Regulating IUU fishing in Nigeria: a step towards discovering the untapped potentials of fisheries in Nigeria

Gabriel Chukwuemeka Chikelu

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REGULATING IUU FISHING IN NIGERIA- A STEP TOWARDS DISCOVERING THE UNTAPPED POTENTIALS OF FISHERIES IN NIGERIA.

GABRIEL CHUKWUEMEKA CHIKELU

A dissertation submitted to the World Maritime University in partial fulfilment of the requirements for the award of the degree of

MASTER OF SCIENCE
in
MARITIME AFFAIRS
(MARITIME LAW AND POLICY)

2021

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Declaration

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

(Signature): ..........................................................

(Date): ..............................................................

Supervised by: Asso. Prof. Henning Jenssen

Supervisor’s affiliation Maritime Law and Policy
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Abstract

**Title of Dissertation**: Regulating IUU Fishing in Nigeria- A Step Towards Discovering the Untapped Potentials of Fisheries in Nigeria.

**Degree**: Master of Science

Illegal, Unreported and Unregulated (IUU) fishing activities have led to the dwindling fish stocks in Nigeria. It is a threat to the environmental, economic, and food security of the country. The dwindling fish stocks has further forced artisanal fishers to find additional or alternate sources of income to sustain their livelihoods. The research examined the connection between IUU fishing in Nigeria and its impact or non-impact on economic development. As a corollary, the thesis further considered whether effective implementation can play a role in harnessing the potentials of fisheries in Nigeria. The research also highlighted the various measures available to deter IUU fishers as well as mitigate the impact of IUU fishing in Nigeria; in addition, the research recommended stricter penalties for IUU fishing with other technical support and the strengthening of regional information sharing as a roadmap towards eliminating IUU fishing in Nigeria. The thesis thoroughly investigated the formulated research questions through the use of the various sources of international law which are listed in Art. 38 of the Statute of the International Court of Justice; customary International laws, international conventions, general principles of law, Statutes applicable to fisheries in Nigeria as well as regional laws which apply in Nigeria and concluded that, if left unregulated, IUU fishing will ultimately lead to the total collapse of the Nigeria fishing industry.

**KEYWORDS**: Illegal, Unreported, Unregulated, Fishing, Fisheries Regulation, Conservation, Over-Fishing, Fishing quota, Over-exploitation.
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<th>Description</th>
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<tbody>
<tr>
<td>AIDCP</td>
<td>Agreement on the International Dolphin Conservation Programme</td>
</tr>
<tr>
<td>ATLAFCO</td>
<td>Ministerial Conference on Fisheries cooperation among African States bordering the Atlantic</td>
</tr>
<tr>
<td>CCBSP</td>
<td>Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea</td>
</tr>
<tr>
<td>CCAMLR</td>
<td>Commission for the Conservation of Antarctic Marine Living Resources</td>
</tr>
<tr>
<td>CCSBT</td>
<td>Commission for the Conservation of Southern Bluefin Tuna</td>
</tr>
<tr>
<td>CECAF</td>
<td>Fishery Committee for the Eastern Central Atlantic</td>
</tr>
<tr>
<td>COFI</td>
<td>Committee of Fisheries</td>
</tr>
<tr>
<td>CRESMAC</td>
<td>Regional Centre for Maritime Security in Central Africa</td>
</tr>
<tr>
<td>CRESMAO</td>
<td>The Regional Coordination Centre for Maritime Security in West Africa</td>
</tr>
<tr>
<td>ECOWAS</td>
<td>Economic Community of West African States</td>
</tr>
<tr>
<td>ECCAS</td>
<td>Economic Community of Central African States</td>
</tr>
<tr>
<td>EEZ</td>
<td>Exclusive Exclusion Zone</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<tr>
<td>FAOCA</td>
<td>Food and Agriculture Organization Compliance Agreement</td>
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<tr>
<td>FCWC</td>
<td>Fisheries Committee for West Central Gulf of Guinea</td>
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<tr>
<td>FMARD</td>
<td>Federal Ministry of Agriculture and Rural Development</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GFCM</td>
<td>General Fisheries Commission for the Mediterranean</td>
</tr>
<tr>
<td>GoG</td>
<td>Gulf of Guinea</td>
</tr>
<tr>
<td>GGC</td>
<td>Gulf of Guinea Commission</td>
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</table>
IATTC - Inter-American Tropical Tuna Commission
ICCAT - International Commission for the Conservation of Atlantic Tuna
IGO - Inter Governmental Organizations
ILO - International Labour Organization
IMCS - International Monitoring Control and Surveillance
IMO - International Maritime Organization
IOTC - Indian Ocean Tuna Commission
IPOA-IUU - International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing
IUU - Illegal, Unreported and Unregulated Fishing
LFN - Laws of the Federation of Nigeria
MLE - Maritime Law Enforcement
MPA - Marine Protected Area
MSC - Monitoring Control and Surveillance
MSY - Maximum Sustainable Yield (MSY),
NAFO - North-West Atlantic Fisheries Organization
NASCO - North Atlantic Salmon Conservation Organization
NBS - National Bureau of Statistics
NEAFC - North-East Atlantic Fisheries Commission
NGO - Non-Governmental Organizations
NPOA-IUU - National Plan of Action to combat IUU fishing
PSMA - Port State Measures Agreement
RFMO - Regional Fisheries Management Organization
SEAFO - South-East Atlantic Fisheries Organization
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>SIDS</td>
<td>Small Island Developing States</td>
</tr>
<tr>
<td>SIOFA</td>
<td>Southern Indian Ocean Fisheries Agreement</td>
</tr>
<tr>
<td>SOFIA</td>
<td>State of the World’s Fisheries and Aquaculture</td>
</tr>
<tr>
<td>SPRFMO</td>
<td>South Pacific Regional Fisheries Management Organization</td>
</tr>
<tr>
<td>SRFC</td>
<td>Sub-Regional Fisheries Commission</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<tr>
<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<tr>
<td>UNFSA</td>
<td>United Nations Fish Stock Agreement</td>
</tr>
<tr>
<td>UNSDG</td>
<td>United Nations Sustainable Development Goals</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollars</td>
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<tr>
<td>VMS</td>
<td>Vessel Monitoring System</td>
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<tr>
<td>WCPFC</td>
<td>Western and Central Pacific Fisheries Commission</td>
</tr>
<tr>
<td>WCU</td>
<td>World Conservation Union</td>
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<tr>
<td>WTO</td>
<td>World Trade Organization</td>
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<td>WWF</td>
<td>World Wildlife Fund</td>
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CHAPTER ONE: Introduction / Problem Statement

1.0. Introduction / Problem Statement

Goal 14 of the United Nations Sustainable Development Goals specifically focuses on the conservation and sustainable use of the oceans and its resources (Okafor-Yarwood, 2020). However, unsustainable practices by humans has significantly impacted the marine ecosystem as well as threatened the continued existence of its resources. One of such unsustainable human activities include illegal, unreported and unregulated (IUU) fishing (Marteache, et al., 2020).

The concept of illegal, unreported and unregulated fishing was first developed in the 90s in response to the existing lacuna in the international policy framework governing the over-exploitation of the marine ecosystem and its resources (Tsamenyi et al, 2015).

Illegal, Unreported Unregulated (IUU) Fishing is a broad concept which include all fishing activities which violates existing fishing regulations; it also encompasses fishing in Marine Reserved Areas, fishing by fishermen without a license, fishing with prohibited fishing gears, fishing of prohibited species of fish and fishing beyond the government provided quota (overfishing) (Bethel, et al., 2021; FAO, 2016).

Globally, there has been widespread concerns in recent decades with regards to IUU fishing as there have been a steady decline in fish catch (Quaas et al, 2016) and this has been a major threat to the existence of species of commercial value (Wongrak, et al., 2021; Erceg, 2006). Although, the impact of IUU fishing is glaring for all to see, however, it has been an onerous task to accurately estimate the impact of IUU fishing. There have been scholarly suggestions that IUU fishing accounts for an annual loss of $10- 12 billion (Long, et al., 2020). Out of the above estimate, $1.25 billion are from areas beyond the coastal jurisdiction of States (high seas), while the remaining estimated losses are from territorial jurisdiction of States (Payne, 2020; HSTF, 2006).
Fisheries is a major source of protein to the world as well as making substantial contribution to the global economy especially economies of developing countries as about 80 million metric tonnes of fish hits the market for consumption annually (Vianna, 2020; Blanchard et al, 2012). IUU fishing has accounted for an annual global economic loss which is estimated at approximately $23 billion representing 26 million metric tons of fish stock (Johns, 2013), and in addition, the United Nations Food and Agriculture Organization estimates that IU fishing accounts for about 15 to 30% of the annual global fish catch threatening the livelihood of over 4.3 billion people who depend on fisheries for consumption (FAO, 2016).

Further, it is clear that the threat of IUU fishing activities goes beyond economic threat, but also include threats to food security as about 1 billion people depend on fish and fisheries products for consumption and subsistence. (Hernandez, 2021).

Nigeria is a country blessed with extensive water bodies with an abundance of fishery resources of high commercial value (Abiodun, 2021). These fishery resources contribute immensely to the food security as well as subsistence of local fishers. However, recently, there has been widespread concern about the decline in fish catch in Nigerian waters as a result of IUU fishing which has threatened the sustainability of fisheries. This has resulted in radical changes in species composition, decline in catch and depletion as a result of poor and ineffective fishing regulations (Abiodun, 2021; Eyo and Ahmed 2005).

Over the last decades in Nigeria, it is estimated that $70 million is annually lost to IUU fishing through revenues losses from license fees, taxation and other value brought about from legal fishing activities. The annual cost of illegal fishing in Nigerian territorial waters is estimated to be between $600 million and $800 million (Okafor-Yarwood, 2018) and fish catch in Nigeria waters have steadily declined from 213, 996 metric tonnes in 1998 to 194, 226 metric tonnes in 2000 and 2001 respectively (Eyo and Ahmed 2005) due to IUU fishing activities such as the use of prohibited fishing gears, overfishing, use of small mesh, fish poisons and explosives. The status of Nigeria fisheries can be largely attributed to the ineffective fisheries governance which
has significantly threatened the management of fishery resources. The absence of an effective fishing governance has over the years been linked to weak, outdated, incoherent fishing regulations (Nakamura, et al., 2021).

Nigeria is endowed with huge economic resources but in spite of this huge potential, the country is bedeviled with developmental challenges, high rate of poverty estimated at over 75% of its population and unemployment rate estimated at 23.9% (Business Day, 2012) and unable to meet the nutritive requirement of its over 200 million people. The Nigeria domestic fishery market has an existing demand of over 1.5 million metric tonnes per annum. Incidentally, this demand is not matched by supply of 511,700 metric tonnes which comes from mostly domestic fish catch from artisanal fishers (Hassan, et al., 2020; Ojo and Fagbenro, 2004) thereby, leaving a gap of 988,300 metric tonnes.

This research seeks to understand the connection between IUU fishing in Nigeria and its impact or non-impact on economic development. As a corollary, the thesis will consider the need for regulation of fisheries in Nigeria whilst considering a practical path towards achieving an efficient and effective regulation. The paper will further consider whether effective implementation can play a role in harnessing the potentials of fisheries in Nigeria.

1.1. Aim of Research
Nigeria is a country blessed with extensive water bodies with an abundance of fishery resources of high commercial value. These fishery resources contribute immensely to the food security as well as subsistence of local fishers. However, recently, there has been widespread concern about the decline in fish catch in Nigerian waters as a result of IUU fishing which has threatened the sustainability of fisheries. The purpose of this thesis is to study the connection between IUU fishing in Nigeria and its impact or non-impact on economic development. As a corollary, the thesis will consider the need for regulation of fisheries in Nigeria whilst considering a practical path towards achieving
an efficient and effective regulation. The paper will further consider whether effective implementation can play a role in harnessing the potentials of fisheries in Nigeria.

1.2. Significance of Research
The significance of this research is to educate the Nigerian public on the prevalence of IUU fishing, its consequences and the need for management and policy framework to curb the impact of IUU fishing and its effects on the sustainability of Nigeria’s fishing industry.

The research will provide a roadmap to the development of fishery laws to curb IUU fishing in Nigeria and also suggest penalties for violators as an effective tool to curb IUU fishing.

This research will also contribute to the already existing body of literature on this subject therefore serving as empirical literature for future research on this subject,

1.3. Expected Result
Recommendations from this dissertation will provide a veritable tool to various stakeholders from both the public and private sector on the need for effective collaboration and management response to tackle the impact of IUU fishing in Nigeria.

The research will provide a roadmap to the development of fishery laws to curb IUU fishing in Nigeria and provide sanctions for violators.

This dissertation will also provide a road map for the development of effective fishing regulations that will help to harness the huge potentials of the Nigerian fishing industry.

1.4. Assumptions
For the purpose of this research, the following assumptions are made:
a) Fishing activities carried out by unlicensed industrial vessels are considered illegal.

b) Fishing activities carried out by licensed industrial fishing vessels in violation of the Nigeria Sea Fisheries Act 1992 are considered illegal.

1.5. Research Limitations

a) There are few Nigerian literatures on this subject

b) There are little or no recent fishing data in Nigeria

1.6. Research Questions

Nigeria is a country blessed with extensive water bodies with an abundance of fishery resources of high commercial value (Abiodun, 2021). These fishery resources contribute immensely to the food security as well as subsistence of local fishers. However, recently, there has been widespread concern about the decline in fish catch in Nigerian waters as a result of IUU fishing which has threatened the sustainability of fisheries (Abiodun, 2021; Eyo and Ahmed 2005).

Illegal, unreported and unregulated (IUU) fishing, has had a serious negative impact on the ocean and its marine biodiversity and ecosystems. The effects of these fishing activities is devastating for the marine living resources in these oceans, their conservation, management as well as survival (Wongrak, et al., 2021).

The conduct of this type of fishing activity is mainly driven by desire for economic profits (Lee & Viswanathan) and these conduct has undermined the efforts of the Nigerian government in achieving a long-term sustainability and responsibility in relation to fisheries, especially with regards to the fish stocks which are subject to stricter conservation and management measures.

The purpose of this thesis is to study the connection between IUU fishing in Nigeria and its impact or non-impact on economic development. As a corollary, the thesis will
consider the need for regulation of fisheries in Nigeria whilst considering a practical path towards achieving an efficient and effective regulation. The paper will further consider whether effective implementation can play a role in harnessing the potentials of fisheries in Nigeria. In order to achieve these objectives, the following questions were investigated, namely:

a. What is the impact of IUU fishing in the Nigeria Fishing industry?

b. What are the causes of IUU fishing in Nigeria?

c. What are the existing management and legal framework for IUU fishing in Nigeria?

d. What measures can be undertaken to deter as well as mitigate the impact of IUU fishing in Nigeria?

1.7. Research Methodology

The thesis thoroughly investigates the formulated research questions through the use of the various sources of international law which are listed in Art. 38 of the Statute of the International Court of Justice; International customary law, International conventions, general principles of law, Statutes applicable to fisheries in Nigeria as well as regional laws which apply in Nigeria were used as primary sources. Secondary sources such as articles and publications of highly acclaimed authors in fisheries were also examined in order to assess the different opinions as regards IUU fishing, there was also an analysis of library based literatures, textbooks, journals, articles and Government legislations which were accessed from the library and internet. Additional sources such as data from the Nigerian Department of fisheries as well as scientific reports related to fisheries in Nigeria were also examined.

The legal and regulatory frameworks applicable to fisheries in Nigeria is complex as well as outdated, however, this research included an examination of the various legal instruments which govern fisheries in Nigeria albeit outdated, as well as the examination of both soft law and hard law and their application in Nigeria.
The thesis also placed specific focus and emphasis on cooperation of various States in the areas beyond national jurisdiction under the Fish Stock Agreement and the establishment of Regional Fisheries Management Organizations who are mandated to adopt legally binding instruments on the management and conservation measures that are applicable to its members. The role of the Regional Fisheries Management Organizations was crucial for the investigation of the formulated research questions for this thesis.

Finally, the thesis further considered a number of soft law instruments that are relevant in the interpretation of the various legally binding instruments. The soft laws that were examined include the various instruments adopted by FAO, *inter alia*, IPOA-IUU, the Code of Conduct for Responsible Fisheries which although are not binding, plays an important role in the development of fisheries management on a global and regional level and many of the various norms provided in these soft laws are incorporated in the various legally binding instruments. A clear example of this crystallization of soft law to hard law is evident in the definition of unregulated fishing as part of the definition of IUU fishing which was provided by IPOA-IUU and then codified in the legally binding Port State Management Agreement.

1.8. Hypothesis

The following hypothesis are derived for this research:

Illegal Unreported Unregulated (IUU) fishing in Nigeria is as a result of the absence of effective fishing regulations governing the fishing industry in Nigeria.
1.9. Dissertation Structure

Chapter 2 of this thesis provides the factual background of the various issues which were discussed in this research. The chapter discussed the concept of IUU fishing and its definition as well as the problem of IUU fishing globally and the drivers of IUU fishing activities. Discussion on the concept of IUU fishing was provided in order to provide a clear direction to further investigate the formulated research questions.

Chapter 3 provides a background of all legal and international regulatory frameworks which govern fishing globally using the United Nations Convention on the Law of the Sea 1982 (UNCLOS) as the backbone convention for the conservation and management of all marine resources. The chapter further discussed the regional actors as well as Regional Fisheries Management Organizations (RFMOs) which regulates fishing in West Africa, their objectives, functions as well as challenges encountered in the regulation of fishing in West Africa and the Gulf of Guinea region. The chapter further investigates the first research question. The Federal Republic of Nigeria was firstly defined, followed by an examination of the catch composition, the economic benefit of fishing in Nigeria as well as the impact of IUU fishing in the Nigeria fishing industry which is the first research question for this thesis. The chapter further investigates the second research question on the causes of IUU fishing in Nigeria while expounding on the existing management and legal framework for IUU fishing which formed the third research question for this thesis.

Chapter 4 examines the final research question and the various measures available to Nigeria for deterring and eliminating IUU fishing. The discussion refers to the available measures that emanate from the provisions of the legal instruments regulating IUU fishing in Nigeria and these measures were presented and briefly assessed with regards to their applicability to fishing on the Nigeria high seas. The possibilities for the enforcement of this measures were briefly assessed including measures related to approach, boarding and inspection as well as available port state measures directed at vessels suspected or established to have engaged in IUU fishing in Nigeria.
2.1. What is IUU Fishing

The global fish stock has faced huge threat not only from legal fishing but also from illegal, unreported and unregulated (IUU) fishing activities. Illegal Unreported and Unregulated fishing (IUU) is a prevalent practice which have been attracting global attention due to the fact that it undermines the efforts of both national and international fisheries management (Zimmerhackel et al., 2018).

According to International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), it defined illegal fishing as activities;

I. “conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;

II. conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or

III. in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization” (FAO,2001).

According to International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), it defined unreported fishing as activities;
i. which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or

ii. undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization (FAO, 2001).

According to International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), it defined unregulated fishing as activities;

i. in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or

ii. in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law (FAO, 2001)

Illegal fishing has been in existence for decades but recently, technological advancements in refrigeration, motorization and new forms of stock detection has led to a sharp rise in illegal fishing activities (Aldred, 2021).
The concept of illegal, unreported and unregulated fishing was first developed during the 90s in response to the existing lacuna in the international policy framework governing the over-exploitation of the marine ecosystem and its resources (Tsamenyi et al, 2015).

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) was basically the first regional organization to act on the issue of Illegal, Unreported and Unregulated fishing practices as the organization developed certain conservation and management measures which were aimed at addressing unregulated fishing activities by member and non-member States in the Southern Ocean. Similarly, on the 19th of February, 1999, at the 23rd Session of the Food and Agriculture Organization (FAO) Committee of Fisheries (COFI), Australia submitted a paper urging FAO to develop an international plan of action to combat IUU fishing activities.

The broad nature of the definition of IUU fishing and to the extent to which it applies has been a source of concern. The definition of IUU fishing is wide and can be construed to include criminal activities such as money laundering, drug trafficking, fraud, forced labour and other transnational crimes (Bethel et al, 2021). However, for the purposes of this dissertation, the definition of IUU fishing will be restricted to the confines of the definition given by the Food and Agricultural Organization (FAO).

Illegal Unreported Unregulated (IUU) Fishing is a term which is coined to describe all fishing activities which violates fisheries law and regulations; this also includes the use of wrong fishing gear (prohibited fishing gear), fishing over quota (overfishing), unlicensed fishing, fishing prohibited species or fishing in closed areas (FAO, 2016).

Upon the adoption of the term “IUU fishing”, The Food and Agriculture Organization (FAO) defined the concept of IUU fishing in three categories:

2..1.1 Illegal Fishing

The FAO defined illegal fishing as fishing activities which are conducted by foreign vessels without the permission or consent of States on whose jurisdiction the fishing
activities is carried out and in contravention of its fisheries laws and regulations (FAO, 2016).

This is prevalent in West Africa where these IUU fishing vessels operate in the jurisdiction of West African States where they can safely operate because of the absence of effective fisheries control structure (Omar, Mohamed & Bambale, 2019).

Illegal fishing also includes fishing within restricted zones, e.g. fishing in a Marine Protected Area (MPA). The World Conservation Union (WCU) defines MPA “as parts of intertidal or subtidal environments, together with their overlying waters, flora and fauna and other features that have been reserved and protected by law or other effective regulations” (Allan, et al., 2021) and fishing in the Exclusive Exclusion Zone (EEZ). EEZ which is defined by the United Nations Convention on the Law of the Sea (UNCLOS) 1982 “as an area extending 200 nautical miles from the shoreline within which the coastal State has the right to explore and exploit, and the responsibility to conserve and manage both living and non-living resources”. The Exclusive Economic Zones are spawning grounds for fish and nursery for juvenile fish (Burns, et al., 2020). Fishing in this EEZ is prohibited by trawlers involved in industrial fishing but small, local, domestic and artisanal fishermen are allowed to fish in this area (Belhabib, et al., 2020).

2.1.2. Unreported Fishing

The FAO defined unreported fishing as fishing activities which are not reported or have been misreported by fishing vessels to the relevant national body (FAO, 2016).

This is usually the case where fishing vessels harvest more tonnage of fish than they are required to harvest under the official fishing quotas. For example, some vessels harvest more catch than they are entitled to catch under official fishing quotas and this excess are most times unreported (Rosello, 2021).
2.1.3. Unregulated Fishing

The FAO defined unregulated fishing as fishing activities which are conducted in areas where there are no applicable management measures which regulates the catch (FAO, 2016); this is the case where fishing for certain species or highly migratory species are not regulated by a Regional Fisheries Management Organization (RFMO). The FAO defined an RFMO as a Regional Fishery Body or a group of organizations or States who are parties to an international fishery management arrangement with the aim of working together for the management and conservation of fish stocks (Tonnes, 2018). These RFMOs play a critical and important role in promoting a responsible and sustainable fishery.

This term unregulated fishing also applies to fishing activities conducted in international waters in clear violation of relevant regulations that are established by the relevant Regional Fisheries Management Organization (FAO, 2016).

In determining the meaning of unregulated fishing, it must be noted that unregulated fishing is not in itself illegal under the laws of nations which govern the high seas, unregulated fishing is nonetheless problematic as it ultimately results in surplus fish being caught over and above the maximum sustainable yield which is agreed by the RFMOs in those regions resulting in stocks which are fully exploited becoming overexploited. (Cabral et al, 2018)

IUU fishing also aggravates the problem of overfishing due to the fact that IUU fishing vessels oftentimes carry out their operations in marine protected areas where a total ban is usually imposed on fishing while paying little or no attention to established fisheries management plans, coastal state control or national legal framework in the area which serves to manage and conserve overexploited or depleted fish stock (Haas et al, 2019).
2.2. IUU Fishing as a Global Problem

Fisheries is a major source of protein to the world as well as making substantial contribution to the global economy especially economies of developing countries as about 80 million metric tonnes of fish hits the market for consumption annually (Aldred, 2021). Fisheries serves not only as a source of food but also provides a source of livelihood to millions of humans around the world, most especially developing, low-income and food deficient countries (FAO, 2021).

Over the years, there has been an over-exploitation of fish and fisheries resources by humans, this over-exploitation of fish has led to the destruction of marine habitat, threatened the marine ecosystem, and food security and most importantly has depleted fishing stocks (Fillie, M. T., 2019).

Globally, there has been widespread concern in recent decades with regard to IUU fishing as there have been a steady decline in fish catch (Quaas et al, 2016) and this has been a major threat to the existence of species of commercial value (Neil, 2018).

Although, the impact of IUU fishing is glaring for all to see, however, it has been an onerous task to accurately estimate the impact of IUU fishing. There have been scholarly suggestions that IUU fishing accounts for an annual loss of $10-12 billion (Long, et al., 2020). Out of the above estimate, only $1.25 billion are from areas beyond the coastal jurisdiction of States (high seas), the remaining estimated losses are from territorial jurisdiction of States (Sumaila et al., 2021).

The most cited estimate of the global impact of IUU fishing places losses from IUU fishing at approximately $23.5 billion annually, this arguably represents about 26 million tonnes of fishery products (Agnew et al., 2009). A study conducted by the United Nations Environment Programme (UNEP) cautiously estimated global losses as a result of IUU fishing at $11- $30 billion annually (Pauly, 2017).
It is a clear fact that the impact of IUU fishing is felt by both the developed, developing and the under-developed countries (FAO, 2016), however, it is arguable that the impact of IUU fishing is more felt by the developing and under-developed countries who obviously depend on fisheries for food security, subsistence and a source of employment (Okafor-Yarwood, 2020).

There are numerous drivers of IUU fishing, IUU fishing activities are perceived as a profit oriented venture, as the fishers pay no duties or taxes on these catch (Ye, et al., 2017). Similarly, since IUU fishing is done in a large scale, it is usually practiced with impunity and no regard to any regulation (Sumaila, 2018).

IUU fishing activities are most times conducted in developing countries especially countries in West Africa who cannot afford very costly and very complex fisheries management and control measures as established in Europe. These countries for which Nigeria is one of, have weak governance, ambivalent legislations, large scale corruption and lack the capacity and will to enforce existing national fisheries legislations (Ojekunle, 2020).

The Sub-Regional Fisheries Commission (SRFC), which comprises of 7 West African States namely; Cape Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal and Sierra Leone in one of its studies in 2013 did produce a detailed list of the various causes of IUU fishing in West Africa (Becker, 2015; Honniball, 2020) namely:

• There are insufficient and inadequately trained personnel in the relevant authorities;

• The authorities’ motivation to invest in relevant personnel is poor. Financially weak states set other priorities.

• Salaries are low, and vessel owners take advantage of this situation to make fraudulent payments to observers’/ fisheries administrators to cover up their illegal activities.

• The purchase, maintenance and operational costs of patrol boats and aircraft are cost intensive. For effective control, there must be sufficient time spent out at sea or in the
air. However, in some states, even though they are available, they are not operational due to logistical problems – lack of personnel, fuel, proper maintenance regime, etc.

2.2.1 Economic Drivers of IUU Fishing

IUU fishing is principally motivated by the desire to earn profit (Lee & Viswanathan, 2021). IUU fishing usually thrive in developing countries and regions where there is inadequate Maritime Law Enforcement (MLE) capacity to adequately protect the high fishing resources in the area (Omar, Mohamed & Bambale, 2019).

IUU fishing is generally believed to be a lucrative, rewarding and low-risk activity in developing countries such as Nigeria because of the weak maritime regulations and the very low possibility of the activity being detected by the maritime law enforcement officers because of weak regulations and an ineffective fisheries management regime (Neil, 2018). It is therefore not a surprise that IUU fishing has become a very lucrative business for criminal networks in Nigeria and the Gulf of Guinea (GoG) where there is an ineffective fishing regulation and a minute chance of these criminal elements being detected or arrested by the maritime enforcement officers (Telesetsky, 2014; Garcia, et al., 2021).

2.2.2 Low Risk- Reward Ratio as a Driver of IUU Fishing

Telesetsky (2014) opined that one of the driver of IUU fishing is the low penalty imposed on defaulters. The author went further to suggest that profit which is the driver of this activity needs to be taken out, this will be done by classifying IUU fishing as a serious crime (Chapsos & Hamilton, 2019), this will create a penal culture around the crime (Aghilinejad et al., 2018). Similarly, the severity of the penalty for defaulters will deter others from engaging in IUU fishing (Neil, 2018).
The International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) echoed same view that there should exist penal sanctions for IUU offences which must be severe and capable of deterring others from engaging in IUU fishing activities (FAO, 2001).

IUU fishing in Nigeria is primarily viewed as a minor offence, hence, is not given enough priority. This has resulted in limited resources being allocated by the Government towards Monitoring, Control and Surveillance (MCS) activities to deter it (Haenlein, 2017; Blondin, 2018).

2.2.3 Social Drivers of IUU Fishing

Social drivers in this context refer to the poor social conditions which motivates fishers to engage in IUU fishing activities, these social conditions include low level of education and high population pressure (Gallic and Cox 2006). In other words, the social background and different lifestyles of fishers can be a source of motivation to commit crimes, engage in illegal fishing activities and violate sea regulations (Belhabib & Le Billon, 2020). In developing countries such as Nigeria, a country that is bedevilled with developmental challenges, high rate of poverty estimated at over 75% of its population and unemployment rate estimated at 23.9% (Business Day, 2012), fishers in the country will obviously tend to engage in IUU activities. Similarly, the abundance of cheap labour in Nigeria often times serves as a source of motivation for illegal fishing operators to engage fishers from Nigeria to commit illegal fishing activities in the high seas of Nigeria and the Gulf of Guinea.

Conclusively, the 2016 Food and Agriculture Organization (FAO) State of the World’s Fisheries and Aquaculture (SOFIA) Report declared that weak legislative framework, scant political will and weak governance are the primary drivers of IUU fishing and the issue of IUU fishing cannot be fixed except these drivers are effectively handled (SOFIA, 2018).
CHAPTER THREE - Legal and Regulatory Framework

3.1. International regulatory framework on IUU fishing

There exist several international, regional and national regulations that are important in the quest to eliminate IUU fishing globally, in the Gulf of Guinea and in Nigeria. Firstly, is the United Nations Convention on the Law of the Sea 1982 (UNCLOS), this convention is the backbone convention for the conservation and management of all marine resources and was ratified by the Federal Republic of Nigeria on 14 August 1986. There also exist other international, regional and national frameworks that regulate the conservation and management of fisheries resources, these frameworks will be discussed below.

3.1.1. United Nations 2030 Sustainable Development Goals (Goals 2 and 14)

The United Nations Sustainable Development Goals (UNSDG) 2030 agenda was adopted in 2015 and provided a shared blueprint that will fundamentally transform developmental coordination systems wherein everyone will be productive, live peacefully on a healthy and sustainable planet (SDG report 2019). This Agenda ensures a sustainable social, environmental and economic gain at international, regional and local level with an emphasis on the need for stakeholder’s participation and building partnerships that will effectively promote the implementation of these goals. In line with this, the FAO is partnering with the International Labour Organization (ILO), World Wildlife Fund (WWF), International Maritime Organization (IMO), International Monitoring Control and Surveillance (IMCS) Network, Non-Governmental Organizations (NGOs), Inter Governmental Organizations (IGOs) and RFMOs in a bid to combat the threat of IUU fishing which has caused tremendous negative economic and environmental impact to the world (FAO 2016).
Sustainable Development Goal (SDG) 2

The United Nations Sustainable Development Goal (SDG) 2 which is titled “Zero Hunger” is part of the 17 UN SDG Goals, the Goal seeks to improve nutrition, promote sustainable agriculture, achieve food security and seek sustainable ways to end hunger in all its form by the year 2030.

This Goal highlights the link between sustainable agriculture and food security as 70% of the population of the world especially those living in poverty and in rural areas rely mainly on agriculture as their main source of subsistence (HLPF thematic review of SDG 2, 2017). This population especially those from the developing countries of the world are the primary victims of marine resources degradation and are mostly impacted by this crisis and they rely on marine resources for protein and income.

According to State of Food insecurity in the World (SOFI) 2015, fisheries resources is the main source of protein to the population of developing countries, the failure to achieve SDG 2 targets will leave a greater portion of the world’s population especially those in Asia, Africa and sub-Saharan Africa malnourished by the year 2030 to 2050 (SOFIA, 2015).

Therefore, in order to ensure food security for the future, there is a need for sustainable agriculture as well as the conservation of our marine resources and biodiversity to ensure that the SDG 2 targets are achieved and the livelihood of artisanal farmers are enhanced (HLPF thematic review of SDG 2, 2017).

Sustainable Development Goal (SDG) 14

The United Nations Sustainable Development Goal (SDG) 14 which is titled “Life below water” is part of the 17 UN SDG Goals and this goal places a specific focus on the ocean, marine pollution, climate and most importantly the conservation and sustainable use of resources in the ocean. This Goal was adopted by United Nations (UN) in 2015 and the Goal sets out amongst other targets, the objective to eliminate IUU fishing and subsidies which contribute to it by the year 2020 (OECD 2019).
This Goal focuses on 7 specific targets as follows:

a. The prevention and significant reduction of marine pollution of all kinds, this includes nutrient pollution and pollution from marine debris by the year 2025.

b. Sustainable management and protection of the marine coastal ecosystems in a bid to protect the marine environment from the adverse impacts of human activities and the strengthening of their resilience. This will be achieved through taking actions that are necessary for their restoration in order to achieve a productive and healthy ocean by the year 2020.

c. Minimization to the barest minimum all forms of ocean acidification as well as addressing the impacts of ocean acidification through an enhanced scientific cooperation between States at all levels.

d. The effective regulation of fish harvest/catch in order to put an end to overfishing, Illegal, Unreported and Unregulated fishing and destructive fishing practices while implementing a science-based management plan in order to restore depleting fish stocks as soon as feasible to the levels that can produce maximum sustainable yield as determined by their biological characteristics by 2020.

e. The conservation of at least 10% (ten percent) of coastal and marine areas consistent with national and international law and based on the best available scientific information by 2020 (Mbotiji, 2019).

f. The express prohibition of all forms of fisheries subsidies advanced by various countries by 2020, some of these subsidies advanced by countries contribute to overfishing as well as IUU fishing (Mbotiji, 2019).

g. To increase the economic benefits for Small Island Developing States (SIDS) and least developed countries from the sustainable use of marine resources including sustainable management of fisheries, aquaculture and tourism (Nilsson 2016).
3.1.2. The International Plan of Action on IUU fishing (IPOA-IUU)

The International Plan of Action on IUU Fishing (IPOA-IUU) is a non-binding voluntary instrument that was developed in 2001 and is applicable to State, entities and all fishers. The ultimate objective of the IPOA-IUU is to deter, prevent and eliminate IUU fishing by providing States with comprehensive, transparent and effective measures to act especially through appropriate Regional Fisheries Management Organizations in line with the relevant international laws (FAO, 2016).

This fisheries code of conduct was adopted to regulate fisheries in the exclusive economic zones, high seas trade and postharvest practices. The code of conduct sets out the international standards and guidelines, which regulates fisheries practices with the aim of ensuring the effective conservation and sustainable management of aquatic resources (FAO, 2016).

The IPOA-IUU can be understood as a comprehensive toolbox containing a full range of tools that are readily available for use by institutions at different situations to combat the threat of IUU fishing. IPOA-IUU covers a variety of things including flag State, Port State, Coastal State and Market State responsibilities and this framework envisions broad and effective participation by States and the use of integrated approaches to address the impact of IUU fishing (FAO, 2001).

IPOA-IUU provides that States adopt and develops measures that covers all the aspects of the fishing industry such as flagging of vessels, fishing authorizations, landings, trade and market-based control of fish and fisheries resources. Each State should further develop legislative measures which regulates and controls the access to fisheries resources, port access, catch certificate, vessel licensing, Monitoring Control and Surveillance(MSC), system of penalties and inspection organization (Mbotiji, 2019) in order to better combat IUU fishing.

3.1.3. United Nations Fish Stock Agreement (UNFSA)
The United Nations Fish Stock Agreement was adopted at the United Nations conference on straddling fish stocks and highly migratory fish stocks on 4 August 1995. UNFSA was opened for signatures in 1996 and entered into force in 2001 upon being signed by 59 States and entities.

The United Nations Fish Stock Agreement is an implementation agreement to UNCLOS, 1982 and this instrument applies primarily to the conservation and management of straddling fish stock and highly migratory fish stocks on the high sea in areas outside the national jurisdiction of a State pursuant to Article 3 of the Agreement (Bethel, 2021). The United Nations Fish Stock Agreement provides for the rights and responsibilities of port states in the management and conservation of fisheries that must be based on a precautionary approach and in line with the best available scientific information (Bethel, 2021).

UNFSA spells out the duties of a flag states as it relates to registration of vessels, records of vessels, authorization, MSC, sanction and enforcements as well as port state measures. This Agreement provides for corporation between States to ensure the conservation and sustainable management of fisheries resources within and beyond the exclusive economic zone (Mbotiji, 2019).

UNFSA further ensures the development of an effective compliance and effective mechanisms for the high seas as well as promoting participation of developing countries in the conservation and management of their fisheries resources. The Federal Republic of Nigeria ratified the United Nations Fish Stock Agreement on the on the 2nd day of November, 2009.

3.1.4. Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas

At the Food and Agriculture Organization twenty-seventh session in November 1993, the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas was approved. In line
with Article X.1 of the Agreement, the agreement is open to acceptance by all FAO members and associate members or any non-member who is a member of the UN. The Compliance Agreement is applicable to all fishing vessels that carry out its activities on the high sea.

This Agreement obliges a port State to notify a flag State if it has reasonable grounds to believe that a vessel that flies the flag of that State is engaging in an activity that undermines the effectiveness of international conservation and sustainable management measures (Bethel, 2021). Nigeria has not accepted this agreement.

3.1.5. The Food and Agriculture Organization (FAO) code of conduct

The Food and Agriculture Organization (FAO) code of conduct was adopted in 1995 following calls for a unified code of conduct and legal framework on responsible fishing.

The main objective of the code is to set out international principles and standards of behaviour for responsible fishing practices that will ensure a more effective conservation, management and sustainable exploitation of the marine resources.

The Food and Agriculture Organization (FAO) code of conduct is a complimentary code of conduct under the UNCLOS framework and under the umbrella of the fisheries department of the FAO. The code of conduct is voluntary but is widely considered as the foundation for sustainable fisheries and aquaculture development for responsible fisheries.

The FAO code of conduct for responsible fishing addresses the following 6 fundamental elements (Hosch, et al., 2011):

a. The conservation and management of fisheries

b. Fishing operations;
c. Aquaculture development;
d. Coastal area management;
e. Post-harvest practices and trade; and
f. Fisheries research

The Code of Conduct recognizes the duties and responsibilities of flag States towards vessels flying its flag pursuant to the Fish Stock Agreement as well as the management of its resources with the ultimate aim of promoting international stakeholder’s cooperation and the development of management measures that will enhance the sustainable use of fisheries resources (FAO Code of Conduct, 1995).

The FAO code of conduct for responsible fishing also compliments the International Plans of Action (IPOAs) which is also a voluntary instrument applicable to States, international fisheries organizations, regional fisheries organization as well as all fishermen.

3.2. Regional Fisheries Management Organizations (RFMOs)

Regional Fisheries Management Organizations (RFMOs) are international organizations who regulate regional fishing activities in the ocean or high seas (Mbotiji, 2019)

Globally, there exist several Regional Fisheries Management Organizations (RFMOs) with different legal authority, mandates and geographical coverage. RFMOs play a very important role in the quest to combat and eliminate illegal, unreported and unregulated fishing practices.

These RFMOs are formed by countries within a geographical area with fishing interests. In some instances, these organizations are open to both coastal States in the same region as well as distant fishing nations which are countries not within the same geographical region but who hold interest in those fisheries. There also exist some
RFMOs who play purely an advisory role, although, some of these advisory RFMOs have the management powers to set fishing and catch limits, control obligations as well as technical measures.

In recent times, majority of the world’s sea is covered by RFMOs and are categorized into RFMOs, which regulates the management of highly migratory stocks especially tuna (‘tuna-RFMOs’) and other RFMOs that regulate the management of other fish stocks (i.e. pelagic or demersal) in specific areas.

Below are examples of different types of RFMOs-

RFMOs regulating highly migratory species (mainly tuna) (Mbotiji, 2019) include:

- a. International Commission for the Conservation of Atlantic Tuna (ICCAT)
- b. Indian Ocean Tuna Commission (IOTC)
- c. Western and Central Pacific Fisheries Commission (WCPFC)
- d. Inter-American Tropical Tuna Commission (IATTC)
- e. Agreement on the International Dolphin Conservation Programme (AIDCP) (a sister organization to IATTC)
- f. Commission for the Conservation of Southern Bluefin Tuna (CCSBT)

RFMOs regulating the management of other fish stock by geographic area (Mbotiji, 2019) include:

- a. North-East Atlantic Fisheries Commission (NEAFC)
- b. North-West Atlantic Fisheries Organization (NAFO)
- c. North Atlantic Salmon Conservation Organization (NASCO)
- d. South-East Atlantic Fisheries Organization (SEAFO)
- e. Southern Indian Ocean Fisheries Agreement (SIOFA)
- f. South Pacific Regional Fisheries Management Organization (SPRFMO)
- g. Convention on Conservation of Antarctic Marine Living Resources (CCAMLR)
- h. General Fisheries Commission for the Mediterranean (GFCM)
i. Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea (CCBSP)

j. Fisheries Committee for West Central Gulf of Guinea (FCWC).

3.2.1 The Gulf of Guinea Code of Conduct (Yaoundé Code of Conduct)

The Gulf of Guinea Code of Conduct was signed in June, 2013 by countries within the Gulf of Guinea region representing Economic Community of West African States (ECOWAS), the Economic Community of Central African States (ECCAS) and the Gulf of Guinea Commission (GGC).

The role of the Code as a regional instrument to combat IUU fishing is evidenced in the preamble to the Code and provides thus:

“RECALLING that the United Nations General Assembly, in its resolution 67/79 on sustainable fisheries of December, 11 2012, expressed its serious concern that Illegal, Unreported and Unregulated fishing remains one of the greatest threat to fish stocks and marine ecosystem and continues to have serious and major implications for the conservation and management of ocean resources, as well as the food security and the economies of many State particularly developing States, and renews its calls upon States to comply with all existing obligations and to combat such fishing and to take all necessary steps to implement the International Plan of Action to prevent, deter and eliminate Illegal, Unreported and Unregulated Fishing”.

This code is also referred to as Yaoundé Code of Conduct and was adopted in response to the critical state of maritime security in West and Central Africa. The Yaoundé Code of Conduct which was originally developed and signed by West and Central African nations in 2013, provided for a maritime security framework which prioritizes cooperation and information-sharing among countries in the region. The main aim of the Yaoundé Code of Conduct is to render assistance to the countries in the region in addressing an array of maritime security issues affecting the West and Central Africa.
region, including armed robbery at sea, piracy, maritime terrorism, trafficking in narcotics, maritime pollution and, illegal, unreported, and unregulated (IUU) fishing pursuant to Article 2 of the Code.

In a bid to ensure the effective implementation of the Yaoundé Code of Conduct, two regional information-sharing centers were set up: The Regional Centre for Maritime Security in Central Africa (CRESMAC) which is based in Pointe-Noire, Republic of the Congo, established to assist the countries that make up the Economic Community of Central African States (ECCAS) as well as The Regional Coordination Centre for Maritime Security in West Africa (CRESMAO), which is based in Abidjan, Côte d’Ivoire, established to assist the countries of the Economic Community of West Africa (ECOWAS.) (Mbotiji, 2019). The two Centers are coordinated by the Interregional Coordination Centre in Yaoundé, Cameroon.

Nigeria is a signatory to the Yaoundé Code of Conduct along with other States in the Gulf of Guinea. Most of these States enjoy thriving coastal economies which is as a result of their wealth of natural resources, while others States remain underdeveloped.

3.2.2. fishery committee for the Eastern Central Atlantic (CECAF)

Nigeria is a member of the Fishery Committee for the Eastern Central Atlantic (CECAF).

The main objective of this Committee is to develop and promote the sustainable utilization of the living marine resources within its region. This will be done through the proper management and development of the fishing and fisheries operations.

The functions of this committee include the following:

a. The promotion and coordination of research and to draw up programmes that are required for this purpose and to organize such research as may appear necessary;
b. To review, the state of the marine resources that are within its area of competence;
c. The committee is also tasked with the responsibility of promoting the collection, dissemination, interchange, analysis and the study of statistical, biological, socio-economic and environmental data and other marine fishery information;
d. The committee is also to provide advice on MSC, especially as regards issues of a sub-regional and regional nature;
e. To ensure that there exists scientific basis for all regulatory measures which are formulated for the conservation and management of marine fishery resources. The committee must also ensure the implementation of such regulatory measures by member States, sub-regional or regional organizations, as appropriate;
f. The committee is also tasked with the promotion as well as encourage the utilization of the most appropriate fishing craft, gear and techniques;
g. To encourage, recommend and coordinate training in the priority areas of the Committee;
h. The committee must liaise with competent institutions within the sea area served by the Committee in proposing working arrangements aimed at eliminating illegal fishing within the region.

3.2.3 International Commission for the Conservation of Atlantic Tunas (ICCAT)

Nigeria is a member of the International Commission for the Conservation of Atlantic Tunas (ICCAT).

The International Commission for the Conservation of Atlantic Tunas (ICCAT) is a regional fisheries management organization (RFMO) that is responsible for the conservation and sustainable management of tunas and tuna-like species which are in
the Atlantic Ocean and adjacent seas as was established in 1966 by the International Convention for the Conservation of Atlantic Tunas.

This RFMO make a yearly assessment of about four to seven fish stocks and also manages more than 50 fisheries. ICCAT also provides for the minimum requirement and standard for the Vessel Monitoring System (VMS) in the region in 2003, IUU vessel lists in 2002, port inspections measure in 2012 and trans-shipment regulations in 2006 (Glassco, 2017).

3.2.4. Ministerial Conference on Fisheries cooperation among African States bordering the Atlantic (COMHAFAT-ATLAFCO)

The core objectives of the Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic (ATLAFCO) is to promote and strengthen regional cooperation in the development, coordination and harmonization of capacities and efforts of various stakeholders in the conservation and exploitation of fisheries resources in the African region. The body is also known by its French acronym, COMHAFAT, “Conférence ministérielle sur la coopération halieutique des États Africains riverains de l’Océan Atlantique”

Nigeria is a member of the Ministerial Conference on Fisheries cooperation among African States bordering the Atlantic (COMHAFAT-ATLAFCO)

3.2.5. Fishery Committee for the West Central Gulf of Guinea (FCWC)

The Fishery Committee for the West Central Gulf of Guinea (FCWC) is a committee that comprises of Nigeria, Togo, Benin, Ghana, Liberia and Cote d’Ivoire. The committee was established in 2007 to promote the sustainable management and optimal utilization of living marine resources in the region.
This committee was set up by these countries in response to the challenges faced by the region. Such challenges include overfishing, illegal fishing and IUU fishing. The committee is to develop strategies to eliminate IUU fishing as well as improve the livelihoods of small-scale fishers and processors in the region.

The FCWC at its 3rd Ministerial Conference held in Ghana in 2009 did adopt a Regional Plan of Action to Prevent, Deter and Eliminate IUU fishing (RPOA-IUU). The development of this RPOA-IUU was facilitated by FAO who rendered both financial and technical assistance and in accordance to the FAO International Plan of Action to Prevent, Deter and Eliminate IUU fishing (IPOA-IUU).

**Objective of the RPOA-IUU**

Regional Plan of Action to Prevent, Deter and Eliminate IUU fishing (RPOA-IUU) was made pursuant to the provisions of International Plan of Action to Prevent, Deter and Eliminate IUU fishing (IPOA-IUU) after an objective analysis of the existing actions, structure, framework, efforts and mechanisms of regulating IUU fishing both at national and regional levels in countries bordering the Gulf of Guinea.

The main objective of the RPOA-IUU is to serve as a roadmap for countries in the region in the development and adoption of their National Plan of Action to combat IUU fishing (NPAO-IUU). In addition, the RPOA-IUU proffers measures to be implemented as part of a regional strategy in combatting IUU fishing in the region.

**3.3 Challenges in the Implementation of The 2009 FCWC RPOA-IUU**

Following the recent review and evaluation of the 2009 FCWC RPOA-IUU by member states, the following was observed as the challenges affecting the proper implementation of the FCWC RPOA-IUU.

**a. Adoption of the NPOA-IUU**

It was found that several States in the FCWC region are yet to adopt the NPOA-IUU.
b. **Accession/ Ratification of relevant International Instruments**

It was found that some States in the FCWC region are yet to accede or ratify some relevant international instruments regulating fishing such as Port State Measures Agreement (PSMA), United Nations Fish Stock Agreement (UNFSA) and FAO Compliance Agreement (FAOCA).

c. **Signing of FCWC Convention**

One of the member State of the FCWC has not yet signed the FCWC Convention which deals with the minimum access to fisheries resources and pooling & data and information sharing.

d. **Updating the Legal Framework Regulating Fishing and the Harmonization of Sanctions**

It was found that one of the FCWC member State (Nigeria) has not update its legal framework regulating fishing since the year 1992 and that sanctions enacted in some member States are not deterrent enough to ward off IUU fishing in the region.

e. **Weak Monitoring, Control and Surveillance System (MCS) in the Region**

The evaluation and review found the following concerning MCS in the region

- MCS is weak in some member States;
- Weak cooperation and collaboration among institutions involved in MCS activities
- No Vessel Monitoring System and Automatic Identification System in some member States in the region
- No Operational Manual on MCS in some member States in the region;
- No regional observer and inspection program;
• No regional at sea patrols;

• Inadequate budget allocation for MCS activities;

• Inadequate human resources for MCS activities.

• Lack of or inadequate mechanisms in place for efficient and effective regional cooperation on fisheries MCS; and

• Inadequate strategies and mechanisms to support integrated MCS to ensure that countries can monitor and enforce fishery regulations

   f. Weak Traceability System to Prevent International Trade in IUU Fish

   g. Weak or No Regulations to Implement Port State Measures

   h. Lack of updates on Vessel and License Register.
CHAPTER FOUR - KEY IUU RELATED PROBLEMS IN NIGERIA

4.1. The Federal Republic of Nigeria

The Federal Republic of Nigeria is a country in the West of Africa with her capital territory in Abuja, the country is bordered by Benin Republic to the West, Cameroon to the East, Niger Republic to the North and the Gulf of Guinea to the South with approximately 853km long coastline measuring 913, 075 square meters (Udo, 2020). The Country is blessed with an abundance of natural resources which includes limestone, zinc, natural gas, crude oil, coal and fishery resources.

Nigeria is a country with several littoral states, 9 out of the 36 federal states in Nigeria have a coastline in the Atlantic Ocean. These 9 states are Lagos, Rivers, Ogun, Ondo, Delta, Akwa Ibom, Bayelsa, Cross-River and Ondo States, all in the southern region of the country.

In Nigeria, fish and fisheries product contribute a whole lot to the economy as about 3-5% of the agriculture share of the Nigerian Gross Domestic Product (GDP) is contributed by the fisheries sector (Olaoye, et al, 2018). The fisheries sector in Nigeria is a valuable tool for rural development as it provides high-quality protein, income to rural and artisanal fishers and above all contributes to the socio-economic development of the fishing communities in Nigeria (Olaoye, et al., 2016). The importance of the fisheries sector in Nigeria and its benefits to the country’s economy cannot be over-emphasized, however, there is a wide gap between the demand of fish and its supply as a result of IUU fishing and continuous use of medieval and traditional fishing method.

The Nigerian Government has made tremendous efforts over the years in implementing several strategies and projects aimed at increasing local supply of fish. Such projects include the 2nd and 3rd phases of the Fadama project (Olaoye, et al, 2018), Fadama project is a project of the Nigerian government to increase income from land and water resources in a bid to reduce poverty and increase food security as well as
contribute to the achievement of the sustainable development goals. Although, there have been tremendous improvements in terms of output, however, the ever growing population has significantly increased the demand for fish and fishery products bringing to the fore the need to make the country more self-sufficient in fish production for the local and international market (FAO, 2018).

Nigeria is the largest producer of the African specie of catfish in the world, this specie is the most commercially viable fresh water fish in Africa as it is traded in smoked form to neighboring African countries, Europe, America and the Middle East and a very popular fish in the Nigerian local market (FAO, 2018).

**Composition of Fish Catch in Nigeria**

Nigeria is one of the countries bordered by the Gulf of Guinea to the south, the Gulf of Guinea which is a region endowed with an abundance of energy and marine resources. The Gulf of Guinea is home to the most sought-after fisheries resources in the world. It is estimated that the region is home to over 3 species of turtles, 25 species of crustaceans, 17 species of cephalopods and 300 species of finfish which are exploited by artisanal and industrial fishermen and more recently by IUU fishers of (Adebayo & Daramola, 2013).

IUU fishers in Nigeria often target high-value species such as cod, as well as salmon, trout, lobster and prawns (Ajagbe, 2021). These IUU fishers are mainly interested in those species that are already overly exploited by legal fishing or those that are subject to restrictions for fisheries management purposes. The catch of these species are usually restricted and can only be traded in small quantities, demand and prices are high – making this a lucrative business for IUU fishermen.
4.2. Estimated Loss from IUU Fishing in Nigeria and the Gulf of Guinea

The Gulf of Guinea is bordered by West African countries in particular Nigeria, these countries rely mainly on small-scale fishing for food security and subsistence. Small-scale fishers in this region is estimated to have rapidly increased from an estimated 953,000 fishers in 1950 to 1.7 million fishers in 2010 and further, the fish catch of these fishers has increased from an estimated 599,000 tonnes annually in the 1950s to an estimated 2.4 million tonnes annually in the 2000s thereby injecting approximately $14.7 billion in the GDP of countries in this region (Belhabib et al, 2015).

However, IUU fishing has posed a major challenge to the great potentials of the fishing industry in the Gulf of Guinea (Okafor-Yarwood, 2020). A West Africa Progress Panel report in 2014 suggests that the Gulf of Guinea and West Africa at large is the epicenter of the impact and consequences of IUU fishing (Africa Progress Panel, 2014; Daniels, 2016). The Over-exploitation of fisheries resources in this region has negatively impacted on the economies of Coastal States in the region to which Nigeria is one of, this has negatively ruined the economic subsistence and livelihood of small-scale fishers in the region (Adibe, 2021).

Additionally, the progress report suggested that fisheries in the region has been fished beyond the Maximum Sustainable Yield (MSY), maximum sustainable yield as used in this context means the maximum catch which can be extracted from a fish or other population in the long term (Karim, 2020). The report further suggested that over 50% of the coast stretching from Senegal to Nigeria has been fished beyond its maximum sustainable yield and it is on record that over a 1/3 of this fishing is as a result of IUU fishing in the region (FOA, 2011; Africa Progress Panel, 2014). Accordingly, Countries in the Gulf of Guinea loses over $1.3 billion annually to IUU fishing (Africa Progress Panel, 2014).

In Nigeria, there has been widespread concern about the decline in fish catch in Nigerian waters because of IUU fishing that has threatened the sustainability of fisheries. This has resulted in radical changes in species composition, decline in catch
and depletion because of poor and ineffective fishing regulations (Omar, Mohamed & Bambale, 2019).

Over the last decades, fish catch in Nigeria waters have steadily declined from 213,996 metric tonnes in 1998 to 194,226 metric tonnes in 2000 and 2001 respectively (Abiodun, 2021) due to IUU fishing activities such as use of prohibited fishing gears, overfishing, use of small mesh, fish poisons and explosives. The Nigeria domestic fishery market has an existing demand of over 1.5 million metric tonnes per annum. Incidentally, this demand is not matched by supply of 511,700 metric tonnes that comes from mostly domestic fish catch from artisanal fishers thereby, leaving a gap of 988,300 metric tonnes. The status of Nigeria fisheries can be largely attributed to the ineffective fisheries governance that has significantly threatened the management of fishery resources. The absence of an effective fishing governance has over the years been linked to weak, outdated, incoherent fishing regulations (National Intelligence Council, 2016).

Nigeria is a country blessed with extensive water bodies with an abundance of fishery resources of high commercial value. These fishery resources contribute immensely to the food security as well as subsistence of local fishers (Okafor-Yarwood, 2020). However, the sustainability of fisheries has been threatened by IUU fishing activities in the region and this has been as a result of the absence of effective fishing regulations governing the fishing industry in Nigeria. Regulating the fishing industry through effective and up-to-date fishing regulations and the imposition of severe penalty for IUU activities will go a long way in enabling the country discover the untapped potentials of fisheries (Widjaja, Long, Wirajuda, et al., 2019).

4.3. The Fisheries Industry in Nigeria

This section discusses the economics of fishing in Nigeria. Economics of fishing in this context entails the financial management of fishing in Nigeria and this
encompasses the production, distribution and the consumption of fish and its products (Neil, 2018).

Nigeria is estimated to be the largest consumer of fish in Africa and one of the largest fish consumers in the world (Adelesi, 2019) with about 3.2 million metric tons of fish consumed annually (The Embassy of the Kingdom of the Netherlands, 2019). The annual fish demand in Nigeria is estimated to be approximately 2.66 million tonnes with a domestic fish production of approximately 780,000 tonnes, it is quite worrisome that the demand and supply gap stands at a staggering 1.8 million tonnes (Adelesi, 2019; Nwiro, 2012). Despite the huge popularity of fishing in Nigeria, the fishing sector in Nigeria can be best described to be at an infant stage which is in stark contrast to the large market which exist for its production and marketing (Nwiro, 2012).

Nigeria’s fishery resources comprise primarily of a dwindling marine capture fisheries and an ever developing aquaculture industry; aquaculture which basically involves the nurturing of fish under a controlled environment wherein their feeding, growth, health and reproduction will be closely monitored (Olaoye, et al., 2016; Oyakhilomen & Zibah, 2013). The aquaculture sector in Nigeria is private sector driven as a result of the recent significant investment of private capital and the continued political will to develop the aquaculture industry (Adelesi, 2019). This continued investment has led to a significant development of the industry resulting in Nigeria being the largest aquaculture producer in Sub-Saharan Africa with an ever increasing production rate from 21,700 tonnes produced in 1999 to 316,700 tonnes in 2015 employing 13,627 people as at 2012 (2% of which are women (FAO, 2017).

Fish supply in Nigeria is sourced from four major sources viz. aquaculture, artisanal fisheries, industrial trawlers and imported frozen fish (Grema, 2020; Akinrotimi, et al, 2011). Recently, there exist an ever increasing market for imported fish in Nigeria as a result of the need to satisfy the demand of the ever growing population and maintain its food security, in 2013, Nigeria recorded a total fish import amounting to an estimated USD 1.2 billion and an export total estimated at USD 284,390 million which
implies that Nigeria is a net importer of fish and fishery products despite her huge fish production potential (FAO, 2017)

Despite the huge potential of the Nigerian fishing industry, it is estimated that Nigeria spends approximately N100 billion annually on fish importation and the demand consumption for fish in Nigeria is estimated at 2.66 million tonnes annually while the rate of import is over 750,000 tonnes (Oota, 2012) leaving a gap which ought to be filled by the domestic fishing industry which has been severely depleted by IUU as fishers are forced to go deep into the sea for fish catch and most times toil all night with no catch (Okafor-Yarwood, 2020). The importation of over 750,000 tonnes of fish annually mean that the country spends approximately USD 600 million on fish importation (USAID, 2010). This continued importation of fish indicates a colossal loss of foreign exchange earnings to the country.

The ever-growing Nigerian population comes with an increasing demand for fish, which has increased the level of importation of fish and a colossal loss to the country’s foreign exchange earnings. In Nigeria, importation has provided over 56.0% of fish supply in Nigeria amounting to over a half of Nigeria fish supply (Olaoye, et al., 2018). Importation in this context refers to the supply of fish from foreign countries to Nigeria in order to augment local production.

According to Nigeria Federal Ministry of Agriculture and Rural Development (FMARD) (Adesina, 2012), Nigeria recorded an annual expenditure of N97 billion on fish importation in 2010 in spite of the country’s endowed marine resources (Adesina, 2012). Also according to Agbo (2015), Nigeria recorded an annual expenditure of N125 billion on fish importation of approximately 1.90 million tonnes of fish as at 2015 (Agbo, 2015). In a study of the major food imports in Nigeria conducted by Vaughan et al (2014) a statistics obtained from the National Bureau of Statistics (NBS), it was discovered that fish had the second highest import bills in the period between 2006-2010 with an annual estimated expenditure of N133.66 billion. According to Olaoye et al. (2018) the quantity of fish importation increased from 557,884 tonnes to 739,666 tonnes in the period between 2000 – 2007 and a foreign
exchange value rising from USD 241, 065.54 million to USD 594, 373.69 million between the period between 2000 – 2007 ranking Nigeria as the largest fish importer among developing countries (Adewumi, 2015; Tunde, 2015). This figure shows that importation of fish is on the increase while domestic fish capture is dwindling as fishers are unable to harvest fishes as a result of IUU fishing (Olaoye, et al, 2018)

It is worrisome and a sad reality that despite the integral role of fisheries resources to the country’s economy, there exist a paucity of empirical data on the link between fisheries and the economic growth in Nigeria, in view of the foregoing, there is a need to fill this gap in literature. This dissertation seeks to establish the casual relationship between the fishing industry to the economic growth of Nigeria and the impact of IUU fishing on the fishing industry while recommending the regulation of IUU fishing through policies as a gateway towards a sustainable economic development of Nigeria.

**Fishing - a source of Protein**

Nigeria is blessed with an extensive body of water with an abundance of fishery resources which are of high commercial value. The Nigerian population is estimated at over 200 million people (Akinsorotan, 2019) and the fisheries resources substantially contribute to the livelihood of a huge number of the Nigerian population (Rabo, 2014; Etim, 2015). In Nigeria, there exist artisanal and small-scale fishers of both the male and female gender who exploit these fisheries resources as a source of food and animal protein. Fisheries is the preferred source of animal protein because of its cheap price compared to meat and its richness in amino-acid and minerals which is necessary for human growth. Fisheries is estimated to contribute approximately between 41-75% of animal resources to the Nigerian population (Onyema, 2017)

According to the Food and Agricultural Organization (FAO), the annual *per caput* consumption of fish in Nigeria is estimated at 13.3kg in 2013 (FAO, 2017) which shows the important dietary element of fish as the few sources of protein available in Nigeria.
However, IUU fishing has posed a great threat to food security in Nigeria as fish catch has significantly declined from 213,996 metric tonnes in 1998 to 194,226 metric tonnes in the year 2001 and this number has continued to declined thereby threatening the food security and subsistence of small-scale and artisanal fishers who heavily rely on these fisheries resources for food and income (Omar, Mohamed & Bambale, 2019).

**Fishing - a source of Income**

Fisheries in Nigeria contributes not only to the food security of the country, it also serves as a valuable source of income and revenue to the country as well as the as a locus cultural tradition and lifestyle for several littoral states in the country especially the Niger Delta region (Vincent-Akpu, 2013). Fishing serves as a major source of income and livelihood to an estimated 713,036 as at 2014, a number which should be higher at this time (FAO,2017)

According to the FAO, Nigeria has an estimated total fish export value amounting to USD 284,390 million in 2013 (FAO,2017). The total fishery production in Nigeria in 2015 was estimated at 1027000 tones contributing to 5.40% of the Nigerian Gross Domestic Product (GDP) in 2015 (Alawa, 2016), 80% of which is generated by small-scale artisanal fishers (FAO, 2017). Gross Domestic Product in this context is a measure of the total output or the monetary and market value of goods and services that is produced in a given country within a specified time (Chamberlin, 2011).

The essential contribution of the fisheries sector to the Nigerian economy cannot be over-emphasized as the Nigerian population have a huge appetite for fish with an estimated annual demand of 1.50 million tonnes (Fakoye, 2018), a figure which has continually been on an increase to a projected annual fish demand of 2.055 million tonnes in 2015 (Odediran, 2017)

Although the paucity of data has made it difficult to ascertain the current and real extent of IUU fishing to the GDP of Nigeria as there is no access to a robust Monitoring Surveillance and Control (MSC) system (Vaugan, 2014). Nevertheless, Onuorah
stated that Nigeria losses an estimated USD 800 million annually from the threat of IUU fishing (Okafor-Yarwood, 2020). This assertion by Onuorah has not been verified as a result of the lack of data in Nigeria. The figures from the Nigerian Department of Fisheries shows that the threat of IUU fishing from foreign commercial vessels accounts for an estimated loss of USD 29 million in shrimps annually (Okafor-Yarwood, 2020).

4.4. Constraints to the optimal production of Marine Fisheries in Nigeria

A number of constraints hinder the optimal marine fisheries production in Nigeria. These threats to the marine fisheries resources will be grouped into natural threats and human threats;

Natural threats

Generally, the production of fisheries resources is affected by ocean current, salinity, wind speed and direction, concentration of carbon-dioxide, unavailability of nutrients, snow and the consumption of smaller fishes by the larger predator fish, seabirds and mammals (Jennings, 2009).

Nigeria is known for its relatively narrow continental shelf extending to approximately 15km to the west and ranges from 60 to 80km to the east (Bolatito & Aladele, 2019) which results to excessive pressure been put on fishes inshore as trawlatable areas are limited to just 3.20 km² (27.9%) out of 11.5 km² to which Nigeria is blessed with (Olaoye, 2018) and finally, the low lying nature of the Nigerian coast makes it vulnerable to coastal erosion, storm surges wetlands and inundation of the mangrove which destroys the fragile fisheries habitat which serves as breeding ground and nurseries for fishes (Ajibade, 2017).
**Human threats**

The Federal Republic of Nigeria is the 7th most populated country in the world and it has been predicted that the country will eventually be the 3rd most populated country by the year 2050 (Olugbenga, 2017). The large population of the country comes with a high demand of fisheries resources and this increase in human population has put more pressure on the already depleted fisheries resources.

The Food and Agriculture Organization has predicted that by the year 2030, there will be a need for an additional 37.0 million tons annually to maintain the current rate of fish consumption globally and it is worthy to note that the gap between demand and supply of fish is continually growing on a daily basis (Akinsorotan, 2019).

The optimal production of fishery resources in Nigeria is affected by several other human factors. These factors will be briefly discussed under the following headings: Overfishing, lack of resources for monitoring and surveillance, ghost fishing, bycatch, use of destructive fishing gears, bottom trawling, dynamite fishing and cyanide fishing, environmental activities and lack of accurate data.

**Overfishing**

Overfishing is the harvesting of fish from a fish population beyond its maximum sustainable yield (Karim, 2020). Overfishing is a human activity and the problem of overfishing has been of great concern globally as the act poses a great threat to the marine fisheries resources.

In Nigeria, the threat of overfishing exists as a West African Progress Report in 2014 suggests that the Gulf of Guinea and West African region to which Nigeria is a part of, has been overfished beyond the maximum sustainable yield as over 50% of the coast stretching from Nigeria to Senegal has been fished beyond its maximum sustainable yield and over 1/3 of this is as a result of IUU fishing in the region (FAO,
Overfishing in Nigeria is caused by several factors including increase in population, lack of resources required for monitoring and surveillance, Ghost fishing and inaccurate data (Olaoye, et al., 2018).

**Ghost Fishing / Dynamite Fishing**

These are fishing gears which have been abandoned, lost or discarded but which continue to fish in the seas unsupervised (FAO, 2016). Ghost fishing contributes to the depleting commercial fish stock as these fishes when caught by these lost nets dies off, attracting scavengers which are in turn caught in the same net causing a vicious death circle. Ghost fishing gears contribute an estimated 10% of annual marine debris out of a total global estimate of 6.5 million tonnes (Gilman, 2015).

The FAO and the United Nations Environmental Program suggests that ghost fishing will likely escalate in the near future as a result of the increased scale of fishing activities (FAO, 2016). It was further suggested that highly durable synthetic fishing gears should be introduced. It is left to be seen if this suggestion will be implemented by IUU fishers whose singular aim is to make profit in utter neglect of its consequences on the marine environment. The continued activities of these IUU fishers in Nigeria will continue to increase the spate of ghost fishing while decreasing fisheries production in the country.

Dynamite fishing is also part of human threats to fisheries. This is a destructive fishing practice wherein explosives and bomb blast are used in killing fish stock that are in close proximity (Glassco, 2017). This practice is prevalent in Nigeria and practiced by artisanal fishers. These dynamites are made with empty bottles filled with potassium and artificial fertilizer. When they are dispensed into water, they explode and sends shock waves that disrupts the symbiotic relationship between corals and algae, gradually these corals lose its nutrients and dies off (Glassco, 2017).
Bycatch / Use of Destructive Fishing Gears

Bycatch are species of fish that are incidentally and unintentionally caught. They are also referred to as non-targeted species (Ganesh & Geetha, 2020) however, these catch are vulnerable to overexploitation. In the course of fishing intended targets, the non-targeted species are oftentimes accidentally entangled and entrapped by fishing gears (Glassco, 2017). These vulnerable species of fish include dolphins, sharks, whales, sea turtles and seabirds (Allman, et al., 2021). Bycatch affects the optimal production of marine fisheries resources.

IUU fishing is characterized by a high level of incidental and unintentional captures due to the fact that this fishing is done in commercial quantity but with no directed effort (Redrado, 2020). The amount of bycatch is very high as a result of IUU fishing, it is globally estimated that 7.3 million metric tonnes of bycatch is discarded annually in the world’s commercial fisheries from 78.4 million metric tonnes of landed catch (Savoca, 2020).

Fishing gear are generally the equipment used by fishers in the course of fishing. These fishing gear include nets, lines, hook and traps (Glassco, 2017). Destructive fishing gear otherwise referred to as non-selective gear is the use of fishing gear in a manner, which damages or destroys the marine ecosystem (FAO, 2008). The uncontrolled nature of IUU fishing gives room for the use of fishing gear in a manner, which destroys the marine ecosystem. This practice is prevalent in Nigeria and in extension the Gulf of Guinea where there are weak fishing regulations and an absence of any form of inspection to ascertain the fishing gear used and the way and manner they are used by these fishers. Destructive fishing comes in different forms such as cyanide fishing, dynamite fishing and ghost fishing.
**Bottom Trawling/ Cyanide Fishing**

There exist different types of fishing nets, this ranges from simple nets used by local and artisanal fishermen to the more sophisticated nets which are used by fishers engaged in commercial fishing and IUU fishers. Destructive fishing nets used by these IUU fishers include dredgers and benthic trawlers which have a blade-like metal that digs into the bottom of the sea and scrape all the organism and captures a large amount of bycatch into an armour-plated or steel net which drag across the seabed and disturbs the marine habitat (Watson et al, 2006). The continued use of these destructive fishing nets will continue to hinder marine fisheries production in Nigeria.

Cyanide fishing is a destructive fishing method which is predominantly used in catching life reef fishes; these cyanide poison is deposited in the water by divers in targeted areas where these reef fishes are seen, the cyanide stuns the fish temporarily which makes it easy for collection, however, in this process oftentimes non-targeted species like invertebrate are destroyed (Calado et al., 2014) thereby hindering the optimal marine fisheries production in Nigeria.

**Lack of Resources for Monitoring and Surveillance / Inaccurate Data**

Article 56 of UNCLOS gives a coastal State the sovereign right to exploit and explore all natural resources both living and non-living in its EEZ. The creation of the EEZ which does not extend beyond 200 nautical miles from the baseline of the breadth of the territorial sea has created a whole new problem with respect to enforcement and compliance. Developing States such as Nigeria are unable to procure Satellite Vessel Monitoring System or patrol vessels which is required for the surveillance and monitoring of the vast waters of the EEZ. The failure to effectively monitor and enforce fisheries regulations in Nigeria has served as an encouragement to IUU fishers to continue to carry out these illegal fishing thereby further depleting the already depleted fisheries resources (Olaoye, 2018).
Inadequate and inaccurate data is one of the problems facing developing countries to which Nigeria is not an exception. The marine fishing industry in Nigeria is faced with the challenge of lack of relevant information and data on catch landing, fishing vessels, fish stock biomass and the data of marine fisheries production (FAO, 2016; Bianchi, 2014). This is in contrast to the aquaculture sector where the sector is estimated to produce 313.2 thousand tonnes of fish annually, the data for annual marine fisheries production is unavailable therefore, annual catch landing cannot be accurately estimated (FAO, 2016)

4.5. Factors Responsible for Illegal Fishing Activities in Nigeria

IUU fishing by both local and foreign vessels in the Gulf of Guinea region do not happen in a vacuum. Some factors contribute to these unauthorized fishing activities and they include a host of environmental, policy and ethical factors. The above factors will be briefly discussed below.

Environmental Factor

Nigeria ranks highly as one of the world’s richest fishery grounds for different fisheries resources such as catfish, mackerel and sardine fish (Okafor-Yarwood, 2020). The vast coastline and its sheer size and its unprotected nature makes it a major focus of IUU fishers who operate undetected in this region from the European Union, Asia and other continent. Although certain international regulations governing the seas forbids the carrying out of fishing activities in the territorial sea and EEZ of another country without permission, these activities have been going on in Nigeria unhindered as a result of the lack of expertise and the capacity to patrol such vast maritime area (Olaoye, 2018) which has resulted in both local and foreign trawlers engaging in illegal and unauthorized fishing in this region in utter neglect of the global conventions prohibiting same.
Contradictory and Ineffective Policies

Another factor that contributes to the plundering of fisheries resources in the Nigeria by IUU fishers comes from the contradictory and ineffective policies regulating fisheries capture in Nigeria (Okafor-Yarwood, 2020; Olaoye, 2018). This ineffectiveness can be linked to the weak capacity of the governments to monitor and enforce compliance to these policies by these rogue trawlers from other countries. These lapses in fishing regulation and its enforcement are exploited by these foreign trawlers with large fishing fleets in an area where they can operate undetected by the understaffed navy of the country (Fakoya, 2018). Advancement in equipment and fishing methods by these large industrial trawlers backed by large subsidies from their governments has made commercial fishing more lucrative, these fishers now find it easier to fish further from home, these level of access has placed more pressure on the fisheries resources in developing countries thereby leading to more IUU fishing in developing countries such as Nigeria (Olaoye, 2018).

4.6. Impact of IUU Fishing in Nigeria

The impact of IUU fishing on the sustainability of fisheries resources in Nigeria cannot be over-estimated. It is clear that if the issue of IUU fishing is not properly addressed, there will be tremendous environmental and economic impact globally especially developing countries such as Nigeria and the countries in the Gulf of Guinea in the nearest future. The impact of IUU fishing in Nigeria will be discussed under two headings namely environmental and economic impact below.

Environmental Impact

The negative impact of IUU fishing to the marine environment cannot be over-estimated. Fishing activities are generally known to be of great threat to the fragile marine ecosystem, these destruction of the marine ecosystem depletes fisheries
resources thereby resulting to loss of economic earnings (Fillie, M. T., 2019). Fishing in an unregulated manner leads to a significant increase in catch landing but results in the over-exploitation and depletion of fisheries resources, which are sometimes results in fishing beyond the maximum sustainable yield. The use of equipment and destructive fishing gears in some delicate fishing areas such as spawning grounds and fish nurseries, which are activities synonymous with IUU fishers, poses a great threat to the marine environment.

In Nigeria, it is extremely difficult to estimate the full environmental impact of IUU fishing, however, it is crystal clear that fishing activities by IUU fishers which are sometimes done with destructive fishing gears results in the continual destruction of the vulnerable reefs and the large marine ecosystem, consequently, culminating in the destruction of fisheries nurseries and habitat thereby, further depleting the already depleted fisheries resources. In addition, the use of fishing vessels and such other activities on board these IUU fishing vessels contribute to environmental degradation and depletion of fisheries resources through the release of pollutants into the marine environment. These pollutants include fuel, hydrocarbons, lubricants, sewage water, organic compound, wastewater, soaps and detergents, which contain surfactants and phosphates (Neil, 2018)

**Economic impacts**

Fisheries in Nigeria contributes not only to the food security of the country, it also serves as a valuable source of income and revenue to the country. Fishing serves as a major source of income and livelihood to an estimated 713,036 as at 2014, a number which should be higher at this time (FAO,2017)

According to the FAO, Nigeria has an estimated total fish export value amounting to USD 284,390 million in 2013 (FAO,2017). The total fishery production in Nigeria in 2015 was estimated at 1027000 tones contributing to 5.40% of the Nigerian Gross
Domestic Product (GDP) in 2015 (Oluwatayo, 2019), 80% of which is generated by small-scale artisanal fishers (FAO, 2017).

The essential contribution of the fisheries sector to the Nigerian economy cannot be over-emphasized as the Nigerian population have a huge appetite for fish with an estimated annual demand of 1.50 million tonnes (Fakoya, 2018), a figure which has continually been on an increase to a projected annual fish demand of 2.055 million tonnes in 2015 (Odediran, 2017)

Although the paucity of data has made it difficult to ascertain the current and real extent of IUU fishing to the GDP of Nigeria as there is no access to a robust Monitoring Surveillance and Control (MSC) system (Vaughan, 2014; Okwu, 2011; Tunde, 2015). Nevertheless, Onuorah stated that Nigeria losses an estimated USD 800 million annually from the threat of IUU fishing (86). This assertion by Onuorah has not been verified as a result of the lack of data in Nigeria. The figures from the Nigerian Department of Fisheries shows that the threat of IUU fishing from foreign commercial vessels accounts for an estimated loss of USD 29 million in shrimps annually (Okafor-Yarwood, 2020).

In addition, several other sources of revenue which contributes to the Gross Domestic Product of Nigeria such as revenue from taxes, licenses and levies on fishing vessels are lost through IUU fishing thereby, posing a great economic challenge to the Nigerian economy. Unreported catch landings and illegal trans-shipment within the Nigerian territorial waters and EEZ results in a significant loss of valuable earning and loss of employment sector (Olaoye, 2018)
4.7. Historical Evolution of Marine Fisheries Regulations in Nigeria

This part of the dissertation seeks to trace the historical evolution of national marine fisheries regulation in Nigeria from the first regulation made after the country’s independence from colonial rule down to the most recent regulation governing fisheries in the country.

Although, the deliberate efforts aimed at developing a regulation governing fisheries in Nigeria started in 1941, however, no fishing regulation was made during that period, several national policies and programmes were put in place, which were primarily focused on increased fish production through technology transfer, input supply at subsidized rates and revolving loan schemes for fishermen. It was not until 1971 when interim measures were put in place by the Nigerian government pending the collation of scientific information and collection of data. The government with the advice of the Federal Department of Fisheries promulgated the Sea Fisheries Decrees of 1971 and the 1971 Sea Fisheries (Licensing) Regulations (Vincent-Akpu, 2013). The aim of this decree was to regulate, control and protect fisheries in the Nigerian waters (Ekpo, 2013).

The Sea Fisheries Decree of 1971 was made up of 14 sections and regulated the following:

a) Section 1 – this section dealt with the licensing of motor fishing boats in Nigeria;

b) Section 2-4 – this sections dealt with application for a license, grounds upon which a license will be issued and the renewal of licenses

c) Section 5-6 – this sections dealt with appeals and returns

d) Section 7- this section dealt with the enforcement of the Act

e) Section 8 – this section prohibited the use of any explosive, noxious or poisonous substances that could destroy fishes in the Nigerian territorial waters

f) Section 9 – this section dealt with offences and penalties
g) Section 10- provided for forfeiture of any fishing apparatus or boat used in contradiction to the provisions of the Act

h) Section 11- this section empowered the Minister for Agriculture to make regulations which will further the interest of the Nigerian fishing industry

i) Section 12 – Interpretation of the content of the Act


Similarly, the 1971 Sea Fisheries (Licensing) Regulation was made up of 6 regulations and 2 schedules. The Regulation specifically dealt with licensing of all motor fishing boats in the Nigerian waters. The Regulation prescribed the Application form to be used in applying for a license or the renewal of a license for all fishing vessels operating and navigating the Nigerian territorial water. Form A to Schedule 1 prescribed the particulars, which must accompany an application for license while Form B to Schedule 1 provided for the type of license required to operate a given type of fishing vessel. Schedule 11 provides for the fees payable for a license. It is also important to note that this regulation was not to apply to either motorized or non-motorized fishing canoes.

Following the successes recorded by the Sea Fisheries Decree of 1971 and the 1971 Sea Fisheries (Licensing) Regulation, the Nigerian government made another regulation referred to as the Sea Fisheries (Fishing) Regulation of 1972. This regulation was made as a supplement to the existing Sea Fisheries Decree, which was made to prohibit fishing in the territorial water of Nigeria. The new regulation prohibited fishing trawlers from fishing within 2 nautical miles (nm) of the Nigerian continental shelf. The intention of the drafters of this regulation was to restrict industrial trawlers from competing with domestic and artisanal fishers and this regulation was made in response to the complaint made by artisanal fishers stating that industrial trawlers were destroying their fishing nets (Nwosu, 2011). In essence, this
regulation gave artisanal fishers the exclusive right to exploit fisheries resources from the shore to within 2 nautical miles of the continental shelf (Etim, et al., 2015).

The Regulation provided the following (Ajayi, 2016):

a) That no industrial trawler shall fish within 2nm of the continental shelf of Nigeria. This area was referred to in the Regulation as a “non-trawling zone”.

b) Artisanal fishers who fish in this zone must make use of a mesh size of 3.00 inches and above.

c) All fish catch by these artisanal fishers must land at port and shall not be made available for export at sea outside Nigeria.

d) Penalties and fees for default

In 1978, the Nigerian government promulgated the Exclusive Economic Zone Decree of 1978. This Decree was promulgated in line with the United Nation Convention on the Law of the Sea, 1982 (UNCLOS) (Nwosu, 2011). The essence of this Decree was to empower Nigeria to extend the Nigerian territorial water beyond 200 nautical miles from her coast. The promulgation of this Decree further allowed Nigeria to exploit all natural resources including fisheries resources which are within the exclusive economic zone (Akinsorotan, 2019).

**The Sea Fisheries Act of 1992**

This is the current law regulating fishing in Nigeria. This Act repealed and replaced the 1971 Sea Fisheries Act with the aim of continuously ensuring the sustainability of fisheries within the Nigerian territorial water and the exclusive economic zone (EEZ) (Olaoye, et al., 2018). This Act was gazetted as No 71 of the Laws of the Federation of Nigeria (LFN) 1992. The Sea Fisheries Act of 1992 contain 17 sections and provided for the following:

a) Licensing of fishing vessels and Renewals

b) Penalties for unlicensed fishing vessels fishing without license
c) Duties of Licensing officers
d) Penalties for the violation of any provision of the Decree
e) Forfeiture
f) Appeals

The Act maintained the restriction placed on industrial trawler from fishing close to the shore, however, the Act extended the “non-motorized” fishing zone from 2 nautical miles to 5 nautical miles (Moruf, 2020).

It is a painful reality that 29 years after the enactment of this Act, this is still the Act regulating fisheries in Nigeria despite the changing times and outdated nature of some of the provisions of this Act.

In 1995, the Nigerian government made a complimentary regulation to the Sea Fisheries Act of 1992. This regulation is known as the Sea Fisheries (Fish Inspection and Quality Assurance) Regulation of 1995. The regulation originated from section 14 of the Sea Fisheries Act of 1992. The regulation provides for rules which regulates the quality of fish, handling on board, hygienic condition for its transportation, storage and its packaging. The Regulation further deals with fish inspection and quality assurance as a method of checking fisheries product. The essence of this Regulation is that no person or any corporate body can import or export fish or any fisheries product without first satisfying all the relevant requirements provided for in this Regulation.

4.8. Challenges Associated with the Regulation of Fisheries in Nigeria

It is a clear fact that the impact of IUU fishing is felt by both the developed, developing and the under-developed countries (FAO, 2016), however, it is arguable that the impact of IUU fishing is more felt by the developing and under-developed countries who obviously depend on fisheries for food security, subsistence and a source of employment (Okafor-Yarwood, 2020).
IUU fishing activities are most times conducted in these developing countries especially countries in West Africa who cannot afford very costly and very complex fisheries management and control measures as established in Europe. These countries for which Nigeria is one of, have weak governance, ambivalent legislations, large scale corruption, lack the capacity and will to enforce existing national fisheries legislations and lack MCS systems which makes it difficult for effective monitoring and control (Ojekunle, 2020).

In Nigeria, there are several challenges that account for the inability to regulate and implement fisheries regulations and they are:

a. There is an absence of a central crimes register for persons caught engaging in IUU fishing activities, this in itself complicates Monitoring, Control and Surveillance efforts on the field
b. There is a poorly structured and functional MSC in Nigeria, inadequate monitoring and surveillance inspectors and this motivates fishers to engage in IUU fishing activities without the fear of being apprehended
c. There is insufficient fishing data and scientific information on fishes
d. There is an absence of well-trained fisheries inspectors who are committed and well-equipped to carry out inspection tasks
e. There is poor coordination and information sharing between countries in the Gulf of Guinea region
f. The Sea Fisheries Act of 1992 which is the current fishing regulation governing fisheries in Nigeria is outdated and contains poor penalties and low fines for defaulters. These fines are too low to discourage violators of the Act.
g. Non implementation of international instruments regulating fisheries and some provisions of the fisheries law is not in conformity with international instruments which implies that they are not implemented in conformity with international principles.
Chapter Five: Conclusions and Recommendations

Conclusions

The negative impact of IUU fishing to the sustainability of fisheries cannot be over-emphasized; this has triggered widespread concerns in recent times as a result of the steady decline in fish catch and the corresponding global economic loss caused by IUU fishing. The negative impact of IUU fishing has also affected Nigeria, despite being blessed with extensive water bodies and an abundance of fishery resources of high commercial value, fish catch in Nigeria has steadily declined.

Fisheries resources contribute immensely to the food security and subsistence of the Nigerian populace while also contributing immensely to the Nigerian economy as about 3-5% of the agriculture share of the Nigerian GDP is contributed by the fisheries sector. The fisheries sector in Nigeria is a valuable tool for rural development as it provides high-quality protein, income to rural and artisanal fishers and above all contributes to the socio-economic development of the fishing communities in Nigeria. The importance of the fisheries sector in Nigeria and its benefits to the country’s economy cannot be over-emphasized; however, there is a wide gap between the demand of fish and its supply as a result of IUU fishing and continuous use of medieval and traditional fishing method.

The Nigerian Government has made tremendous efforts over the years in implementing several strategies and projects aimed at increasing fish production without success. From the preceding chapters, it can be safely argued that the negative status of Nigeria fisheries production can be largely attributed to the ineffective fisheries governance which has significantly threatened the management of fishery resources. The absence of an effective fishing governance has over the years been linked to weak, outdated, incoherent fishing regulations.
It is a sad reality that the Sea Fisheries Act of 1992 still remains the legal framework regulating fisheries in Nigeria despite the changing times and outdated nature of some of the provisions of this Act. This Act has not been updated nor amended even when it is glaring that the sanctions provided by the Act is not deterrent enough to ward off IUU fishing activities.

Section 10(2) of the Sea Fisheries Act of 1992 provides that it is a criminal offence to engage in illegal and unauthorized fishing in Nigeria. However, the penalty for default is a two-year jail term on conviction or a fine of N50,000 which is a paltry $100, this provision also did not make this penalties conjunctive rather they are disjunctive. This provision has not been updated to reflect the times we live in.

The potentials of fisheries in Nigeria is enormous, in spite of this huge potential, the country is still bedeviled with hunger, developmental challenges, high rate of poverty estimated at over 75% of its population and unemployment rate estimated at 23.9% (Business Day, 2012) and unable to meet the nutritive requirement of its over 200 million people.

The research examined the connection between IUU fishing in Nigeria and its impact or non-impact on economic development. As a corollary, the thesis further considered whether effective implementation can play a role in harnessing the potentials of fisheries in Nigeria.

The research also highlighted the various measures available to deter IUU fishers as well as mitigate the impact of IUU fishing in Nigeria; in addition, the research recommended stricter penalties for IUU fishing with other technical support and the strengthening of regional information sharing as roadmap towards eliminating IUU fishing in Nigeria.

The thesis thoroughly investigated the formulated research questions by using the various sources of international law, which are listed in Art. 38 of the Statute of the International Court of Justice; International conventions, customary international law,
general principles of law, Statutes applicable to fisheries in Nigeria as well as regional laws which apply in Nigeria and concluded that, if left unregulated, IUU fishing will ultimately lead to the total collapse of the Nigeria fishing industry.

It is obvious that the country cannot solve these challenges facing fisheries production especially the threat of IUU fishing by folding its arms and doing nothing. Therefore, developing an effective legal framework regulating IUU fishing in Nigeria will set the country on the path towards discovering the untapped potentials of fisheries in Nigeria.

**Recommendations**

The threat and negative impact of IUU fishing activities to Nigeria and the world at large cannot be over-emphasized. As IUU fishing activities continue to be on the rise, there is an urgent need for a multifaceted response to these threat especially for developing countries like Nigeria who rely heavily on fisheries resources for food and economic subsistence. In order to combat the threat of IUU fishing in Nigeria, the following recommendations will help in reducing illegal fishing in Nigeria and the Gulf of Guinea.

**Development and Adoption of the National Plan of Action on IUU Fishing**

It is recommended that Nigeria develops and adopts a National Plan of Action to prevent, deter, and eliminate IUU fishing which will be in line with the Regional Plan of Action to prevent, deter, and eliminate IUU fishing and also the International Plan of Action to prevent, deter and eliminate IUU fishing.
Enactment of a new Fisheries Regulation or Amendment of the Sea Fisheries Act, 1992

Nigeria must also amend or update all national laws and regulations in force in the country to include the relevant principles and standards embedded in the aforementioned international instruments and ensure effective implementation. The 1992 Sea Fisheries Act, which regulates fisheries activities in Nigeria, is outdated and requires amendment. It is recommended that this Act be amended and most especially Section 10 should be reviewed and amended to reflect the changing times.

Signing, Ratification and Accession to the Relevant International Instruments Regulating Fishing.

Although, the Federal Republic of Nigeria has been quite active in the signing and ratification of several international instruments regulating the shipping industry, however, there are some international instruments regulating fisheries to which Nigeria is not a party. It is recommended that Nigeria signs and accede to all relevant international instruments regulating fishing. Currently Nigeria is not a party to the FAO Agreement on Port State Measures to prevent, deter and eliminate IUU fishing of 2009 and the FAO Compliance Agreement of 1993. In order to better combat IUU fishing in Nigeria, it is imperative that the country become a party to the above-mentioned international instruments.

Strengthening and Improvement of Monitoring, Control and Surveillance System.

In a bid to combat IUU fishing in Nigeria, the government must strengthen and improve the monitoring, control and surveillance system. This will be done through recruitment of personnel, procurement of equipment and logistics, implementation of regional VMS and AIS programs, harmonization of VMS and AIS, implementation of
national and regional observer programs, implementation of national and regional at sea patrols and inspection programs and training of personnel.

The government must further ensure the amendment of existing laws and regulations as well as the enactment of new laws and regulations which makes the following provisions mandatory (a) installation of transponders of vessel monitoring system on all national industrial vessels or foreign vessels under access arrangement as a condition of issuance of fishing license or authorization; (b) use of electronic data from VMS transmission as evidence of offence; (c) deterrent sanctions against vessels engaged in IUU fishing; and (d) deterrent sanctions against owners, operators, captains and crew of vessels engage in IUU fishing (Mbotiji, 2019).

The government must collaborate with other countries in the FCWC region to establish a regional VMS and AIS system, which will be integrated and harmonized with the systems at the national centers for the effective dissemination of information and data regarding IUU fishing vessels found in the region.

There should also be the establishment of a joint inspection and surveillance operations between countries in the FCWC region to strengthen the surveillance capacity of the region in combatting IUU fishing.

Finally, it is recommended that the government collaborate with the governments of countries in the FCWC region to set up a regional observation operation, which will be focused at sea, and the markets to monitor the sale of illegal fisheries products.

**Creation of awareness and the active participation of various Professional Associations and NGOs**

The government must undertake to carry out awareness programmes to the rural and fishing communities enlightening them on the negative impact of IUU fishing to ecological and socio-economic development of the country.
The government must further develop a regional programme, awareness campaigns and training of socio-professional organizations and NGOs in order to ensure their involvement in the development of strategies to combat IUU fishing activities.

The government must develop a website, which must be regularly updated both at the national and regional level, which will be updated with necessary information including regulations, laws, IUU fishing control plans, fisheries policies, and regional conventions and international agreements which regulates fishing.

The government must also ensure an annual publication of an inventory containing the list of vessels that have committed serious offences, vessels which engage in IUU fishing and illegal fishing vessels considered to be on the blacklist of other countries or vessels which are excluded from carrying out fishing activities in other countries and a list of skippers of countries that have committed IUU offences.

**Port State control measures**

The government must ensure that regulations are made to address port measures relating to the following (a) designated ports; (b) designated port inspectors; (c) establishment of procedures for port inspections; (d) standard requirements to be satisfied by fishing vessels before they are allowed access to port; (e) authorization of cooperation and exchange of information including inspection results with other States and regional fisheries management organization; and (f) establishment of a system of appeal against decision of which arise out of inspection.
Export control measures (through improvement of traceability systems and implementation of catch certification schemes)

The government should implement a catch certification scheme; this scheme will help prevent international trading in IUU fish and fisheries product. In addition, there should be an access control (through registration and licensing of artisanal canoes, and introduction of IMO numbers as prerequisite for the issuance of license and authorization for industrial trawlers).

Registration and Licensing of fishing vessels

The government must ensure the registration of all national and artisanal fishing vessels and also all industrial fishing vessels in accordance with the NPOA-IUU and all registered artisanal and industrial vessels must be issued with a license or authorization to carry out fishing activities. Vessels who carry out fishing activities without this license will be sanctioned. The government must also set up a register or a web base of all licensed and authorized artisanal and industrial vessel. This register must be updated periodically.

Fisheries and Oceanographic Research

The government should set up and maintain a research unit which will be tasked with the collection of requisite fisheries and oceanographic information and data which will help in the sustainable management of the Nigerian fisheries resources. This data and research findings will be disseminated to operators as well as the various fisheries associations in the country.

Penalties and Fines

Low fines and inadequate penalties are some of the drivers of IUU fishing in Nigeria as was highlighted in chapter 2 of this dissertation and most of the existing penalties against IUU fishing are either inadequate or are not fully enforced. It is recommended
that the Nigerian government establish more severe fines and penalties which will be severe enough to deter IUU fishing in Nigeria.

**Extension of Marine Protected Areas (MPAs)**

The Marine Protected Areas are sections of the ocean, which are restricted by the government from any human activity, this is an effective tool used in conserving the marine ecosystem. These areas are usually mapped out to guard against threats to the ocean, which includes overfishing, marine litter, and IUU fishing, which has caused a decline in the population of fishes. It is recommended that the Nigerian government increase the number of MPAs as well as create an exclusive economic zone for local and artisanal fishers, which will enable the regeneration of the declining fish stock.
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