-0007.
- Olaoye, O.J., & Ojebiyi, W.G. (2018). Marine Fisheries in Nigeria: A review: In :Turkoglu M, Onal U, Ismen A, editors. *Marine Ecology- Biotic and Abiotic Interactions*. Doi: 10.5772/intechopen.75032.
- Siddique, I.F., Malik, R., & Zhoor, A .B. (2022). Assessment of knowledge regarding novel corona virus (COVID- 19) among Fishers in Kashmir Valley. *The Journal of Phytopharmacology*. 11(3): 167-172
- Sumner, A., Hoy, C., & Ortiz-Juarez, E. (2020). Estimates of the Impact of COVID-19 on Global Poverty. Helsinki: UNU-WIDER. Doi:10.35188/UNU-WIDER/2020/800-9.
- Symes, D.(2008). Fishers' knowledge in fisheries science and management. [Book review.] *Fisheries Resources*. 89: 309-310. doi:10.1016/j.fishres.2007.10.001.

- Wasave, S., Wasave, S., Chaudhari, K., Shingare, S., Yadav, B., Patil, S., & Naik, B. (2021). Knowledge, Awareness & Practice (KAP) towards COVID-19 among the marine Fishers of Maharashtra State of India. *PLOS One*. 16(12):e0261055. Doi:10.1371/journal.pone.0261055.
- Williams, A., Bax, N. (2007). Integrating fisher's knowledge with survey data to understand the structure, ecology and use of a seascape off south-eastern Australia, in *Fishers' knowledge in fisheries science and management. Coastal Management Source-books*, 4, Haggan N., Neis B. and Baird I. G. (eds), UNESCO Publishing, Paris, 365-380.
- World Health Organization. (2020). Covid-19 Strategy Update. Available online at: https://www.who.int/docs/default-source/coronaviruse/covid-strategy-update-14april2020.pdf?sfvrsn=29da3ba0_19 (accessed April 3, 2018).
- Zhong, B.L., Chen, S.L., Tu, K., & Conwell, Y. (2017). Loneliness and cognitive function in older adults. Findings from the Chinese Longitudinal Healthy Longevity Survey. *Journal Gerontology Psychological Science and Social Science*. 72:120-128