



## Illegal Fishing (IUU) Activities in Nigeria Territorial Waters and Its Economic Impacts

*Sule Abiodun*

Niomr Research Lagos, Nigeria

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### ABSTRACT

The coastal waters of Nigeria, as is peculiar to most West African countries, is home to a diverse species of fish, which enhances the food and economic security of the country. In 2019, the GDP contribution from small scale and industrial fishing alone was pegged at 0.84% and in 2020 was pegged at 1.09%. This indicates that the fishing sector contributes to the socioeconomic development of the country but is however confronted by threats such as environmental pollution and illegal fishing. This study investigated illegal fishing (IUU) activities in Nigeria territorial waters and its economic impacts. The study was carried out among fishers in artisanal communities in Epe local government area of Lagos state. It was a descriptive survey in which 50 fishermen were randomly selected as respondents for the study. Questionnaire was adopted for data collection and data collected was analyzed using frequencies and percentages. The hypothesis formulated was tested using Chi Square. The result indicated that Illegal, Unreported and Unregulated (IUU) fishing activities have significant economic impact to the nation, or state under study – in this case, Lagos state. This may be so since illegal fishing leads to indiscriminant killing of fish which could not only destroy marine ecosystem but can also leads to extinction of endangered species, threatens food security, results in economic losses for legitimate fishers and fisheries. Based on this result, conclusion was drawn and recommendations made.

**Keywords:** Illegal Fishing, IUU, Nigeria Territorial Waters, Economic Impact

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### 1 INTRODUCTION

The coastal waters of Nigeria, as is peculiar to most West African countries, is home to a diverse species of fish, which enhances the food and economic security of the country. In 2019, the GDP contribution from small scale and industrial fishing alone was pegged at 0.84% and in 2020 was pegged at 1.09% (Okafor-Yarwood&Bhagwandas, 2016). This indicates that the fishing sector contributes to the socioeconomic development of the country but is however confronted by threats such as environmental pollution and illegal fishing. IUU fishing is reported to be an attractive activity to fishermen, as no taxes are paid on the catches made; as such it is done with reckless abandon. This situation typically occurs in territorial waters of countries without contemporary fishery control structure; as well as countries characterized by inability to enforce laws, corruption, and weak governance (World Ocean view, 2013).

Continuous illegal, unreported, and unregulated (IUU) fishing is an activity that causes harm by way of undermining and preventing the implementation of sustainable fisheries policies, encouraging transnational criminal activities, encouraging human trafficking, upsetting livelihoods, hindering food and economic security. IUU fishing increases tension and piracy between countries. IUU fishing describes a range of fishing activities that weakens the management of fishery activities and is usually unreported. Economically and socially, it disrupts fishing operations and affects those who are dependent on fisheries. This activity also causes diversion of revenues from developing economies and threatens the development of fish stocks (National Intelligence Council, 2016).

The IUU fishing employs destructive fishing practices and utilizes labour illegally, which makes it profitable at the expense of local fishers and the marine environment. Countries have not been able to make positive achievements in enacting and enforcing regulations to curb these practices (Widjaja, Long, Wirajuda, et al., 2019). In effect, a nation becomes affected by these illegal fishing activities. To this end, the paper investigates illegal fishing (IUU) activities in Nigeria territorial waters and its economic impacts.

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## Statement of research problem

In Nigeria, it is estimated that \$70 million is lost to illegal fishing annually through avenues such as taxation, license fees and other value brought about from legal fishing activities by local vessels. The annual cost of illegal fishing in Nigerian territorial waters is estimated to be between \$600 million and \$800 million (Okafor-Yarwood&Bhagwandas, 2016). This figure is not accurate based on the inability to monitor, control and survey the activities of operating vessels in Nigeria. Vessels which are known for their illegal exploitation in Nigeria territorial waters are usually from the European Union, China and Belize. The implication of the foregoing illegal fishing activities in Nigeria is considered high in terms of economic losses. Economically, IUU fishing is reported to impact on fishers and consumers in a positive way through returns to the fishers and affordability to consumers. Its negative impact on the other hand results from reduced fish stock which causes a rise in fishing costs and economic losses to the tourism sector (Zimmerhackel et al., 2018). Thus, the study seeks to conduct a further investigation on illegal fishing (IUU) activities in Nigeria territorial waters and its economic impacts.

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## Research objectives

Generally, the study aims to assess the illegal fishing (IUU) activities in Nigeria territorial waters and its economic impacts. Specifically, the study seeks to;

1. Identify the factors that influence illegal fishing (IUU) activities in Nigeria territorial waters.
2. Examine the impact of illegal fishing (IUU) activities in Nigeria territorial waters.
3. Assess the economic impact of illegal fishing (IUU) activities on Nigeria territorial waters.

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## Research questions

1. What are the factors that influence illegal fishing (IUU) activities in Nigeria territorial waters?
2. What is the impact of illegal fishing (IUU) activities in Nigeria territorial waters?
3. What is the economic impact of illegal fishing (IUU) activities on Nigeria territorial waters?

## Research hypothesis

**H<sub>0</sub>:** Illegal fishing (IUU) in Nigeria territorial waters does not have economic impact

**H<sub>1</sub>:** Illegal fishing (IUU) in Nigeria territorial waters does have economic impact

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## Literature review

Illegal, unreported and unregulated fishing (IUU) comprises all fishing activities that break fisheries laws and regulations or take place outside their range (Aldred, 2021). "Illegal" refers to conduction of fishing activities by foreign vessels under a state's jurisdiction, without permission, breaching its laws and regulations. "Unreported" denotes fishing activities that have not been reported or misreported to the relevant authority in violation of national laws and regulations. "Unregulated" denotes to fishing activities that are carried out by vessels without nationality, flying the flag of a State not party to that organization or a fishing entity, in a manner that is not consistent with the conservation and management measures of that organization (Omar, Mohamed &Bambale, 2019). In other words, fishing activities in areas where there are no relevant conservation or management measures. A lot of unregulated fishing takes place on the high seas.

IUU fishing constitutes a severe danger because it contributes to fish populations being over-exploited, encumbering their recovery and being detrimental the marine environment. It destabilizes the sustainability of oceans in the world as thousands of aquatic species die as [bycatch](#) and delicate habitats are wrecked by the unregulated use of [destructive practices](#) like bottom-trawling (Aldred, 2021). Illegal fishing involves the use of fishing methods that are destructive such as blast or dynamite fishing, bottom trawling, overfishing, electrofishing, cyanide fishing which threaten or kill marine life.

Coastal waters contain different species of fish in Nigeria, as in most countries in the West of Africa, and these contribute to the food and economic security of its people. The fisheries sector is a means to developing the socioeconomic sector in Nigeria as small-scale fishing operations contribute to locally produced fish and support the incomes of millions of Nigerians. Economic losses are caused by illegal fishing in and vessels from Belize, China, and the European Union are notable for illegally exploiting Nigerian waters ([Okafor-Yarwood&Bhagwandas, 2021](#)).

### *Consequences of IUU fishing*

It destroys marine ecosystem and threatens the extinction of endangered species, threatens food security, results in economic losses for legitimate fishers and fisheries. IUU fishing causes fish populations to deplete thereby driving genuine fishers to engage in IUU fishing so as to remain competitive or merely to stay in business. Another effect is decreased income and employment from fishing industries and other connected industries like processing, packaging, marketing and transport (Bondaroff, Reitano&Wietse, 2015).

Nigeria is among the highest producers in fisheries and aquaculture globally yet loses \$10 billion per annum to illegal fishing. Economic growth as well as the livelihood of women (who play a key role, providing labour in commercial and artisanal fisheries while acting as small-scale entrepreneurs) and the fishing communities are being undermined (Ojekunle, 2020). The livelihoods of people are affected by illegal fishing, thereby pushing fishing communities further into poverty.

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### **Empirical studies**

In a study by Fillie (2019) to evaluate the possible minimum and maximum values of illegal fish-catch in Sierra Leone by industrial fishing vessels from 2009 to 2018, results revealed that the country lost millions of dollars to IUU fishing and that IUU fishing severely impacted artisanal fishers as fish stock was being depleted, and there were insufficient substitute employments to engage those fishers pulling out of fishing.

Omar, Mohamed and Bambale (2019) analysed the impacts of IUU fishing on developing countries using selected coastline such as in the town of Bosaso, Northern part of Somalia as a cases study. Data was collected using documented study and interviews of fishermen and government officials. Findings revealed that lack of employment caused fishermen living along coastal areas to get involved in IUU fishing, IUU fishing activities restricts exports and makes boosting the country's economy less efficient.

Roman (2020) investigated the economic effects of IUU fishing on households of small scale fishermen in AoNoiSubdistrict of PrachuapKiri Khan Province in Thailand. A mixed quantitative and qualitative approach was used for a better comprehension of the intricacy of fishing-related changes to household income. The main results showed that the fishermen have felt some progress through the regrowth of fish stock and the implementation of stricter regulation for commercial vessels.

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### **Theoretical framework: Situational Crime Prevention (SCP) theory**

This theory assumes that physical opportunities allow crimes to happen and offers a variety of techniques and strategies to prevent and reduce crime (Iwanicki, 2016). The theory pays close attention to the role of opportunity in crime prediction and prevention. To understand why crime takes place, more emphasis should be laid on the opportunity structures shaping crime routes than the criminal dispositions or motivations. SCP opines that precautionary measures should be planned around altering the near situational, rather than concentrating on the distant dispositional causes of crime. Such an approach is grounded on the expectation that concentrating on the direct connection between cause and effect will not only lead to effective crime reduction, but also likely lead to a more immediate result on crime (Clarke, 2017).

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### **Methodology**

Descriptive research survey was employed in the conducting this study. The population of study comprised of fishers in artisanal communities in Epe local government area of Lagos state. From this community, 50 fishermen were randomly selected as respondents for the study. The instrument used for data collection was the questionnaire which was structured using a four point likert scale format. The assistance of research assistants were solicited in distributing the questionnaires, as majority of the respondents were illiterates and required assistance in understanding and filling the questionnaire. The data collected was descriptively analyzed using mean and percentages.

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### **Data presentation and Analysis**

**RQ1: What are the factors that influence illegal fishing (IUU) activities in Nigeria territorial waters?**

**Table 1: Factors that influence illegal fishing (IUU) activities in Nigeria territorial waters**

Statement		SA	A	D	SD	% in agreement
Weak governance at all levels that creates an easily evadable regulatory patchwork	F	24	18	3	5	84.0
	%	48.0	36.0	6.0	10.0	
Lack of surveillance, monitoring and consistent prosecution of illegal activities	F	27	19	3	1	92.0
	%	54.0	38.0	6.0	2.0	
Economic incentives for illegal fishing	F	33	13	3	1	92.0
	%	66.0	26.0	6.0	2.0	
Logistical difficulties in monitoring and reaching vast areas of the ocean	F	29	21	0	0	100.0
	%	58.0	42.0	0	0	

Field survey (2021)

The table above presents the respondents opinions on the factors that influence illegal fishing (IUU) activities in Nigeria territorial waters. As indicated in the table, 84% of the respondents are in agreement to the statement that 'Weak governance at all levels that creates an easily evadable regulatory patchwork'; 92% are in support that 'Lack of surveillance, monitoring and consistent prosecution of illegal activities' are the primary cause of illegal fishing; 93% agreed that to the statement that illegal fishing has economic incentives; while 100% are in support that 'Logistical difficulties in monitoring and reaching vast areas of the ocean' are primary factor motivating illegal fishing in Nigeria territorial waters.

**RQ2: What is the impact of illegal fishing (IUU) activities in Nigeria territorial waters?**

**Table 2: the impact of illegal fishing (IUU) activities in Nigeria territorial waters**

Statement		SA	A	D	SD	% in agreement
Illegal fishing (IUU) activities threatens the extinction of endangered species	F	10	28	5	7	76.0
	%	20.0	56.0	10.0	14.0	
Illegal fishing (IUU) activities threatens food security	F	34	15	0	1	98.0
	%	68.0	30.0	0.0	2.0	
Fish populations become depleted thereby driving genuine fishers to engage in IUU fishing to stay in business	F	15	29	6	0	88.0
	%	30.0	58.0	12.0	0.0	
Illegal fishing (IUU) activities increases tension and piracy between countries.	F	19	22	0	9	82.0
	%	38.0	44	0	18	
Illegal fishing (IUU) activities threatens the development of fish stocks	F	24	18	3	5	84.0
	%	48.0	36.0	6.0	10.0	
Illegal fishing (IUU) activities exacerbates the effects of climate change on ocean resources	F	27	19	3	1	92.0
	%	54.0	38.0	6.0	2.0	
Illegal fishing (IUU) activities threaten military conflict over scarce resources	F	39	10	0	1	98.0
	%	78.0	20.0	0.0	2.0	

Field survey (2021)

The table above presents the respondents opinions on the impact of illegal fishing (IUU) activities in Nigeria territorial waters. As indicated in the table, 76% of the respondents are in agreement to the statement: 'Illegal fishing (IUU) activities threatens the extinction of endangered species'; 98% agreed that "Illegal fishing (IUU) activities threatens food security"; 88% supports that "Fish populations become depleted thereby driving genuine fishers to engage in IUU fishing to stay in business"; 82% are of the opinion that, "Illegal fishing (IUU) activities increases tension and piracy between countries"; 84% are of the view that "Illegal fishing (IUU) activities threatens the development of fish stocks"; 92% are in

agreement that “Illegal fishing (IUU) activities exacerbates the effects of climate change on ocean resources”; while 98% agreed that “Illegal fishing (IUU) activities threaten military conflict over scarce resources”. This indeed shows that illegal fishing has significant negative impact in Nigeria territorial waters.

**RQ3: What is the economic impact of illegal fishing (IUU) activities on Nigeria territorial waters?**

**Table 3: the economic impact of illegal fishing (IUU) activities on Nigeria territorial waters**

Statement		SA	A	D	SD	% in agreement
Illegal fishing (IUU) activities decreases income and employment from fishing industries and other connected industries	F	21	19	4	6	80.0
	%	42.0	38.0	8.0	12.0	
Illegal fishing (IUU) activities results in economic losses for legitimate fishers and fisheries.	F	10	28	5	7	76.0
	%	20.0	56.0	10.0	14.0	
Livelihoods of people are affected by illegal fishing, thereby pushing fishing communities further into poverty	F	39	10	0	1	98.0
	%	78.0	20.0	0.0	2.0	
Illegal fishing (IUU) activities hinders food and economic security	F	34	15	0	1	98.0
	%	68.0	30.0	0.0	2.0	
Illegal fishing (IUU) activities creates diversion of revenues	F	41	8	1	0	98.0
	%	82.0	16.0	2.0	0.0	
Local disorder among fishers due to decrease in household income from reduced catch opportunities and reduced employment.	F	15	29	6	0	88.0
	%	30.0	58.0	12.0	0.0	
Illegal fishing (IUU) activities forces fishers to face loss of market share and trade distortions due to the different cost structures of legal and illegal operators	F	30	15	1	4	90.0
	%	60.0	30.0	2.0	8.0	

Field survey (2021)

The table above presents the respondents opinion on the economic impact of illegal fishing (IUU) activities on Nigeria territorial waters. As indicated in the table, with above 75% agreement to all the statements presents in the table above, the study conclude that illegal fishing activities on Nigeria territorial waters results in adverse economic impact such as decreases income and employment from fishing industries and other connected industries (80.0%); economic losses for legitimate fishers and fisheries (76%); Livelihoods of people are affected by illegal fishing, thereby pushing fishing communities further into poverty (98.0%); hinders food and economic security(98.0%); creates diversion of revenues (98.0%); Local disorder among fishers due to decrease in household income from reduced catch opportunities and reduced employment (88.0%); and forces fishers to face loss of market share and trade distortions due to the different cost structures of legal and illegal operators (90%) .

**Test of Hypothesis**

**H0: Illegal fishing (IUU) in Nigeria territorial waters does not have economic impact**

**H1: Illegal fishing (IUU) in Nigeria territorial waters does have economic impact**

The Chi Square Table indicated that there is a significant association between illegal fishing (IUU) activities in Nigeria territorial waters has economic impact since the critical value 0.0395 is less than the significant value of 0.05. Thus we reject the null hypothesis in favour to the alternative hypothesis which implies that Illegal fishing (IUU) in Nigeria territorial waters does have economic impact.

**Table 4: Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.539 <sup>a</sup>	5	.0395
Likelihood Ratio	9.844	10	.0454
Linear-by-Linear Association	.272	15	.002
N of Valid Cases	50		

a. 12 cells (66.7%) have expected count less than 5. The minimum expected count is .13.

## Discussion, Conclusion and recommendations

The outcome of this study indicates that Illegal, Unreported and Unregulated (IUU) fishing activities have significant economic impact to the nation, or state under study – in this case, Lagos state. This may be so since illegal fishing leads to indiscriminant killing of fish which could not only destroy marine ecosystem but can also leads to extinction of endangered species, threatens food security, results in economic losses for legitimate fishers and fisheries. This result therefore confirms earlier studies like Bondaroff, Reitano and Wietse(2015) who also revealed that IUU fishing causes fish populations to deplete thereby driving genuine fishers to engage in IUU fishing so as to remain competitive or merely to stay in business. Apart from depleting the population of the fish is the fact that it leads to economic loss. The result confirms that of Ojekunle (2020) who revealed that Nigeria loses above \$10 billion per annum to illegal fishing. The livelihoods of people are affected by illegal fishing, thereby pushing fishing communities further into poverty. In same vein, the study supports Agnew and Barnes (2004) who shared that IUU fishing leads to unemployment fishermen, as well as the women who take part in the fish processing and fish trading. The study also supports Neiland, (2016) whose study also revealed that IUU leads to both economic and biological overexploitation.

In view of this finding, the study concludes that Illegal fishing (IUU) in Nigeria territorial waters does have economic impact. To this effect, the study recommends an established electronic data base capturing of daily catch report of all industrial fishing vessels operating with Nigeria territorial waters to ensure that they do not exceed the allowable catch. The study further recommends that there should be an established taskforce to be put on patrol as well as offshore patrol vessels for used in the patrol with the aim of regulating the activities of fishermen as well as preventing the excesses of IUU fishing activities. Again, the government should provide established navy force to engage in constant inshore patrol so as to stop industrial fishing vessels from fishing in areas that are prohibited by law.

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**APPENDIX****ILLEGAL FISHING (IUU) ACTIVITIES IN NIGERIA TERRITORIAL WATERS AND ITS ECONOMIC IMPACTS REQUEST FOR INFORMATION**

Dear Respondent,

I am carrying out a study on “illegal fishing (IUU) activities in Nigeria territorial waters and its economic impacts”, and you have been chosen to be part of the study. This questionnaire is only for academic purposes. Kindly select the response which applies to you and all information will be kept confidential

**SECTION B:**

Instructions: Please tick (√) as appropriate where

SA = Strongly Agree (SA), A = Agree, D = Disagree (D), SD = Strongly Disagree (SD)

**Key: Strongly agree (4), Agree (3), Disagree (2), and strongly disagree (1).**

S/N	ITEMS	SA	A	D	SD
<b>RQ1</b>	<b>What are the factors that influence illegal fishing (IUU) activities in Nigeria territorial waters?</b>				
1	Weak governance at all levels that creates an easily evadable regulatory patchwork				
2	Lack of surveillance, monitoring and consistent prosecution of illegal activities				
3	Economic incentives for illegal fishing				
4	Logistical difficulties in monitoring and reaching vast areas of the ocean				
<b>RQ2</b>	<b>What is the impact of illegal fishing (IUU) activities in Nigeria territorial waters?</b>				
5	Illegal fishing (IUU) activities threatens the extinction of endangered species				
6	Illegal fishing (IUU) activities threatens food security				
7	Fish populations become depleted thereby driving genuine fishers to engage in IUU fishing to stay in business				
8	Illegal fishing (IUU) activities increases tension and piracy between countries.				
9	Illegal fishing (IUU) activities threatens the development of fish stocks				
10	Illegal fishing (IUU) activities exacerbates the effects of climate change on ocean resources				
11	Illegal fishing (IUU) activities threaten military conflict over scarce resources				
<b>RQ3</b>	<b>What is the economic impact of illegal fishing (IUU) activities on Nigeria territorial waters?</b>				
12	Illegal fishing (IUU) activities decreases income and employment from fishing industries and other connected industries				
13	Illegal fishing (IUU) activities results in economic losses for legitimate fishers and fisheries.				
14	Livelihoods of people are affected by illegal fishing, thereby pushing fishing communities further into poverty				
15	Illegal fishing (IUU) activities hinders food and economic security				
16	Illegal fishing (IUU) activities creates diversion of revenues				
17	Local disorder among fishers due to decrease in household income from reduced catch opportunities and reduced employment.				
18	Illegal fishing (IUU) activities forces fishers to face loss of market share and trade distortions due to the different cost structures of legal and illegal operators				