Archives of Business Research – Vol. 10, No. 3
Publication Date: March 25, 2022
DOI:10.14738/abr.103.11962.
Ofosu-Boateng, N. R. (2022). Ghana's Oil find and the Threat of Maritime Piracy in the Shipping Corridor of the Gulf of Guinea. Archives of Business Research, 10(03). 106-121.

Ghana's Oil find and the Threat of Maritime Piracy in the Shipping Corridor of the Gulf of Guinea

Nana Raymond Ofosu-Boateng
Regional Maritime University, Accra, Ghana

ABSTRACT

The Gulf of Guinea (GoG) has now carved a name for itself as a piracy hotspot now surpassing the Gulf of Aden in pirate attacks. This sea corridor remains a life line to many of the littoral and land locked states in that region. Oil is an important commodity and the sea lines of communications cannot be overemphasized. Ghana joined the main players of oil production when oil was discovered its Jubilee Oil Field. Being an offshore venture, the oil is stored in the floating production storage and offloading (FPSO) vessel and later offloaded on sea tanker vessels for export. The FPSO is visible as a stationary vessel a couple of nautical miles from the shore and therefore makes it vulnerable to piracy attacks. This paper highlights the modus operandi of these pirate groups notable among them are the Movement for the Emancipation of the Niger Delta (MEND) and also in 2016 the emergence of the Niger Delta Avengers. A PESTLE and SWOT analysis of the situation is looked at while some of the drivers mitigating the ascendency of piracy in this region is mentioned. There is the need for the regional and international security agencies to coordinate their efforts and intensify their efforts in policing the GoG. As a means of Best Management Practice (BMP), vessels are advised to ensure adherence to these practices and fortify themselves with modern communication devices and surveillance equipment to help make early detection of pirate boats as well as having a well-equipped citadel with dedicated communication devices should the need arise to use them.

Keywords: Gulf of Guinea, Floating production storage and offloading, Movement for the Emancipation of the Niger Delta, Niger Delta Avengers, PESTLE, SWOT

INTRODUCTION

The Gulf of Guinea (GoG) extends over some 6000 km which encompasses coastline and 20 states along the coast, with some being islands and others landlocked forming the West and Central part of Africa. The Niger Delta consists of a vast stretch of oilfield and the accompanying sea forms a geopolitical and economic confluence facilitating the convenient transportation of goods [1]. The West African countries bordering the Gulf of Guinea include: Ghana, Togo, Benin, Nigeria, Cote D'Ivoire, Liberia, Sierra Leone, Guinea, Guinea-Bissau, The Gambia and Senegal. Also, the Central African countries bordering the Gulf of Guinea include: Cameroon, Equatorial Guinea, Gabon, Sao Tome and Principe, Democratic Republic of Congo, Republic of Congo and Angola [2]. It is the largest zone where Africa Oil resources are located and consequently, the main region where crude oil is produced and traded. Without mentioning the Persian Gulf, worldwide, for every four oil barrels, one of it originates from the Gulf of Guinea [3]. The Gulf of Guinea's tremendous potential is creating investment opportunities in the region. There is great interest investment-wise in its forests and natural gas. Nevertheless, the Gulf of Guinea

has cope with varied challenges, both exogenous and endogenous, for benefit from its riches can be achieved [4]. Data obtained from the International Maritime Bureau (IMB) the GoG accounts for almost 43% of piracy incidents in the first quarter of 2021. On March 11th 2021, 15 sailors being crew on the chemical tanker flying the Maltese flag, were kidnapped in Benin waters some 212nm south of Cotonou. In another incident, a fishing vessel hijacked on 8 February 2021 was used by pirates as a mother vessel to facilitate other attacks elsewhere along the Gulf of Guinea. Again, in February 2021, Mozart, a Liberian-flagged vessel, had been on its way from Lagos to Cape Town when it became the target of a pirate attack that resulted in the death of one Azerbaijani seafarer and the kidnapping of 15 Turkish crew members [5].

Africa had proven oil reserves of 117.481 billion barrels at the end of 2007 or 9.49% of the world's reserves. Six countries – Nigeria, Libya, Algeria, Angola, Sudan and Egypt- together hold 95% of total oil reserves in the continent. For nearly 30 years, oil has been the principal resource of the Gulf of Guinea region. In monetary value, it represents over 7% of national exports out of the main producing countries in the area, i.e., Nigeria, Angola, Gabon and Congo-Brazzaville, and over one-third of their GDP [6].

Oil production in the Gulf of Guinea dates back to the 1970s in the coast of Nigeria, Angola and the Republic of Congo. Nigerian remains the largest producer and exporter in this domain.

Since the last decade of the 20th century, other nations have joined in the oil production, such as Cameroon and Gabon. With the advances to deep water prospecting techniques, even more nations became oil producers including Equatorial Guinea, Chad and Ghana [3]. Among the major oil-producing countries in the Gulf of Guinea region are Nigeria, Angola, Equatorial Guinea, Cameroon, Republic of Congo, Gabon and by extension, Chad. Sao Tome and Principe has recently joined the group of countries [7]. The eight oil states in West Africa around the Gulf of Guinea together produce over 5 million barrels of oil a day and may hold as much as a tenth of the world's oil reserves [8]. Presently, there are over 19 oil rigs operating on a monthly basis in the region.

Based on actual and projected production in the region, [4] has identified three important groups in the region. In the first group is Nigeria and Angola, which are the two largest oil-producing countries in the region. The Republic of Congo can also be included in this category of mature producers since its oil production, which resumed its growth path in 2004. Placing the countries into groups, Cammeron and Gabon fall in the second category as matured producers though their oil production is on a steady decline end of the 1990's. Equatorial Guinea, Ghana and Chad can be placed in the third group with Ghana becoming a relevant and important crude oil producer increasing in the Western coast.

LITERATURE REVIEW

Ghana as A New Oil Producing Nation

Discovering oil in Ghana dates back to the start of the 20th century. There were small oil finds and production along the Tano and Keta Basins with the Saltpond Field commencing operations in the 1970's. Things turned around when the Jubilee Oil Field was discovered in 2007 with estimates of 700 million barrels of oil (MMbo) and 800 million cubic feet (Bcf) of gas which catapulted Ghana to significance and placed her in the commercial oil and gas producer category [9].

Production of the first project, the Twenneboa, Enyenra and Ntomme (TEN) fields, with an estimated 240 MMbbl and 396 Bcf of gas started in August 2016. The second project, the Sankofa, Gye and Nyame fields, with an estimated 500 MMbbl and 1.45 trillion cube feet of gas, started production in May 2017 [10]. In November 2019, Springfield Exploration and Production Limited are reported to have made two discoveries totaling over 1.2 Bb of oil in its deep-water West Cape Three Points (WCTP) Block 2. Ghana has benefited from it's first offshore deep-water find which was quite significant producing about 30-35% crude that could be recovered. The two wells sunk were a success and the company being African and Independent made it quite significant an event [11]. The production of crude was to peak from 196,089 barrels daily in the year 2019 to a high of 420,020 barrels daily by 2023. This was asserted by Honorable Ken Ofori-Atta in 2019 as he addresses a delegation of government appointees and another from Oslo, Norway following the discovery of commercial quantities of crude oil in 2019 by the Norwegian company, Aker Energy ASA [12]. Ghana has now emerged as one of the new entrants of oil producing countries in the West African subregion. Compared to the large African petro-states Angola and Nigeria, Ghana remains a smaller producer in the Gulf of Guinea with current output at 126,000 barrels of oil per day. Since the discovery of the Jubilee oil field in 2007, Ghana's industry has seen three offshore projects come on stream [9].

Incidents of Pirate Attacks along the coast of Ghana

A speedboat with eight suspected pirates boarded a Ghanaian fishing vessel *Atlantic Princess,* and kidnapped at least five crew members approximately 65nm (120km/75 miles) south of Tema, in May 19,2021. The crew members abducted included one Korean, one Russian and three Chinese nationals. No ransom demand or casualties were immediately reported [13]. The vessel reported that five armed men had fired at the ship before boarding and sailing it a further 40 nm to the south. The captain, chief officer, second officer, chief engineer and a bosun were abducted when the pirates departed. The assault on the fishing vessel *Atlantic Princess* is significant in that it marked the first report of kidnapping in the Gulf of Guinea in nine weeks after some quiet in piratical activities in the Gulf of Guinea. Dryad Global analyst have stated today it remains the westernmost attack of kidnapping in the Gulf of Guinea till now [14]. As stated by Dryad Global, the AM Delta a cargo vessel of 1700dwt, was attacked by pirates 44 nautical miles south of Brass in Nigerian waters. The ill-fated ship is operated by Ghana-based Adom Mbroso Water Transport and reports indicate that *Am Delta* was boarded by six or seven pirates who took five Ghanaian seafarers as hostages. Further reports indicate that the pirates damaged the onboard communications and navigation equipment and eventually leaving the vessel adrift with only two crew members aboard [15].

On 8th March 2018, a report was sent to the Maritime Domain Awareness for Trade-Gulf of Guinea (MDAT-GoG) via email about 1700 UTC, regarding a merchant vessel that was approached by three speedboats around Takoradi in Ghana. This information flow was not swift and so resulted in the pirates attacking three vessels and absconding with some booty [16]. Around the same time in March 2018, TV3 News, a television broadcasting station reported that five persons including one Ghanaian, a Greek and three Korean nationals were abducted and held hostage by suspected pirates believed to have come from Nigeria to launch a series of piratical attacks in Ghanaian territorial waters from 27th to 29th of March 2018 [16]. Previously, two attacks raised concerns that Ghana could be turning into a hotspot for piracy and armed robbery at sea. On Friday,26th July 2014, the oil tanker *Hai Soon 6* was reported missing off Ghana's coast. This occurred after the Fair Artemis an oil tanker, was attacked on

14th June, 2014. These pirate attacks show no West African nation is insulated from the piracy menace though Ghana issued assurances of policing the waters. The vessel *Hai Soon 6* was attacked by pirates around 60 nautical miles east of Lago. They succeeded in stealing a portion of the ship cargo but did not harm the crew [17].

Modus Operandi and Armed Groups like MEND

A variety of armed groups in the Gulf of Guinea contribute to the chronic instability of the region disrupting oil production in the region and also a threat to seafarers. Almost 95%. Of these armed groups are Nigerians either operating in their territorial waters or along the Gulf of Guinea. A comprehensive survey conducted in 2007 identified 48 distinct groups comprising more than 25,000 members operating in the Niger Delta alone [18]. These armed groups are usually criminal groups or criminally motivated whereas others are politically motivated militants. There is an evolution of these groups bearing arms. Most were drafted from confraternities who later served as street gangs and thugs used for political gain. The Niger Delta Vigilantes (NDV) represent one of the biggest, violent and infamous groups. They can be found in the Niger Delta area [19]. Coming from the Ijaw ethnic group around the Port Harcourt area, their motive is to seek dominance in the vast reserved area of oil.

Its leader, Ateke Tom, is known for promoting and participating in extreme act of violence against local civilians, as well as other criminal organizations. He has a long history of illegal bunkering for profit and bunkering is one of NDV's principal criminal activities. This group massively operated between 2003-2009 [18].

In 2011, John Togo, the late leader of the Niger Delta Liberation Front (NDLF)- a group that has operated in maritime piracy expressed the reason for the pirate attacks on the oil industry. He said, "The government is not giving us what belongs to us. We are not benefiting from the oil windfall. The oil industries pollute rivers attacking the livelihoods of millions of fishermen. Government must take action quickly and also develop local community infrastructure else we shall continue to attack them" [20]. Another notorious criminal group is the Niger Delta Avengers (NDA) which surfaced in March 2016. They have attacked oil-producing facilities in the delta, causing shutdown of oil terminals and a fall in Nigeria's oil production to its lowest level in twenty years. The Niger Delta Avengers have declared that they need to have their sovereign state and have issued threats to cause economic disruptions [21]. Another active group calling itself the Movement for the Emancipation of the Niger Delta (MEND) have been influenced by the perception that the local government is in bed with the international oil companies who do not seek their interest.

The federal government of Nigeria responded with the establishment of a joint task force of security agencies to counter the insurgency, but to no avail [22].

MEND's core demands have been that:
1. the government release imprisoned militant leaders.
2. the oil companies compensate the inhabitants of the delta for the damage to the environment.
3. the central government grant the people a greater share of the oil profits, and
4. the federal government invest in developing the infrastructure and economy of the region.

Modus Operandi

If any cooperative arrangement is going to be made to tackle piracy in the Gulf of Guinea, it would be essential to know the modus operandi of the pirates. The pirates operating in the GoG have become more sophisticated and have graduated from acts like small armed robberies to full blown hijackings and stealing of oil laden ships [23]. Commonly, two or more small high speed (up to 25 knots) open boats or skiffs are used in the attacks, often approaching from either quarter or the stern.

It is worth noting that it is becoming common to see pirates board a ship using the port quarter. Also, the use of a pirate 'mother ship' carrying supplies facilitates piratical attacks [24].

Hijacking

In the Gulf of Guinea, the most common prey to attackers are ships carrying petroleum. This is one of the more complex models of piracy as it requires thorough cooperation and concerted effort. The pirates direct the crew to take the ship to a designated place. Three different situations arise out of such hijacking:

a) First, they will transfer the cargo to some ship or land-based storage facility [25]. The attackers usually have direct contact with the agents in the black market to whom they sell the cargo.
b) Second, the vessel may not be having cargo and the hijackers capture the crew for ransom.
c) The third is a combination of the first two possibilities. In such a scenario, the vessel is hijacked and the crew is taken hostage on the vessel.

Kidnapping for Ransom (KFR)

In this scenario, the attackers board the vessel with an intent to kidnap the crew. Kidnapping in the Gulf of Guinea differs from that in the Gulf of Aden. In the Gulf of Aden, the crew would be taken hostage with the ship and kept onboard till the time negotiation takes place. However, in the case of piracy in the Gulf of Guinea, the crew is kidnapped for ransom and then taken to land. They are moved from one place to another until the ransom demands are met. The captain, chief engineer and other officers are usually the target and kidnapping of seafarers of foreign nationalities is their favorite technique as that fetches more money [26].

Petty theft and robbery

In this scenario, the pirates' prime target are the cargo and other belongings of the crew. The pirates react very violently with the aid of weapons to intimidate their prey as time is not on their side. Pirates in the Gulf of Guinea involved in Petty theft or robbery usually target vessels at anchor and vessels proceeding at slow speeds. The United Nations Convention on the Law of the Sea (UNCLOS) 1982 defines piracy as an offence committed on the High seas and so delineate such attacks in the territorial waters as armed robbery [25].

Oil Industry Governance or Legislation

According to [27], managing the economic gains from oil production has been a major challenge for many African economies. There is a perception of a very poor governance structure in the oil industry of some of the GoG oil producing countries. Ghana has made an exception by passing in it's parliament the (Petroleum Exploration and Production Law, 1984). following existing regulations for some earlier oil discoveries in the 1970s. All countries should ascribe to

international conventions against piracy and facilitate domestication of UNCLOS 1982 and SUA 1988 provisions to overcome legal obstacles that hinder individual nations in combating piracy. The review of national legislation could mitigate the challenges of inadequate legislation in the Gulf of Guinea countries.

[28] assert that the oil industry governance or legislation is not adequate and comprehensive enough, and that the lingering legal and regulatory uncertainties have been exacerbated by insecurities in the Niger Delta region, plummeting international oil prices and thereby causing a significant slowdown in industry investments and developments over the past years. Just like other West African Countries, Federal government of Nigeria have adopted a strategic approach to the industry's reform process by splitting the Petroleum Industry Bill into four bills namely: The Petroleum Industry Governance Bill, The Fiscal Regime Bill, the Upstream and Midstream Administration Bill and the Petroleum Revenue Bill. [27] have stated that Ghana's governance system is a bit of a hybrid with the involving of the government and the people on one side and the oil company on the other as stated in their constitution. There are the upstream and downstream sectors and these are respectively regulated by the Ghana National Petroleum Corporation (GNPC) and the National Petroleum Authority (NPA). Unfortunately, the oil industry governance or legislation or the laws that regulate both downstream and upstream subsectors are woefully inadequate.

Drivers to the increased spate of Maritime piracy in the Gulf of Guinea

[29] posits that maritime piracy continues to be the most pressing blue crime on the international security agenda. There is an international agreement on tackling piracy which should be from the root causes. According to [30], there is no uniform causes triggering piracy activities to take charge in a certain area. The causes of piracy are intertwined between diversity and complexity and Major Eero Tepp has identified eight significant contributing factors to the Gulf of Guinea piracy. As cited by [2], often times it differs from one location to the other. Weaknesses in law enforcement, weak security and poor political environment, poverty, economic hardship and socio-political instability are common factors for piracy to emerge in a region [31]. Among the above listed drivers to the increased spate of Maritime piracy in the Gulf of Guinea include favourable geography and unemployment and poverty which are the two predominant causes of piracy in the sub region [23].

Favourable geography facilitates and even provides safe havens for pirates. Creeks and swamps create obstacles for easy access and patrolling of the marine police or coast guard in the Guld of Guinea. This emboldens the pirates to easily flee after doing their illegal acts (Ukeje, 2009 as cited by [23]

Failure of poor government policies to provide basic necessities has made unemployed youths ready hands for violent or criminal organizations. For example, in Nigeria, massive economic hardship due to poor governance has forced majority of the youth into maritime piracy since the discovery of oil in the Niger Delta. Mbiah describes paucity of legitimate employment opportunities and general lack of regional economic development as a pull factor that have encouraged coastal inhabitants to partake in crimes like maritime piracy [32].

Role of the Gulf of Guinea Navies to arrest the situation

Many regional countries lack the capacity to take part on the same plane in any cooperative endeavor. The status of most African Navies is an obstacle to effective regional cooperation in the governance of African ocean areas. Many African countries moreover, have prioritized investment in land based forces over maritime units (Bateman & Vogel, 2011 as cited by [23]. To curb the scourge of maritime piracy in the Gulf of Guinea, the various Navies of the Gulf of Guinea need to change their tactics accordingly to suit emerging trends of the modus operandi of the pirates.

There should be rampant joint task force operations or navy patrols among the Gulf of Guinea Navies which when materialized, could lead to international coordination from the world superpowers such as the United States of America and so on. 'Operation Prosperity', joint naval patrol launched by the Beninois and Nigerian Navies in October 2011, and 'Obangame Express', an exercise in 2012 led by US Naval Forces Africa to improve cooperation between naval trainees from Cameroon, Gabon, Ghana, Saõ Tomé and Principé and Spain are examples which demonstrate an acknowledgement of the need for international coordination [33]. It is essential to establish mutual trust and respect between national organizations involved in counter-piracy activities. This is best built through regular information sharing to develop effective counter-piracy strategies. The role of regional information-sharing center like MTISC-GOG should be enhanced as a supportive measure to improve information-sharing [34].

Furthermore, individual countries within the Gulf of Guinea region should establish and come out with more security initiatives such as creating specialized security groups to take surveillance of specific parts of the territorial waters lying in the subregion. This will help lessen the burden on the national navy who have a Herculean task of singly fighting this canker. The recent establishment of Ghana's Marine Police Unit, where training is being supported by the United States, sets a very good precedent. The interior minister of Ghana made a call to marine police unit to foster closeness with the main stream Ghana Navy [33].

PESTLE AND SWOT ANALYSIS OF THE SITUATION IN THE GULF OF GUINEA

Political

A myriad of political issues facilitates the increased spate of maritime piracy along the Gulf of Guinea. Some of these include financial stimulus commitment and pandemic strategic plan especially in this Covid period, corruption, trade and tax policies and political/government instability and bureaucracy. Prior to the emergence of the pandemic, inhabitants of the coastal nations along the Gulf of Guinea were already not happy with the state of governance in their respective countries despite the possession of crude oil as a nation. The emergence of the pandemic rather worsened the case as the political figures have shown less concern over the years. This has culminated in a massive uprise and spring up of piratical activities along the Gulf of Guinea as a way of reprisal.

Economic

Weak economic growth, high inflation and unemployment rates have caused financial hardships and made cost of living high. The discovery of oil and sprung up of many oil companies have displaced many folks who possessed arable agricultural lands and who engaged in farming as a means of livelihood. Prior notice and plan for resettlement is usually not a business for discussion for most of these companies thereby leaving these vulnerable

farmers stranded. If a favorable incentive or compensation is given to these farmers, they will at least use that to find an alternative source of livelihood, but that is far from reality. Consequently, these folks retaliate by engaging in gang robberies and other vices including piracy.

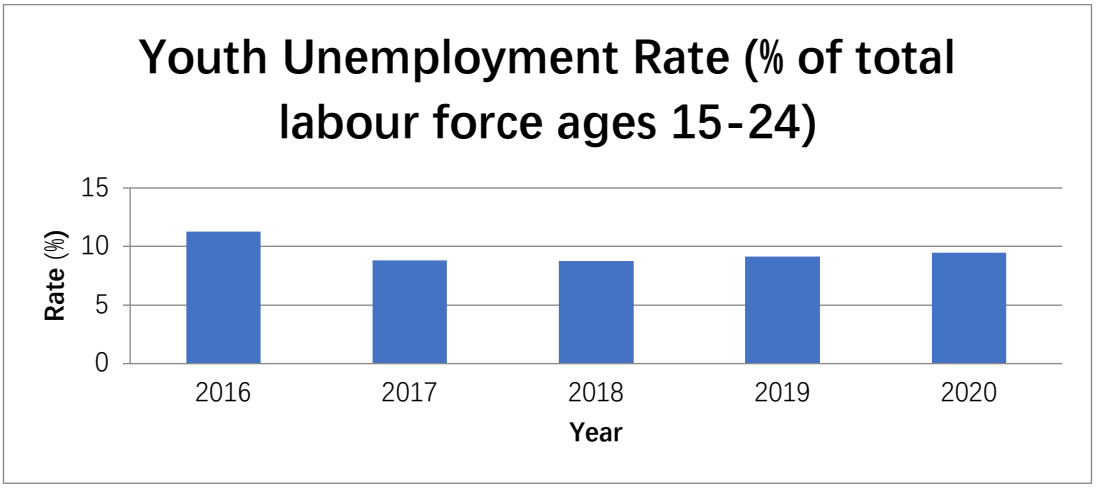


Fig 1
Source: The World Bank (2021)

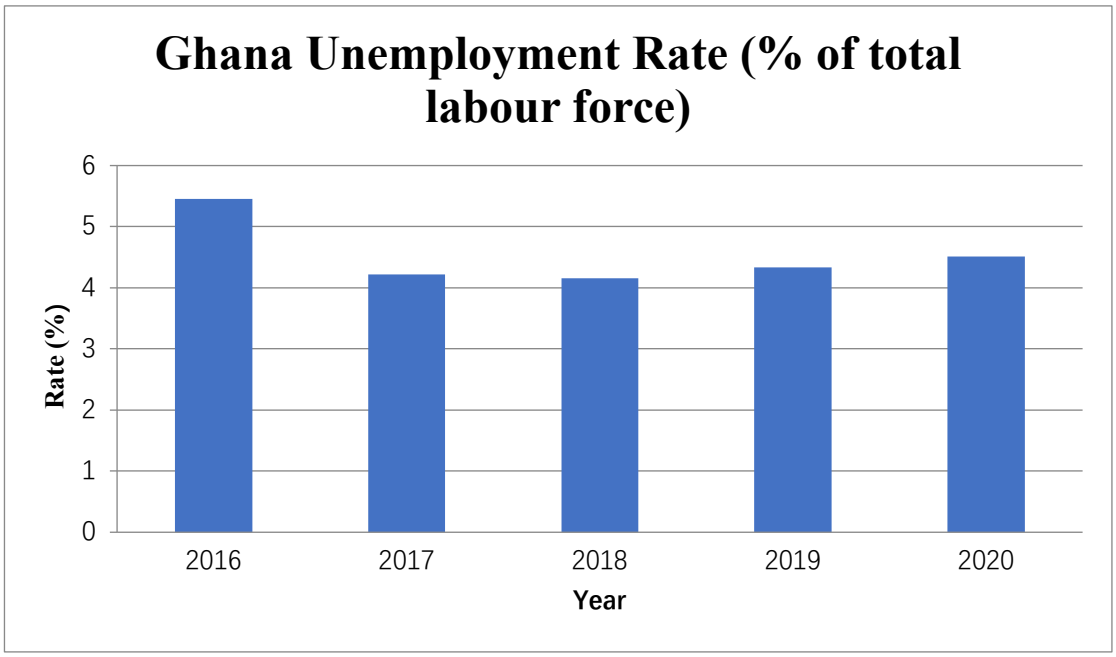


Fig 2
Source: O'Neill, A (2021) – Statista

Social

Social factors such as population growth rate, lifestyle and recent pandemic lifestyle trends have also directly or indirectly contributed to the threat of increased piracy in the Gulf of Guinea. The rise in population has put pressure on social amenities and has created unnecessary competition for resources among the nationals of oil driven economies along the Gulf of Guinea. Nigeria remains the most populated country in the region and is home to

millions of people in the Niger Delta alone. The youth is mostly affected resulting in joblessness and poverty. They then resort to joining armed groups and thugs and will finally find their way onto the high seas to perpetrate illegalities such as piracy and armed robbery which they find lucrative.

Technological

The advent of technology has had a massive impact in the fight against maritime piracy and proves to be a double-edged sword as it favours both the pirates and the security agencies fighting these pirates. Piracy has evolved from the use of light weapons and canoes to the use of advanced sophisticated weapons and speedboats. Most of these pirates are computer literates as they are able to operate and disrupt onboard communication devices. "The Gulf of Guinea pirates have become audacious carrying sophisticated equipment and venturing further out at sea and inflicting terror and violence against innocent crew" said Michael Howlett, director of IMB [5].

As a result of this advancement in technology, maritime piracy appears to be an easy venture since the perpetrators are cocksure the chances of being caught is minimal. This therefore drives the youth into the practice as they figure they can easily make money from thin air.

Legal

There is inadequate oil industry governance or legislation in areas such as health and safety, industry regulations and taxation policies. In addition to this is the weak and ineffective judicial systems in the countries along the Gulf of Guinea such as Ghana and Nigeria. This prevalent weak judicial system s and processes serves as motivation and incentive to the frustrated youth who end up joining these piratical groups. There also appears to be the 'capture and release' system practiced by military patrol teams in the Gulf of Guinea. The leaders of this high-profile piratical groups such as MEND negotiate handsome contracts with the patrol teams for the release of their people in case they get caught. This has become the norm but is not supposed to be so if we really want to eliminate piracy within the Gulf of Guinea. For us to win this fight, there needs to be a paradigm shift in our judicial systems and processes.

Environmental

The predominant environmental factor which contributes to the rise in piratical activities in the Gulf of Guinea is pollution on the part of the oil companies. Most of the inhabitants in the hinterlands of the subregion engage in farming and fishing as a means of livelihood. Hence, the discovery of commercial quantities of petroleum which is a blessing to the country turns out to be a curse to these farmers and fisher folks in these countries. This is because the operations of these oil companies pollute the water bodies and farmlands through oil spillage. As a result, most of these farmers and fisher folks are displaced and not faced with any alternative means of livelihood. Therefore, as a way of retaliation, these men and women enter into armed groups to steal oil commodities and destroy petroleum infrastructure such as pipelines (eg. In the Niger Delta). Most of these piratical groups also think the government has marginalized their communities as a fair share of the oil revenue never gets to them.

SWOT Analysis

If we were to summarize the current situation, by applying the technique of SWOT analysis to piracy in the Gulf of Guinea, the results could be expressed in the following diagram.

Table 1

Strengths	**Weaknesses**	
• Regional military capabilities • Regional political agreement • Possible collective response • International support	• Poor governance • Inadequate port security • Poor industry transparency • Reluctance of some countries to international military presence • Inadequate logistics	
Opportunities	**Threats**	
• Regional cooperation • Joint military patrols • Rapid response force • Information sharing • Capacities to prosecute pirates • International military mission	• Corruption • Environmental degradation • High risk near ports • Increased use of mother ships • High success rate of the pirates • Pirates are computer literates and can navigate a vessel • Pirates extend their areas of operations	

Source: Fernando Ibáñez (2014)

DATA ANALYSIS AND GRAPHS

Table 2 Location of Actual and Attempted attacks, January-December 2016-2020

Location	2016	2017	2018	2019	2020
Angola	2	1	-	-	6
Benin	1	-	5	3	11
Cameroon	-	-	7	6	-
DR Congo	2	-	1	1	-
Sao Tome & Principe	-	1	-	1	-
Equatorial Guinea	-	-	-	2	3
Gabon	-	-	-	1	2
Ghana	3	1	10	3	9
Guinea	3	2	3	2	5
Ivory Coast	1	1	1	1	3
Liberia	-	-	-	2	2
Nigeria	36	33	48	35	35
Senegal	-	1	-	-	-
Sierra Leone	-	4	-	1	-
Republic of Congo	6	1	6	3	3
Togo	1	-	1	3	3

Source: ICC-IMB (2021)

URL: http://dx.doi.org/10.14738/abr.103.11962

From the above table, it is worth noting that pirate attacks were most prevalent in 2018 and 2020 with 82 actual and attempted attacks respectively. In 2018 and 2020, Ghana ranked 2nd after Nigeria with a total of 10 attacks and 3rd after Nigeria and Benin with a total of 9 attacks respectively. A cumulative total of the figures from 2016-2020 puts Nigeria on the top spot with a total count of 187 attacks. Ghana ranked 2nd with a total count of 26 attacks followed by Benin with a total of 20 attacks.

Actual and Attempted Attacks by location, January- December 2020

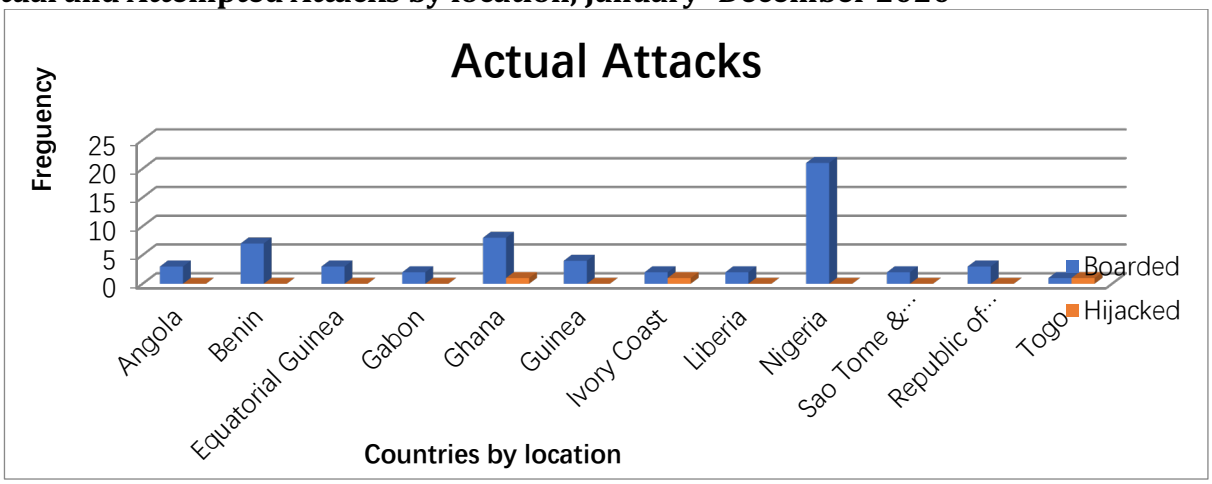


Fig 3
Source: Graphed from ICC-IMB (2021) Report

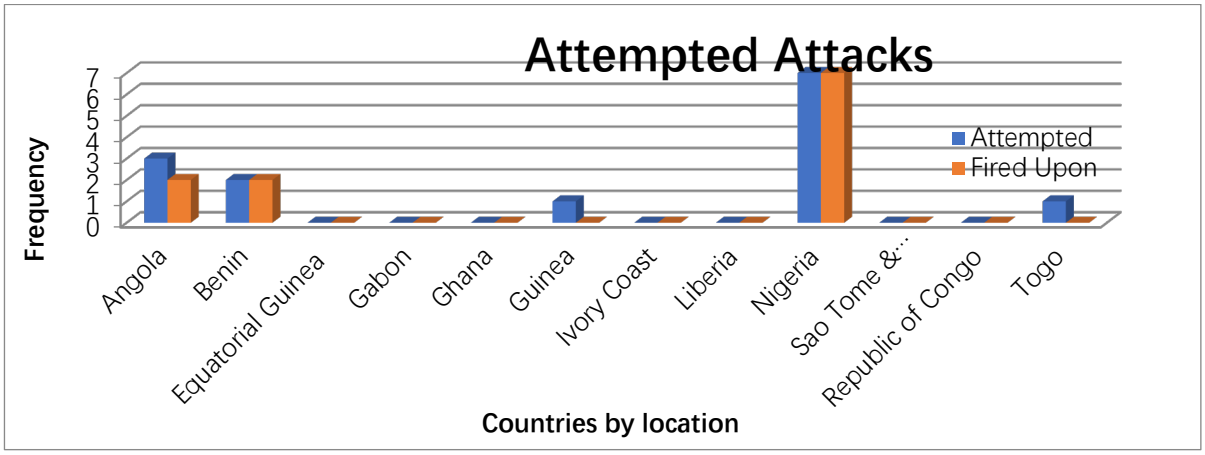


Fig 4
Source: Graphed from ICC-IMB (2021) Report

From the table above, it can be seen that actual attacks of which pirates boarded ships was most predominant. Nigeria ranked 1st with a total of 21 actual attacks of which all were boarded cases and a total of 14 attempted attacks of which 7 each were attempted and fired upon cases respectively. Ghana ranked 2nd with a total of 9 actual attacks of which 8 were boarded and 1 was a hijacked case respectively and with no attempted attacks. Benin was 3rd with a total of 7 actual attacks of which all were boarded cases and a total of 4 attempted attacks of which 2 were both attempted and fired upon cases respectively.

Types of arms used during attacks, January-December 2016-2020

Pirates use different types of arms or weapons ranging from light weapons to sophisticated ones. These include guns, knives and other weapons which they use to intimidate the crew. A comprehensive data of the type of arms used during attacks and their number from 2016-2020 is shown below:

Table 3

Types of Arms	**2016**	**2017**	**2018**	**2019**	**2020**
Guns	48	52	56	47	69
Knives	44	44	36	36	46
Not Stated	96	80	104	74	76
Other Weapons	3	4	5	5	4
Total	**191**	**180**	**201**	**162**	**195**

Source: ICC-IMB (2021)

Comparison of the type of attacks, January-December 2016-2020

Pirates adopt various modus operandi in their attacks. Some of these include hijacking the vessel, firing shots at the vessel and boarding or attempting to board. A comprehensive data of the types or categories of attacks and their frequency from 2016-2020 is shown below**:**

Table 4

Category	**2016**	**2017**	**2018**	**2019**	**2020**
Attempted	22	22	34	17	20
Boarded	150	136	143	130	161
Fired Upon	12	16	18	11	11
Hijack	7	6	6	4	3
Total	**191**	**180**	**201**	**162**	**195**

Source: ICC-IMB (2021)

Types of Violence to crew, January-December 2016-2020

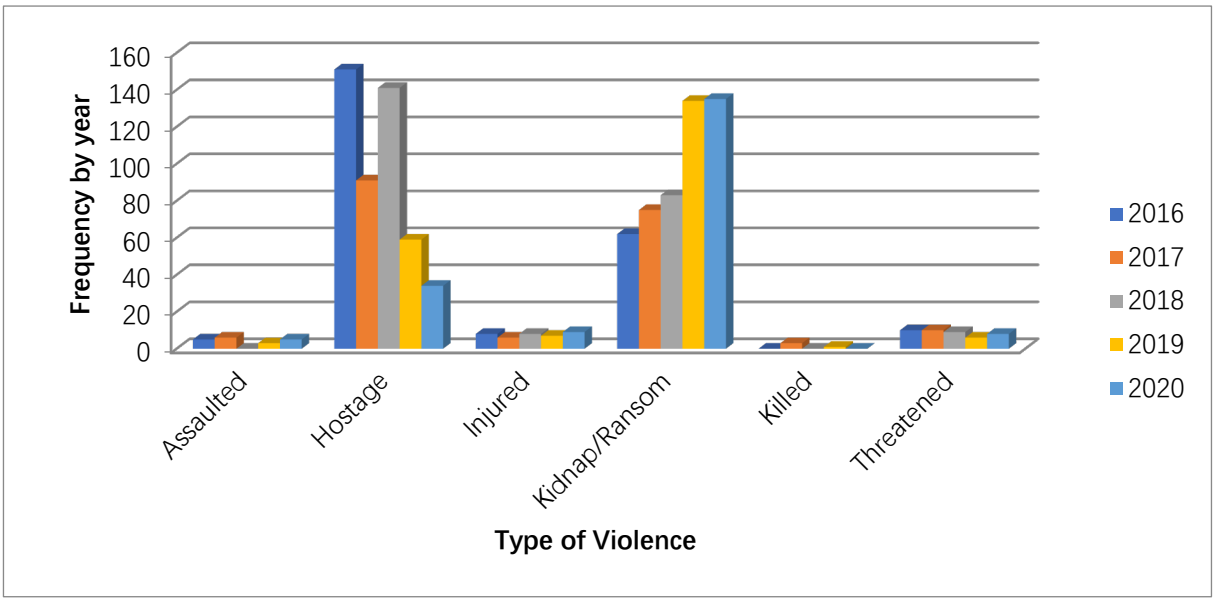


Fig 5
Source: Graphed from ICC-IMB (2021) Report

From the graph above, it can be seen that pirates were most violent in 2016 with a count of violence totaling 236 and least violent in 2017 and 2020 with counts of violence totaling 191 in both years respectively. From the years under review, kidnapping for ransom was the most predominant type of violence with a sum total of 489 cases followed by capturing of crew as hostages with a total of 476 cases. The least type of violence exhibited by pirates in the years under review was killing with a total count of 4 cases.

Types of vessels attacked, January-December 2016-2020

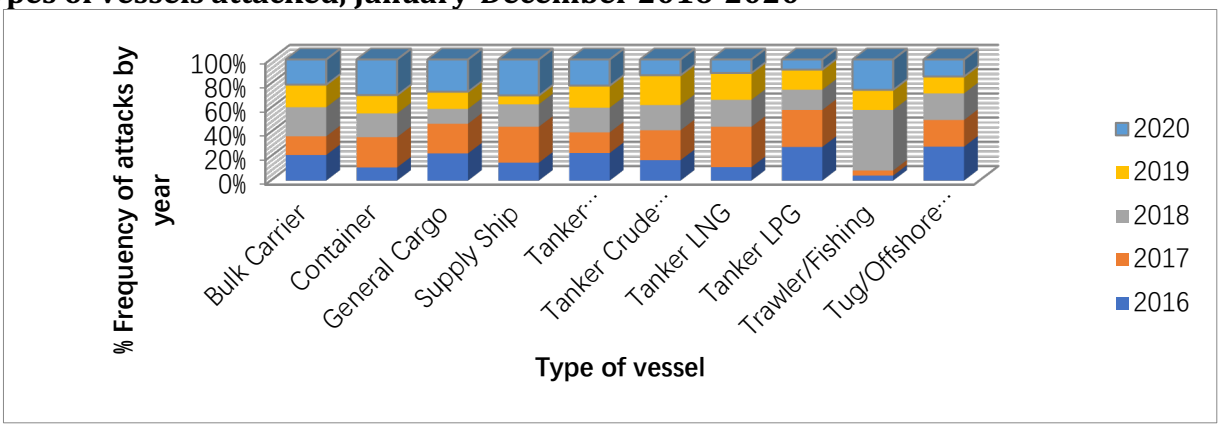


Fig 6
Source: Graphed from ICC-IMB (2021) Report

From the graph above, it can be seen that 2018 recorded the greatest number of attacks on vessels with a total count of 185 cases whereas 2019 recorded the least with a total of 152 attacks. It can be seen that pirate attacks on Chemical/Product tankers and bulk carriers were the most prevalent in the years under review with a total count of 246 attacks respectively. Attacks on container vessels and crude oil tankers placed 2nd and 3rd with 92 and 77 attacks respectively. It can be seen that pirates showed the least interest in LNG tankers having attacked only 9 from 2016-2020.

CONCLUSION AND RECOMMENDATIONS

As Africa continues to attract attention as a region with significant potential for energy and mineral resources, trade, and maritime transport, the incentives for piracy are likely to grow over time, rather than diminish as the scourge of piracy has plagued seafarers in many parts of the seas over the centuries. However, over the past decade, with a dramatic rise in maritime piracy in the Gulf of Guinea with pirates becoming more sophisticated, violent and resilient, the issue has increased considerably in importance and has emerged a humanitarian, economic and security challenge [34].

Decisively combating corruption and fostering good governance in countries of the region are elements to be borne in mind in the elimination of the piracy phenomenon in the Gulf of Guinea. Revenue from oil finds should be used to create more jobs and expand the economy for the benefit of all as that seems to be the rudimentary factor driving the youth in this region to retaliate [35].

Regional and International cooperation should be increased through capacity building. Organizations such as the ECOWAS, NEPAD and AU need to add to the efforts of governments within the region before other international organizations such as the UN could also come into the picture.

Regional and international security agencies should be augmented and empowered with the needed logistics to face the problem squarely. In addition to this, ships should adhere strictly to best management practices to deter piracy and they should have their own citadel equipped with modern security devices and technology to detect pirates in due course before they draw nigh [36].

We obtained normalized DCG values for the 10 queries for our algorithm as well as for Google results. It can be seen that our algorithm acquires higher values of normalized DCG for 3 queries out of 10 queries when compared to Google.

References

Pichon, E., & Pietsch, M. (2020). 'Piracy in the Gulf of Guinea'. European Parliamentary Research Service, 1-4.

Fiorelli, M. (2014). 'Piracy in Africa: The Case of the Gulf of Guinea'. KAIPTC Occasional Paper, 37, 1-16.

Gonzalez, Y.S. (2016). 'The Gulf of Guinea: The Future African Persian Gulf?'. Brazilian Journal of African Studies, 1 (2448-3915), 85-105.

Mane, D.O. (2005). 'Emergence of the Gulf of Guinea in the Global Economy: Prospects and Challenges'. IMF Working Paper, 05 (235), 1-22.

White, M. (2021). 'Piracy in the Gulf of Guinea poses serious trade threat'. Global Trade Review.

Germain, J., & Armengol, C. (1999). 'GULF OF GUINEA: A DEEP OFFSHORE OPPORTUNITY'. The Journal of Energy and Development, 25 (1), 87-95. Retrieved May 28,2021 from http://www.jstor.org/stable/24808726

Onuoha, F.C. (2010). 'The Geo-strategy of oil in the Gulf of Guinea: Implications for Regional Stability'. Journal of Asian and African Studies, 45 (3), 369-384. doi:10.1177/0021909610364779.

Walle, N.V.D. (2008). 'Oil and Politics in the Gulf of Guinea'. Foreign Affairs.

Mane, D.O. (2005). 'Emergence of the Gulf of Guinea in the Global Economy: Prospects and Challenges'. IMF Working Paper, 05 (235), 1-22.

Skaten, M. (2018). 'Ghana's Oil Industry: Steady growth in a challenging environment'. The Oxford Institute For Energy Studies, WPM 77, 1-19. DOI: https://doi.org/10.26889/9781784671044.

Adjapong, O.E. (2018). 'Oil and Gas Production In Ghana: Blessing or Curse?'. Standford University.

GEOEXPRO. (2019). 'First Independent Hydrocarbon Discovery in Ghana'. 16 (6). https://www.geoexpro.com

Ministry of Finance. (2019). 'Ghana's Oil Production Estimated to go up to 500,000 barrels per day by 2024'.

GARDAWORLD. (2021). 'Ghana: Suspected pirates board fishing vessel, kidnap at least five crew members in Gulf of Guinea May 19'.

The Maritime Executive. (2021). 'New Kidnappings as Efforts Grow to Stop Gulf of Guinea Piracy'.

Asiamah, M.A. (2018). 'Investigating the issue of maritime domain awareness: the case of Ghana'. World Maritime University Dissertations. 610.

Blédé, B. (2014). 'Is Ghana becoming a piracy hot spot?'. INSTITUTE FOR SECURITY STUDIES.

Asuni, J.B. (2009). 'Blood oil in the Niger Delta'. United States Institute of Peace Special Report, 229.

Johnson, S.E.,Baxter, C.,Bartis, J.T.,& Long, D. (2012). 'Promoting International Energy Security'. RAND PROJECT AIRFORCE, 4, 1-48.

Asala, K. (2017). 'The History of Exploitation Behind the Gulf of Guinea Piracy'. Africanews.

BBC News Online. (2016). 'Nigeria arrests Avengers oil militants'. Retrieved 16 May 2016.

Kamal-Deen, A. (2015). 'The Anatomy of Gulf of Guinea Piracy'. Naval War College, 68 (1), 1-26.

Daupreye, F.M. (2012). 'Securing the Gulf: towards an integrated maritime security strategy for the Gulf of Guinea'. World Maritime University Dissertations. 16, 1-72.

UKMTO. (2010). 'Best Management Practices to Deter Piracy off the Coast of Somalia and in the Arabian Sea Area'. (3), 1-69.

Onuoha, F.C. (2012). 'Oil Piracy in the Gulf of Guinea'. Conflict Trends, 2012 (4), 28-35.

Kumar, R. (2019). 'Strengthening seafarers' rights for release and repatriation: piracy in the Gulf of Guinea'. World Maritime University Dissertations, 1211,1-78.

Quartey, P., & Abbey, E. (2020). ' Ghana's Oil Governance Regime: Challenges and Politics'. Oil Wealth and Development in Uganda and Beyond: Prospects, Opportunities and Challenges, 331-350. Doi: 10.2307/j.ctvt9k690.21

Omorogbe, Y., & Oyewunmi, T. (2017). 'OGEL Special Issue on Oil and Gas law and Policy in West Africa'. Oil, Gas & Energy Law (OGEL).

Edwards, S. (2021). 'Recording- What Are The Root Causes of Maritime Piracy? Safe Seas.

Mandanda, D.E., & Ping, G. (2016). 'The Gulf of Guinea Piracy: Impact and Effectiveness of Control Measures'. Journal of Law, Policy and Globalization, 55 (2224-3259), 105-130.

Tepp, E. (2012). The Gulf of Guinea: Military and non-military ways of combating piracy. Baltic Security and Defence, 14(1), 181-214.

Mbiah, K. (2007). 'Unlawful acts in West African Waters'. Coastal zone piracy and other unlawful acts at sea (125-135). Malmo: World Maritime University Publications.

Anyimadu, A. (2013). 'Maritime Security in the Gulf of Guinea: Lessons learned from the Indian Ocean'. CHATHAM HOUSE, 02, 1-18.

Fattah, M.M.A. (2016). 'Piracy in the Gulf of Guinea causes, efforts and solutions'. AASTMT.

UNCTAD, W. (2014). United nations conference on trade and development. Review of Maritime Transport.

Ibáñez, F. (2014). 'Maritime Insecurity in the Gulf of Guinea: lessons learnt from the struggle against Somali piracy'. Journal of the Spanish Institute for Strategic Studies, (4),1-26.

Abubakar, B. (2016). 'Gulf of Guinea Resources, Economy and Development: Yesterday, Today and Tomorrow'.