Fishmeal and Fishoil Producing Factories in the Ungoverned Spaces of West African Coast: Dynamics, Issues and Instigators

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Abstract

A considerable global demand for Fishmeal and Fish oil (FmFo), as an ingredient in livestock and aquaculture feeds, cosmetics and pharmaceutical production, has led to rapid development of FmFo producing factories owned by foreigners from Europe and Asia along the ungoverned shoreline spaces of Africa. There are uncountable vessels most especially in Morocco, Mauritania, Gambia and Senegal marine domains using illegal methods ranging from fish poisoning and dynamite fishing to catch prime fishes and mechanically mash into fishmeal and Fish oil that will be exported abroad for animal consumption and other uses thereby creating food and job insecurity and other dire implications for Africa and her population. The objective of the study is to explicate, situate and contextualize the factors enabling the unhindered exploitation of African fisheries by foreigners. The study also explored the dynamics and trajectories involved in the illegitimate enterprise. The study adopted content analysis of secondary data. Data were sourced from online Journals, Food and Agricultural Organization (FAO)'s Annual Reports, and Non-governmental organizations' briefs. The study adopted the Routine Activity theory of crime to substantiate the submissions of discourse in the study. Findings of the study showed that lack of financial, technical and political capability; lack of African states cooperation; dubious concessions are the instigators that midwifed the said phenomenon of the study. Thus, the study recommended that, African states should cooperate more with each other in terms of monitoring and regulating activities in their marine domain.

Keywords: Fishmeal, Fish oil, Instigators, Dynamics, Ungoverned space, West African Coast

Introduction

The establishment of Exclusive Economic Zones (EEZs) in the 20th century enabled coastal states to exercise sovereign rights for the exploitation of fisheries occurring in a wide area of their coastal waters (Morin, 2020). Theoretically, African states were expected to have converted this huge opportunity to graciously utilize the aquatic resources in their EEZs that will bring wealth to their population. Unfortunately, the reverse is the case. Countries from Europe and Asia that are into fishery, are the ones exploiting Africa EEZs' marine resources. Foreign fishing fleets use all manner of ways to catch fishes and grind same mechanically into Fishmeal and fishoil (FmFo). A strong demand for FmFo, as an ingredient in livestock and aquaculture feeds, has led to a rapid development of Fishmeal and fishoil producing factories in African states (FAO,2020). These countries are mostly in Southern, Eastern and Western Africa (FAO, 2020). More than 50 FmFo plants are line up in the West African coast mostly especially in Gambia, Mauritania and Senegal (ADF Report, 2021). A single factory can process 7,500 metric tons of fish a year. Mauritania agreed in 2017 to phase out fishmeal

factories by 2020, but the country's 25 foreign owned factories have tripled production instead (ADF Report, 2021). The US Department of Agriculture estimates that Senegal exports 12,000 metric tons of fishmeal per year. One metric ton of fishmeal requires about 5 metric tons of fresh fish to produce (ADF, Report 2021). The UN reported that 90 percent of Senegal's fisheries already are fully fished or facing collapse (ADF Report, 2021).

In contemporary times, fish bones, offal and fish left overs are no more used in producing FmFo as was the case in the past. Rather, entire fishes like round sardinella, flat sardinella and bonga (family of Pelagics) are grilled into FmFo (Standing, 2019). Predominantly, fishmeal is used in feeding animals and farmed fish while that of fish oil is used in pharmaceutical companies and cosmetic industries in Europe and Asia, mostly especially in Turkey and China (Standing, 2019). FmFo processing factories in West Africa especially in Mauritania, Gambia and Senegal are owned and controlled by Chinese companies. Foreign owned FmFo processing factories use destructive and illegal methods to exploit the sub region's fisheries and grind same into FmFo. The primary objective of this study is to examine the causes of illicit Fishmeal and fish oil Producing Factories' operations and as well examine the evolving issues concerning the illegitimate methods of operation.

Conceptual Clarification

Fishmeal

Miles and Chapman (2006) in their seminal article gave a comprehensive description of what fishmeal is. According to the scholars, fishmeal is a generic term for a nutrient-rich feed ingredient used primarily in diets for domestic animals, sometimes used as a high-quality organic fertilizer. Fishmeal can be made from almost any type of seafood but is generally manufactured from wild-caught, small marine fish that contain a high percentage of bones and oil, and usually deemed not suitable for direct human consumption. These fishes are considered 'industrial' since most of them are caught for the sole purpose of fishmeal and fish oil production. A small percentage of fishmeal is rendered from the by-catch of other fisheries, and by-products or trimmings created during processing (eg fish filleting and cannery operations) of various seafood products destined for direct human consumption. The fishmeal and fish oil industries are one of the few major animal industries existing today that still relies greatly on a "hunting-and-gathering" technique. Most fish rendered into meal and oil are captured at sea. Millions of tons of fishmeal are produced worldwide.

Fishoil

Fishoil is the fat that is extracted from fish tissue. It usually comes from oily fish, such as herring, tuna, anchovies, and mackerel. Around 30% of fishoil is made up of omega – 3s, while the remaining 70% is made up of other fats (Ruairi, 2018). Fishoil usually contain some vitamin A and D. Fishoil is used for production of drugs and cosmetics.

Ungoverned Spaces

Ungoverned Spaces are areas that lack the full presence or representation of the central government. The lack of the government might be as a result of the following;

i. lack of political will
ii. state incapacity to provide security
iii. the area is under contestion
iv. the area is ill-governed.

Such areas are threats to humans because they are being occupied and used for criminality by criminals. Uche (2021) stated that 'ungoverned spaces are zones that lay beyond the reach of government and thus pose a significant threat to security and stability'. They are often perceived as fertile grounds within which terrorist organizations incubate and thrive, drug trafficking and criminal networks exist as well as the presence of illegal migrants (Uche, 2021). Containing such spaces falls within the strategic frontier of security priorities.

Theoretical Analysis

The study is anchored on the Routine Activity Theory of Crime (RATC). The names of Lawrence Cohen and Marcus Felson are mostly associated with this theory (Musa, 2019). RATC by definition is an approach to crime which explains crime as a product of the combined result of three essential elements; namely (a) potential offenders or persons who are motivated to commit crimes, (b) suitable targets that is, the presence of things that are of some economic value and which can be easily transported and (c) absence of capable guards or persons who can prevent crime taking place (Musa, 2019). Scholars who adopt the RATC to explain the causes of crime contend that crime takes place or increases when these three critical elements converge in space and time. Wikipedia (2021) further explained the crucial elements: Motivated offender motivated offenders are individuals who are not only capable of committing criminal activity, but are willing to do so. This element that has received the most criticism due to the lack of information regarding what it truly is. A motivated offender can be pointed out as any type of person who has true intent to commit a crime against an individual or property. However, the motivated offender has to be someone who is able to commit the crime, or, in other words, has everything he or she needs to commit a crime, physically, and mentally. Suitable target; a suitable target is any type of individual or property that the motivated offender can damage or threaten in the easiest way possible. If a target is suitable, this means that there is a greater chance that the crime can be committed, rather than, a target that is hard to achieve. The acronym VIVA provides four different attributes of what makes a target actually suitable, in the judgement of the offender. The acronym goes as follows: V: Value (The value of achieving the target, in a real or symbolic manner), I: Inertia (The physical obstacles of the target: weight, height, strength, etc.), V: Visibility (The attribute of exposure which solidifies the suitability of the target), A: Access (The placement of the individual, or object, that increases, or lessens, the potential risk of the intended attack). Absence of Suitable Guardian; Guardianship can be a person or an object that is effective in deterring offense to occur and sometimes crime is stopped by simple presence of guardianship in space and time.

The vast territory of the West African marine region is inadequately policed due to lack of political will and other factors. Therefore, the untapped resources therein, are open to criminals to explore.

Statistics of Factories and their Activities in Mauritania, Gambia and Senegal

Table 1: Number and operational status of West African fishmeal and fish oil factories in March 2019

OPERATIONAL	STATUS	NUMBER OF FACTORIES
MAURITANIA	**TOTAL**	**39**
	Active	33
	Temporarily inactive	6
SENEGAL	**TOTAL**	**8**
	Active	4
	Under construction	2
	Temporarily inactive	2
THE GAMBIA	**TOTAL**	**3**
	Active	3

Source: Greenpeace, 2019

Mauritania

The FMFO industry in Mauritania has grown rapidly over the last decade in an inadequately controlled and regulated manner. The number of FMFO factories grew from 1 in 2005, to 6 in 2011, and 11 in 2012. (Kinadjian & Naffa, 2015 cited in Greenpeace, 2019). By 2015, there were 29 factories with a theoretical processing capacity of about 1 million tonnes and 11 more factories had been authorised but were still to be built (Greenpeace, 2019). In March 2019, Greenpeace documented 39 factories, with 33 active at the time. The processing of small pelagic fish into FMFO has grown considerably over the last few years. In 2015, it was estimated that more than 300,000 tonnes per year of small pelagics (mainly round sardinella, flat sardinella and bonga) were used in the fishmeal industry. In 2017, it was estimated that nearly 550,000 tonnes of small pelagics were harvested to supply FMFO processing plants. (Greenpeace, 2019) In order to start addressing the problem of the expansion of FMFO using whole fish that are fit for human consumption, on 15 February 2016, Mauritania adopted a circular imposing a limit of 10,000 tonnes per year per factory of whole round sardinella that could be used for fishmeal and oil (Greenpeace, 2019).

According to official data from the Mauritanian Government, the total catch of all pelagic species in 2017 amounted to 780,662 tonnes. Exports of fishmeal and fish oil that year totaled 128,870 and 39,600 tonnes respectively.86 For 2018, data from the Mauritanian Ministry of Fisheries were available so far up to November, with fishmeal and fish oil exported during that period amounting to 112,103 and 34,094 tonnes respectively (Greenpeace, 2019) data extracted from the International Trade Centre (ITC)'s Trade Map, based on the UN Comtrade database and Eurostat show that in 2017 Mauritania exported 119,745 tonnes of fishmeal and 34,482 tonnes of fish oil. The figures available for 2018 are 127,940 and 40,430 tonnes respectively. This means exports have almost doubled since 2014, when 66,783 tonnes of fishmeal and 19,752 tonnes of fish oil were exported.

Tables 2 and 3 show trade of fishmeal and fish oil from Mauritania between 2014 and 2018, including data for the 4 top importers by volume. The main destinations for fishmeal produced in Mauritania in the last five years have been China, the EU, Turkey and Vietnam, which together absorbed over 90% of Mauritanian exports in 2018. Within the European Union

(EU), Greece (11,973 tonnes), Spain (7,904 tonnes) and Germany (7,849 tonnes), accounted for 95% of the 29,196 tonnes imported by EU Member States in 2018.

Table 2: Top 4 importers of fishmeal from Mauritania 2014 - 2018 (tonnes)

	2014	2015	2016	2017	2018
World	**66,783**	**66,346**	**74,516**	**119,745**	**127,940**
China	0	244	11,467	49,638	53,066
The EU	38,319	12,418	23,683	10,966	29,196
Turkey	4,265	4,323	12,433	20,429	20,381
Vietnam	4,757	16,802	8,830	22,333	14,800

Source: ITC Trade Map / UN Comtrade (Cited in Greenpeace, 2019)

For fish oil, the EU accounts for over half of Mauritania's exports, with France alone (14,790 tonnes) responsible for 62% of the EU imports and more than one third of Mauritania's total fish oil exports. Norway is the second largest importer, followed by Turkey. Other major importers include Denmark, Greece, Spain and Belgium.

Table 3: Top 4 importers of fish oil from Mauritania 2014 - 2018 (tonnes)

	2014	2015	2016	2017	2018
World	**19,752**	**29,825**	**19,993**	**34,482**	**40,430**
The EU	15,535	24,314	17,144	17,585	23,371
Norway	2,018	1,902	605	4,196	8,414
Turkey	983	1,057	496	9,440	4,292
Japan	0	0	38	106	1,580

Source: ITC Trade Map / UN Comtrade (Cited in Greenpeace, 2019)

Senegal

There are currently four operational FMFO factories in Senegal and two more under construction while 2 are inactive. (See Table 1). Given the importance of the fisheries sector in Senegal, that development is of particular concern. According to official figures, (Ocean Action Hub, 2017 Cited in Greenpeace, 2019) fisheries provide more than 600,000 jobs, however, the number of people directly or indirectly deriving some income from fisheries could be as high as 825,000. (Harper & Samaila, 2019) Artisanal fishing represents about 80% of landings in Senegal and per capita fish consumption is 29.9kg annually (providing 70% of animal proteins), with small pelagic fish a main component.

Gambia

There are currently three operational FMFO factories in the Gambia (See Table 1), with environmental and socio-economic impacts causing concerns and leading to protests by local communities as these factories divert essential fish products from traditional trade, processing and related activities, thus endangering livelihoods and food security (Guardian, 2019). The pollution created by FMFO factories has also led to local protests (Greenpeace, 2019). The Gambian population is highly dependent on fisheries resources. According to the World Bank, the livelihoods of an estimated 200,000 people are critically dependent on fish and fisheries

related activities (World Bank, 2018). Tables 4-5 show trade of FMFO from Senegal and The Gambia in the last few years, including volume data for top importers.

Table 4: Top 4 importers of fishmeal from Senegal 2013 - 2017 (tonnes)

	2014	2015	2016	2017	2018
World	**12,927**	**14,315**	**17,288**	**9,974**	**8,839**
Cameroon	6,424	5,492	4,339	1,856	1,884
The EU	546	1,199	2,094	1,959	1,836
Japan	826	1,801	1,979	1,618	1,606
Togo	2,431	1,206	2,313	1,162	1,307

Source: ITC Trade Map / UN Comtrade (Cited in Greenpeace, 2019)

Table 5: Top 4 importers of fish oil from Senegal 2013 - 2017 (tonnes)

	2014	2015	2016	2017	2018
World	**249**	**649**	**2,473**	**2,551**	**2,604**
France	20	0	0	1,652	1,055
Italy	0	0	384	0	660
Spain	9	227	268	378	541
Denmark	220	220	1,173	299	314

Source: ITC Trade Map / UN Comtrade (Cited in Greenpeace, 2019)

Table 6: Importers of fishmeal from The Gambia 2014 - 2018 (tonnes)

	2014	2015	2016	2017	2018
World	**0**	**0**	**0**	**1,555**	**1,969**
Tunisia	0	0	0	211	1,008
Latvia	0	0	0	0	588
Vietnam	0	0	0	1,344	373

Source: ITC Trade Map / UN Comtrade (Cited in Greenpeace, 2019)

Table 7: Importers of fish oil from The Gambia 2014 - 2018 (tonnes)

	2014	2015	2016	2017	2018
World	**0**	**0**	**870**	**1,378**	**823**
Tunisia	0	0	101	270	423
Panama	0	0	0	0	400
China	0	0	0	546	0
Denmark	0	0	729	0	0

Source: ITC Trade Map / UN Comtrade (Cited in Greenpeace, 2019)

Morocco

Until 2017, Morocco was the largest producer and exporter of fishmeal and fish oil in the region. In 2018, it dropped to second, as Mauritania's production and export soared, doubling from 2014 to 2018 (Greenpeace, 2019). Turkey was by far the largest importer of fishmeal from Morocco in the period 2014-2018, importing 60,323 tonnes in 2018, followed by the EU (27,011 tonnes) and China (16,263 tonnes) (Greenpeace, 2019). Peru was the main importer of fish oil from Morocco in 2018 (18,843 tonnes), followed by the EU with 6,618 tonnes, of

which France alone imported 5,863 tonnes. The number of FMFO factories under Moroccan administration has remained relatively stable in recent years. From 2017 to 2012 there were 25 factories. In 2015, there were 22 factories authorised for FMFO production (Greenpeace, 2019).

Mode of Operation

International actors of FmFo factories use the following illegal methods of fishing:
Bottom trawling: Bottom trawling is a method that uses a large net that scrapes against the sea floor to collect large groups of fish and various aquatic plants and animals. Bottom trawling is unselective of the fishes and plants it catches. The use of the heavy and large nets in this method is harmful in several ways, such as (a) bottom trawling which stirs up sediment that may be poisonous, at times creating muddy water that gives aquatic species a difficult time surviving. (b) aquatic species that are edible and non-edible that makes the ecosystem what it is to aquatic creatures might be considerably damaged, consequently making the habitat uncomfortable. **Dynamite or Blast Fishing:** This is done easily and cheaply with dynamite or home-made-explosives. Fish and other marine species are killed by the shock from the blast. Killed fishes by the explosion are collected from the surface of water and beneath it. Explosions indiscriminately destroy the marine ecosystem and the physical environment. **Bycatch:** Bycatch means accidentally catching numerous types of aquatic life in the process of targeting a particular specie to catch. Bycatch could lead to catching the wrong size of fish and inedible creatures or species that are almost in extinction. Some vessels have the requisite technology to instantly mash their catches into FmFo on sea while some actors have the factories onshore.

Impacts of FmFo processing factories activities in West Africa

Elimination of source of Protein

Food from the sea is uniquely poised to contribute to food security because fish is a highly efficient form of protein; 150 grams of fish provide 50 to 60 percent of an adult's daily protein requirement (FAO, 2018). Fish is also a unique source of essential nutrients, including Omega- 3 fatty acids, iodine, vitamin D, and calcium. Fish consumption by expectant mothers aids their children's neurodevelopment and these proteins and nutrients remain particularly crucial in the first two years of a child's life (FAO, 2018). Sustainable and well managed aquatic resources could provide steady protein for uncountable generations to come. As it is now, the activities of FmFo processing industries has a grave implication on the sustenance and availability of fish protein to West Africans. Fish protein in FmFo is made available in significant amount to animals and inland farmed fishes to the detriment of humans that needs it most.

Food Insecurity

The role of fish on food security can never be undermined. The contribution of fish to food security is very significant. Fisheries and the general aquaculture provide food for uncomfortable number of people in West Africa. The Production of FmFo diverts a valuable and essential source of food and livelihood towards an inefficient use of resources. The Fishery Committee for the Eastern Central Atlantic (CECAF) notes that the main proportion of Sardinella caught in the sub region is now being processed into fishmeal and exported to Asia. This has a strong effect on food in the region (CECAF, 2018). Almost one in three Gambians are vulnerable to food insecurity (FAO, 2018 cited in Greenpeace Report, 2020).

The artisan fishing sector, poor families and the vulnerable depends on fish especially on the small pelagics as a source of food, because it is relatively cheaper than meat. The conversion of pelagics to FmFo is jeopardizing availability of food. Despite the abundance of fish in African waters, Africans are said to be among the lowest per capita fish consumers globally because of the deliberate scarcity of fish caused by FmFo (Ebiotubo, 2021).

Overfishing Repercussions

Overfishing is the phenomenon when more fish are caught than the population can replace through natural reproduction; it occurs due to illegal, unreported and unregulated fishing. In West Africa specifically, this diminishment is attributed to an increased presence of foreign commercial fishing vessels, and an increased foreign demand for fish-based products such as oil and farm feed. Economically, their presence costs Western African economies $2.3 billion a year and is a detriment to private and national income (Ebiotubo, 2021). Fishing in this region contributes significantly to the macro-economic improvement of the nations and the microeconomic level as it creates a diversity of jobs and generates income for local economies. But the stability that fishing creates for the nations and peoples of West Africa is threatened by the presence of large, foreign fleets and the depletion of fishing stocks. The decreased amount of fish exacerbates the poverty in this region and forces the local fishermen to resort to unsustainable tactics to meet their economic needs.

Loss of Jobs

Africa is remarkably known as the epicenter for illegal unreported and unregulated (IUU) fishing. It is estimated that the region loses about 1.3 billion dollars annually to IUU fishing with Senegal alone losing 300 million dollars annually (Daniels *et al*, 2016). IUU fishing feeds the multiple FmFo factories across the African shore lines. It is suggested that eliminating IUU fishing could bring 300,000 new jobs to the region (Kaysser & Adal, 2020). FmFo factories create job insecurity for the locals in diverse ways. For instance, FmFo processing factories compete with traditional resource users for access to raw materials leading to decreased availability of fish in the markets and declining employment in artisanal processing, mainly of women (Greenpeace Report, 2020). Unemployment resulting from the activities of the FmFo will only make the locals to engage in crimes to survive. Excessive fishing and processing of fisheries into FmFo which are to be transported abroad for consumption cut off large amount of fishes available for job chain security. For instance, the FmFo factories in Mauritania attracted high investments that was estimated at 200 million US dollar in 2015, could only provide a relatively low added value and few unskilled and seasonal jobs (Greenpeace Report, 2020).

Damage to environment and public health

Fishmeal production factories release toxic waste into the sea. On the other hand, thick smoke from factories pollutes the air and is a danger to public health. The smoke causes many much such as allergy, asthma, and respiratory disorders, especially in children and people with chronic diseases. In Mauritania, an impressive number of sick people, living close by to the fishmeal plants, has been reported – these people are suffering from allergies, gastric problems, mouth burns and oesophagitis. In Senegal, the press recently reported the discomfort caused to the local population by a fishmeal factory, near Mbour, which eventually exploded, causing fatal casualties (Greenpeace, 2020).

Threats of Extinction

Environmentally, in marine waters from Mauritania to Angola, 37 species of bony fish are threatened with extinction and 14 species are near-threatened, all of which are imperative and staple sources of food. In conjunction with lower numbers due to the slowed natural re-population of a species, the slowed rebound reduces the gene-pool and reduces the ability to adapt to the effects of climate change. Furthermore, the increased presence of boats searching for a fewer amount of fish has turned both local and foreign boats to more destructive, habitat-decimating techniques like dynamite, bottom trawling, beach seining and increased capture of endangered marine life. The turn towards unsustainable and environmentally hazardous practices allow for temporary economic relief, but will ultimately result in the destruction of an imperative industry, food, and job security and the environment (Ebiotubo, 2021).

Drivers of the establishment of FmFo in West Africa

Lack of Capability

The constant depletion of fish stocks the world over, made many wealthy states to increase their marine policing often by stepping up port inspection, imposing steep fines for violations, and using satellites to spot illicit activity at sea. They also have required industrial boats to carry mandatory observers and to install monitoring devices onboard. The reverse is the case in West Africa, as they lack the requisite capability - finance, technical skills, and political will to exert its authority off shore. Due to the foregoing, West African waters and its shore lines are easily accessible and used for nefarious activities.

Corruption

Morin (2020) identified forms of corruption that undermine the market for fishing rights. These forms of corruption could also explain the cause of the unnecessary establishment of FmFo factories in West African shores. The forms of corruption are;

- corruption of law enforcement officials in the field who solicit bribes not to carry out an inspection or to fail to detect an offence during an inspection;
- corruption in procedures for the prosecution of offences, which also involves bribes;
- the great opacity that often surrounds the issuance of fishing authorisations outside bilateral agreements: information on licenses issued is often considered confidential to the extent that even other government departments of the same coastal State find it difficult to obtain them. This can go as far as the issuance of licenses in excess through the bribing of officials

Lack of African States Cooperation

African coastal states have so far not established any real coordination among themselves for the management of their fisheries resources, even though many stocks are shared among several states. A few intergovernmental organisations exist but the resulting cooperation is rather embryonic. There is certainly the exception of tuna and associated species which are managed, on the Atlantic coast, by ICCAT, the International Commission for the Conservation of Atlantic Tunas, and, for the Indian Ocean, by IOTC, the Indian Ocean Tuna Commission, but the role of African coastal States in these two regional fishery management organizations is weak compared to that of the EU and the East Asian states whose vessels are the main exploiters of tuna, whether in the EEZ or on the high seas (Morin, 2020).

Dubious Concessions

Many wealthy nations that are into fishery, grant loans and developmental aids to Third World Countries with stringent conditionalities that create master-servant relationships. China is known for this. Take for instance, Golden Lead is one outpost of an ambitious Chinese economic and geo-political initiative that is meant to build goodwill abroad, boost economic cooperation, and provide otherwise inaccessible development opportunities to poorer nations. As part of the initiative, China has become the largest foreign financier of infrastructure development in Africa, cornering the market on most of the continent's road, pipeline, power plants and port projects. In 2017, China cancelled $14m (£10m) in the Gambian debt and invested $33m (£23.8m) to develop agriculture and fisheries, including Golden Lead and two other fish-processing plants along the 50-mile (80km) Gambian coast. The residents of Gunjur in the Gambia were told that Golden Lead would bring jobs, a fish market, and a newly paved, three-mile road through the heart of town. Golden Lead and the other factories were rapidly built to meet an exploding global demand for fishmeal. Golden Lead was a tool in the hands of the Chinese to exploit the region.

Conclusion

The study finds out that there are numerous foreign manufacturing companies along the African coast line, that are converting fishes caught or bought from artisans into FmFo that is to be exported abroad for pharmaceutical usage and cosmetics production, as well as for feeding livestock and farmed fishes inland at the expense of direct human consumption. It is also the findings of the study that the actors behind the FmFo processing factories gained unprecedented access to exploit Africa's aquatic resources through dubious concessions, as well, the lack of security personnel due to the overall lack of political will of governments in the region to regulate and monitor activities offshore gives access to criminality to strive.

Recommendations

Based on the findings of the study, the following recommendations are made;

i. The international community should scale up aid and technical support for African countries. The World Bank, African Development Bank and FAO should cooperate in supporting the development of capacity to draw on global satellite and terrestrial tracking systems.
ii. Governments in the region should form a formidable intergovernmental organization that will control activities offshore.
iii. African states should also invest in offshore in order not to create a vacuum for foreign invaders.
iv. Issues concerning the use of the sea such as license awards, policies and monitoring, should be made open to the public. African governments and their trading partners should disclose in full the terms of fisheries agreements, including information on quotas and prices as well as any agreed licence and charter.

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