

REPORT

PIRATES OF THE GULF OF GUINEA: A COST ANALYSIS FOR COASTAL STATES



STABLE SEAS
Rethinking Maritime Security

Pirates of the Gulf of Guinea: A Cost Analysis for Coastal States

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1 INTRODUCTION

Seafarers working in the Gulf of Guinea face unacceptable and unparalleled threats of piracy and robbery at sea. In 2020, 27 of the world's 28 recorded kidnapping at sea incidents occurred in the Gulf of Guinea.¹ The number of seafarers exposed to kidnapping here in 2020 was 623, while only 8 seafarers suffered a similar threat anywhere else.² This is the world's piracy hotspot.

Piracy and robbery at sea are no longer concentrated in the waters near the Niger Delta. As we saw in the Western Indian Ocean a decade ago, the threat has spread outward from the shore and pirates are now operating over a vast region extending hundreds of miles from the coast. Incidents are occurring farther from Nigeria than ever before, as an ever increasing share of attacks is happening outside Nigerian internal or territorial waters, and even beyond Nigeria's exclusive economic zone.³ In fact, 50 of the region's 106 incidents of piracy and armed robbery occurred beyond territorial waters in 2020 (47%). For comparison, in 2020 only three of Southeast Asia's 103 incidents occurred beyond territorial waters (3%).⁴

Southeast Asia and the Gulf of Guinea saw nearly the same number of incidents in 2020, but 623 out of the world's 631 seafarers (99%) affected by kidnapping in 2020 were working in the Gulf of Guinea.

This enduring threat has mobilized responses from both within the region and beyond it. In 2013 West and Central African nations formed a new regional maritime security framework called the Yaoundé Architecture, promoting information-sharing and resource-pooling along the African coast from Cabo Verde in the north to Angola in the south. Governments have initiated large-scale anti-piracy programs, such as the Falcon Eye and Deep Blue projects in Nigeria. Most navies have acquired new vessels and invested in enhanced security measures at ports and anchorages. Foreign governments have provided training and expanded multinational exercises. Intergovernmental organizations like the United Nations Office on Drugs and Crime and the International Maritime Organization have assisted with capacity-building and legislation that ensures alleged pirates can be tried for their crimes. The private sector has contributed new tools for maritime domain awareness, developed best management practices for vessels operating in the Gulf of Guinea, and improved the security of vessels operating in high-risk

Piracy is defined in Article 101 of the United Nations Convention on the Law of the Sea (UNCLOS). We use armed robbery to refer to similar acts occurring in territorial, archipelagic, and internal waters. These terms are not used interchangeably, though we sometimes use “pirates” to refer to criminals committing either crime.

Fig. 1.1: Incidents of Gulf of Guinea Piracy and Armed Robbery, 2011-2020



Source: Stable Seas Database

¹ Joubert, Lydelle. 2021. *State of Maritime Piracy: 2020*. Broomfield, Colorado: Stable Seas, One Earth Future.

² *Ibid.*

³ Munshi, Neil. 2021. "Nigerian Pirates Rampage Across West African Waters." *Financial Times*, 13 March 2021. Available Online: <https://www.ft.com/content/4c085762-2150-43b2-afa6-02ad23795f42>. Accessed 1 November 2021.

⁴ Joubert, 2021.

areas. The trend in 2021 is promising, as rates of piracy have been lower this year than they have been at any point in the last decade.

Still, the Gulf of Guinea has averaged one incident of piracy or armed robbery for every 4.5 days since 2016.⁵ The frequency and violence of these attacks has preoccupied navies that could be addressing other maritime security threats, discouraged foreign investment, weakened state control of coastal and offshore areas, slowed the development of the blue economy, emboldened illicit traders and illegal fishers, and terrorized seafarer communities. This has exacted a financial and human cost to Gulf of Guinea states that, to this point, has been seen as secondary to the costs borne by multinational shipping companies and non-African entities.

PIRACY AND POVERTY

Addressing piracy and armed robbery must continue to be an urgent priority in the Gulf of Guinea because these crimes have far-reaching consequences that contribute to this being one of the world's poorest regions. According to the World Data Lab's World Poverty Clock, this region is now home to 242 million people living below the United Nations' "extreme poverty" threshold of \$1.90 of income per person per day.⁶ Worse yet, while most countries are reducing extreme poverty, the Gulf of Guinea's population in extreme poverty continues to rise. As of 2021, the Gulf of Guinea is now home to more than one in three people living in extreme poverty (34%) and Nigeria (86.8 million) overtook India (84.0 million) as the country with the greatest number of extremely impoverished people. In 2022, India is projected to fall to third place behind another Gulf of Guinea nation: the Democratic Republic of the Congo.

In 2021, Nigeria surpassed India to become the country with the most people living in "extreme poverty" of less than \$1.90 per day.

Piracy and poverty are complex and multidimensional problems that are mutually reinforcing and jointly caused. Endemic poverty could be a factor in driving young people toward maritime crime. These crimes undermine coastal economies. Both problems are symptoms of other factors like corruption, environmental degradation, and income inequality. Understanding how

International Maritime Bureau data for the first half of 2021 show an 80% decline in piracy and armed robbery.⁷

Oceans Beyond Piracy estimated the annual cost of piracy in this area to be as high as \$818 million per year in 2017, but much of that cost was paid by non-African entities and corporations.⁸ This report focuses specifically on costs paid by Gulf of Guinea nations, including the indirect and opportunity costs that have cost the region billions of dollars over the last decade.

Fig. 1.2: Population (in millions) Living in Extreme Poverty



Source: World Poverty Clock (Sep 2021)

⁵ Calculated by the authors from annual *State of Maritime Piracy* reports, available from Stable Seas at www.stableseas.org and One Earth Future at www.oneearthfuture.org.

⁶ World Poverty Clock. 2021. World Data Lab. Available Online: <https://worldpoverty.io/>. Accessed 23 September 2021.

⁷ "IMB: Piracy and Armed Robbery at 27 Year Low in 2021." *The Maritime Executive*, 12 July 2021. Available Online: <https://www.maritime-executive.com/article/imb-piracy-and-armed-robbery-at-27-year-low-in-2021>. Accessed 1 November 2021.

⁸ "The Economic Cost of Piracy Through 2017." *Safety4Sea*, 30 May 2018. Available Online: <https://safety4sea.com/the-economic-cost-of-piracy-through-2017/>. Accessed 1 November 2021.

piracy could drive regional poverty requires close scrutiny of *direct costs*, *indirect costs*, and even the *opportunity costs* traced to these crimes.

KEY DEFINITIONS

Direct Costs: Financial losses that are immediately linked to incidents of piracy and counter-piracy activities, including naval expenses, ransoms paid, and the value of stolen oil and cargo.

Indirect Costs: Financial damages to coastal economies caused by the threat of piracy and by the imposition of counter-piracy measures, rather than specific incidents. These damages include reduced shipping traffic to high risk areas, increased insurance costs, and decreased fishing activity.

Opportunity Costs: The consequences of political will and financial resources being concentrated on piracy, rather than other priorities that might attract more investment were piracy eradicated. Examples include losses from unaddressed illegal fishing or deficient port infrastructure and adverse impacts on commercial shipping.

AREA OF STUDY

This report estimates the costs of piracy to twelve Gulf of Guinea nations, looking specifically at the area of increased risk that stretches from Côte d'Ivoire in the northwest to Angola in the southeast. This is an area that is somewhat larger than the Togo-to-Gabon War Risk Area established by the Joint War Committee in September 2020, yet much smaller than the Voluntary Reporting Area used by the MDAT-GOG reporting center run by France and the United Kingdom. The region of study most closely resembles the Extended Risk Area designated by the International Bargaining Forum in November 2020.

Of course, this is not to say that these are the only costs of piracy to African nations. Because these ports serve land-linked countries from the Sahel to the Great Lakes region, the costs imposed by piracy and armed robbery in the Gulf of Guinea trickle along trade corridors to the heart of the continent. In this way, many states, including land-locked states, have much to gain from strong counter-piracy efforts.

Fig. 1.3: Map of Region of Study



This area has accounted for 95% of the region's incidents of piracy and armed robbery over the last three years and 93% of all Gulf incidents since 2010.⁹

⁹ Calculated by the authors from annual *State of Maritime Piracy* reports, available from Stable Seas at www.stableseas.org.

The quality of data on shipping, government spending, and fishing varies widely, but in most cases we are able to calculate approximate annual costs, as well as total costs over the 2010 to 2021 period. Costs for the last year may have been affected by the COVID19 pandemic.

REPORT OUTLINE

This report proceeds in five sections. Chapter 2 examines the direct costs suffered due to pirate attacks, which take the form of ransom payments and stolen oil and goods. The chapter examines how changing pirate tactics have dramatically altered the direct cost of piracy over the last decade, so that costs that were in excess of \$20 million a decade ago are closer to \$1 million today. While these costs are the most direct, they are also the least substantial. Far more financial resources go into counterpiracy measures and the indirect and opportunity costs driven by these crimes.

Chapter 3 examines the direct costs of regional counter-piracy efforts, which include regional investments in navies, non-navy counter-piracy programming, piracy trials and legal training, vessel acquisitions, and contributions to relevant regional maritime security organizations. These costs focus on what African governments are spending for the explicit purpose of reducing piracy and armed robbery in the area of study. As is often the case, the response costs much more than the threat itself, totalling as much as \$524 million annually for recent years.

The fourth and fifth chapters pivot to economic costs suffered through effects on the shipping and fishing sectors, respectively. Each of these sectors suffers distinct direct, indirect, and opportunity costs that are felt by workers throughout supply chains, as well as consumers through increased prices and market inefficiencies. These chapters were informed by personal interviews with fishers, port workers, and authorities throughout the region, as well as a novel survey of over 120 shipping companies and security officers. Indirect costs like this are certainly less amenable to a specific number, but evidence from interviews, macroeconomic data, port call data, fisheries ecology data, and shipping surveys suggest indirect and opportunity costs of tens of billions of dollars over the last decade.

This report was created in late 2021, when the exchange rates were such that \$1 was equal to 410 Nigerian Naira, 565 Central African Francs, and 0.86 Euro. These exchange rates are used in the report unless otherwise noted.

Contemporaneous exchange rates were used to convert estimates in other currencies to USD when estimates could be traced back to a specific date.

2 RANSOMS AND STOLEN GOODS

The direct monetary costs of piracy and armed robbery are low compared to the much higher costs of counter-piracy operations, increased security measures, and the indirect financial losses and psychological tolls suffered by seafarers, fishers, and others. Direct losses due to ransoms paid for local hostages and the value of goods and oil stolen at sea probably sum to \$1 million to \$1.2 million per year. This number is significantly lower than it was a decade ago when oil theft at sea was more common and a greater share of hostages taken by kidnappers were West and Central Africans.

KEY MESSAGES

- We estimate the direct costs of ransoms paid for African hostages and the value of stolen oil and goods to be \$1 million to \$1.2 million per year, with around \$1 million lost to stolen oil and goods and \$60,000 to \$200,000 lost through ransom payments for hostages from African nations.
- Increased targeting of non-African hostages and a criminal shift away from oil theft from tankers has reduced the costs of these crimes to African nations since the early 2010s.
- Pirate tactics have been sensitive to oil prices. An increase in oil prices could bring a new wave of hijackings for oil theft. However, improved regional counterpiracy efforts will make these attacks very risky for pirate groups.

This estimate is much lower than others have produced because it does not include ransoms paid for non-African hostages or the oil, valued at tens of billions of dollars, that has been stolen over the last decade from oil infrastructure located onshore or in the inland waters of the Niger Delta. However, as later chapters will show, the financial gains of pirates are a very small share of the total cost imposed by pirates on the region.

DIRECT LOSSES FROM RANSOMS PAID

The dominant model of piracy in the Gulf of Guinea has transitioned over the last decade away from cargo and oil theft and toward kidnapping seafarers for ransom. This specific criminal model depends upon the reliable payment of ransoms that are large enough to cover operating costs, offset the personal risks faced by pirates, and exceed the income to be derived from other

The financial earnings made by pirates are the most direct cost of piracy, but they make a small share of the total cost suffered. African nations face greater expenses by suppressing piracy, investing in increased security, and changing fishing patterns and business operations in high-risk areas.

In the early 2010s, oil theft at sea was a more common business model for pirates. At that time, the annual value of stolen goods likely exceeded \$20 million to \$25 million per year.

Fig. 2.1: Ransoms Paid Annually for African and Non-African Hostages



maritime crimes. For these reasons, pirates' expectations of ransom payments are a key driver of piracy and armed robbery in the Gulf of Guinea region.

Ascertaining the costs of ransoms is difficult because none of the parties involved in hostage exchanges have a strong incentive to publicize the size of ransom payments. Those paying ransoms are unlikely to disclose the details of the payment because they fear being targeted again if pirates learn they are willing to pay more than other targets. Some governments, insurers, and shipping companies are unlikely to publicize that they paid a ransom at all, especially if their public statements indicate that they will not negotiate with kidnappers. From a kidnappers' perspective, ambiguity around hostage payments is advantageous in that it may allow them to demand higher and higher ransoms of subsequent victims with no awareness of previous ransom amounts. Finally, negotiators between the two sides depend upon trust and discretion, so they too have no interest in disclosing what a kidnapping can earn the perpetrators.¹⁰

Hostage-takers, negotiators, and even victims of kidnappings have strong incentives to keep ransom payments secret. Our estimate of average ransoms depends on previous research and extensive field research in the region.

Still, some payments are reported by the media, though there is little reason to believe that these amounts are representative of the many payments that are not made public. More reliable estimates have been generated by experienced researchers with direct communications with the victims and perpetrators of kidnappings in the region. Their findings can be used to extrapolate the total ransom paid for hostages from the West and Central African region.

Our estimate of the total direct cost of ransoms paid for Africans relies heavily on a 2021 report sponsored by the United Nations Office on Drugs and Crime, titled *Pirates of the Niger Delta: Between Brown and Blue Waters*.¹¹ This report, which is the work of delta-based experts conducting confidential interviews with pirates and victims, provided invaluable information about the business model now thriving in the Niger Delta. The report concluded that pirate gangs receive perhaps \$4 million per year in ransoms paid for victims of kidnappings at sea. However, they also note a very wide disparity in the amounts offered for hostages of different

We use *kidnapping* to mean attacks in which seafarers are held captive until ransoms are paid.

We use *hijacking for cargo theft* to describe incidents where criminals take control and redirect target vessels so that they can remove stolen oil or goods.



The 2021 UNODC report titled *Pirates of the Niger Delta* provides an invaluable analysis of piracy as a business model.

¹⁰ For more on the economics of kidnapping, see Shortland, Anya. 2019. *Kidnap: Inside the Ransom Business*. London: Oxford University Press.

¹¹ Jacobsen, Katja Lindskov, et al. 2021. *Pirates of the Niger Delta: Between Brown and Blue Waters*. Vienna: United Nations Office on Drugs and Crime. Available Online: https://www.unodc.org/res/piracy/index.html/UNODC_GMCP_Pirates_of_the_Niger_Delta_between_brown_and_blue_waters.pdf. Accessed 1 November 2021.

nationalities. Ransoms for non-African seafarers have climbed sharply in recent years, more than doubling from an average of \$15,000 per non-African hostage in 2014 to as much as \$40,000 per non-African in 2019. Meanwhile, ransoms for West Africans, and Nigerians and Ghanaian fishers and oil workers in particular, have remained steady at perhaps \$3,000 to \$4,000 per person. Others have estimated that ransoms for West African fishers are often as low as \$1,000 to \$2,000 per person.¹²

The majority of hostages were from West Africa just five years ago, but as the ransom premium for foreign hostages has grown to more than 10 times what can be earned from African hostages, the share of hostages from African countries has fallen to perhaps 20% of all hostages taken.

Perhaps because of the growing disparity in ransoms for regional and non-regional hostages, the share of reported hostages with West and Central African nationalities has fallen over the last five years. As recently as 2016, West Africans were the majority of kidnapping victims in the Gulf of Guinea. In 2020, more than three-quarters of the hostages with confirmed nationalities were from outside the region. This means that while total ransom income has generally increased for pirate gangs operating in the Gulf of Guinea, total ransoms paid for West and Central African seafarers is falling and likely sums to around \$60,000 to \$200,000, even if kidnappings of locals are underreported.¹³

These are considerable human and financial costs, particularly to fishers and their families, but these costs are dwarfed by the scale of the problem onshore. In Nigeria, the risk of kidnapping is much higher in interior parts of the country, or even onshore within Nigeria's southern states. In fact, recent research by ACLED indicates the majority of Nigerian kidnapping victims are now taken by communal militias, Boko Haram, or Islamic State West Africa Province (ISWAP) in the country's northern states.¹⁴

The Nigerian intelligence firm SBM estimates that onshore kidnappings cost Nigerians tens of millions of dollars in paid ransoms over the last decade, with the most random and violent acts

In September 2021, four fishermen were captured in Akwa Ibom in the eastern Niger Delta region. The reported ransom paid for the four was roughly N3.5 million (\$8,530), or N875,000 (\$2,132) per person.

In Nigeria, onshore kidnappings for ransom doubled from 2019 and 2020, with most kidnappings occurring in the northern interior.

Fig. 2.2: Fatal Attacks, 2002 - 2020



Source: Stable Seas, ACLED. Blue events involved Boko Haram, orange involved ISWAP, and red involved both.

¹² For example: Anthony, Bassey. "Akwa Ibom Fishermen Protest Abduction by Pirates." *The Nation*, 5 October 2021. Available Online: <https://thenationonlineng.net/akwa-ibom-fishermen-protest-abduction-by-pirates/>. Accessed 1 November 2021.

¹³ This estimate range assumes average African hostages per year at 30 to 50 with average ransom payments of \$2,000 to \$4,000. Multiplication at the extreme lows and highs produces this range, whereas multiplication of both medians offers a best estimate of \$120,000.

¹⁴ Ayandele, Olajumoke and Curtis Goos. 2021. "Mapping Nigeria's Kidnapping Crisis: Players, Targets, and Trends." *ACLED*. 20 May 2021. Available Online: <https://acleddata.com/2021/05/20/mapping-nigerias-kidnapping-crisis-players-targets-and-trends/>. Accessed 1 November 2021.

occurring in the northern interior.¹⁵ Over the 18 months between March 2020 and September 2021, SBM calculates that 1,409 students and 7 teachers were abducted in attacks that earned hostage-takers at least N220 million (\$536,000).¹⁶ Beyond school attacks, the scale of the problem is even graver, with experts and politicians claiming Nigerians paid N2 billion (\$4.9 million) in ransoms in the first half of 2021.¹⁷

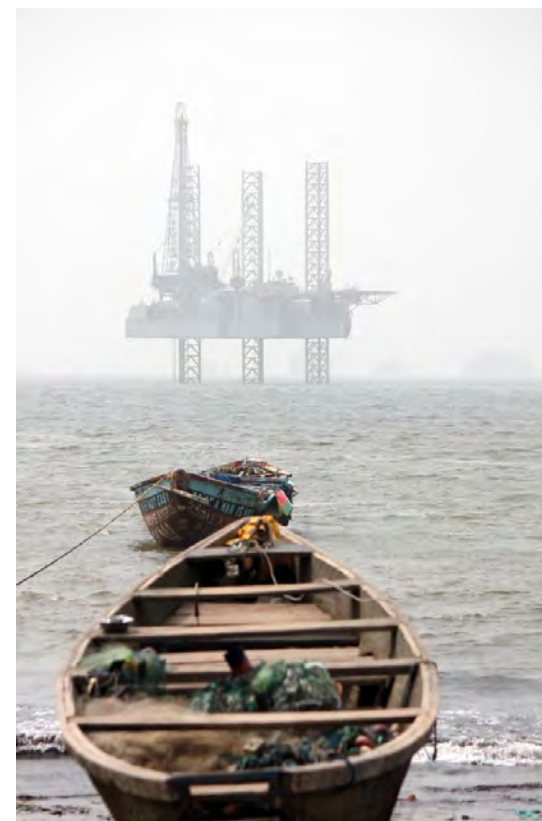
For every \$1 spent on ransoms for locals taken at sea, \$50 or more are extorted from those seeking the return of local victims of kidnapping on land.

If these numbers accurately capture the scale of the problem, the direct ransom costs of offshore kidnappings to the Gulf of Guinea are a very small part of a greater problem. Because kidnappings at sea have shifted toward the abduction of foreign seafarers in the last few years, this ratio of offshore to onshore ransom losses is certainly continuing to fall.

DIRECT LOSSES FROM STOLEN OIL AND GOODS

As recently as 2015, more than 80% of the incidents occurring in the Gulf of Guinea were characterized by Oceans Beyond Piracy as crimes of robbery and hijacking for theft, rather than kidnapping for ransom.¹⁸ When these were the primary aims of attackers, piracy and armed robbery imposed substantial costs on the region, with valuable oil, gasoline, engines, computers, phones, and other electronics taken from ships. However, most public estimates of the direct cost of these kinds of theft have been conflated with other crimes and subsequently exaggerated.

In 2013, Chatham House conducted extensive research in the Niger Delta to better understand the scale of oil theft in the region. Their rigorous research produced an estimate of \$3 billion to \$8 billion per year, and they explicitly noted that this crime happens “onshore or in the Niger Delta’s swampy and shallow waters” (pg. 3).¹⁹ But soon after, this figure was incorporated into a



Offshore oil infrastructure in Limbe, Cameroon.
Image Credit: Carsten ten Brink. 2011. Flickr:
https://www.flickr.com/photos/carsten_tb/7155641857

¹⁵ “The Economics of the Kidnap Industry in Nigeria.” 2020. Lagos: *SBM Intelligence*. Available Online: https://www.sbmintel.com/wp-content/uploads/2020/05/202005_Nigeria-Kidnap.pdf. Accessed 1 November 2021.

¹⁶ “Chart of the Week: School Abductions in Nigeria.” *SBM Intelligence*, 6 September 2021. Available Online: <https://www.sbmintel.com/2021/09/chart-of-the-week-school-abductions-in-nigeria/>. Accessed 1 November 2021.

¹⁷ Arvin, Jariel. 2021. “How kidnap-for-ransom became the ‘most lucrative industry in Nigeria.’” *Vox*, 2 August 2021. Available Online: <https://www.vox.com/22596198/students-nigeria-profit-kidnapping>. Accessed 1 November 2021.

¹⁸ *State of Maritime Piracy: 2015*. 2016. Broomfield, CO: Oceans Beyond Piracy, One Earth Future.

¹⁹ Katsouris, Christina and Aaron Sayne. 2013. *Nigeria’s Criminal Crude: International Options to Combat the Export of Stolen Oil*. London: Chatham House. Available Online: https://www.chathamhouse.org/sites/default/files/public/Research/Africa/0913pr_nigeriaoil.pdf. Accessed 1 November 2021.

growing body of stories on *petro-piracy*, a confusing term that has fueled this conflation of different crimes.²⁰ Some researchers and journalists use this term to refer to oil theft regardless of where it occurs, while others use it to refer to attacks at sea against oil tankers specifically. The result is that the total financial loss of oil theft is often lumped into “maritime crime,” leading to massively inflated estimates of the direct costs of piracy and armed robbery at sea.

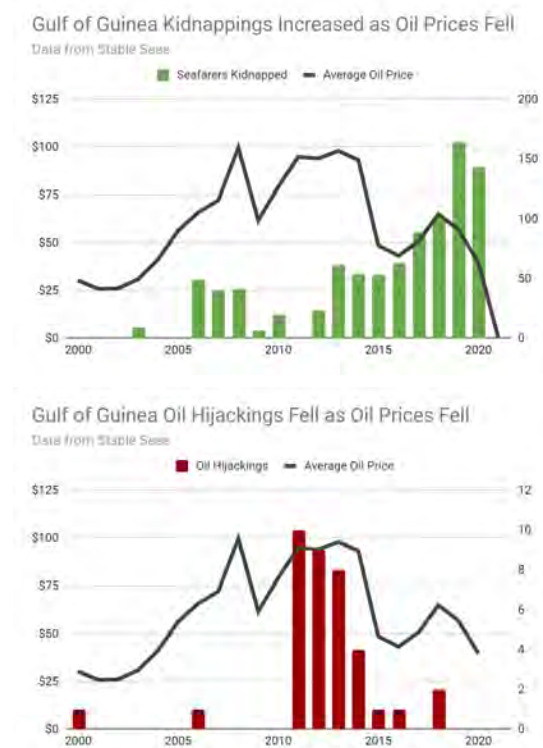
Oil crimes cost Gulf of Guinea nations tens of billions over the last decade, but few oil thefts occur at sea. “Petro-piracy” now occurs almost entirely onshore.

It is true that tankers have been targeted in the waters of the Gulf of Guinea, particularly before the decline in oil prices in the mid-2010s.²¹ It is also true that Nigeria has lost tens of billions of dollars to oil theft and bunkering. However, it is not true that offshore oil tankers have been the primary location for this costly theft, the overwhelming majority of which occurs onshore or in the internal waters of the Niger Delta. The Gulf of Guinea has served as a transit point in the illicit trade taking stolen oil out of Africa, and we have also observed some instances of oil stolen directly from tankers in territorial and international waters, but acts of piracy and armed robbery at sea have not been a significant source of the billions of dollars per year that oil theft has cost Nigeria and, to a lesser extent, its oil-producing neighbors.

Oil reached \$110.62 per barrel once in 2013 before falling to \$36.81 at one point in 2016. This collapse coincides with a sharp drop in hijackings for oil.²²

Oil theft at sea is also a substantially smaller problem than it was in the early 2010s when commonly cited estimates were generated. In 2011 when world oil prices soared, pirates in the Gulf of Guinea began targeting tankers for their oil cargo. It was estimated by the Joint War Committee, composed of underwriters from Lloyd’s and the International Underwriting Association in London, that between \$2 million and \$6 million worth of oil was stolen per pirate attack in the Gulf of Guinea. Not all hijackings fell into this spectrum; in 2014 more than 12,000mt of diesel were stolen from the *MT Kerala* at a cost of \$8 million. On the other side of the spectrum the value of the crude oil stolen in the *MT Mariam* incident was around \$327,000, likely because the process of siphoning was interrupted by authorities.

Fig. 2.3: Oil Prices and Models of Piracy in the Gulf of Guinea, 2000-2020



Sources: Annual average closing price for oil as recorded by Macrotrends LLC (2021). Incidents of kidnapping and hijacking for oil theft as recorded in the Stable Seas database.

²⁰ For a comprehensive discussion of “petro-piracy” as an oil theft problem, see: Murphy, Martin N. 2013. “Petro-Piracy: Oil and Troubled Waters.” Philadelphia: Foreign Policy Research Institute. Available Online: <https://doi.org/10.1016/j.orbis.2013.05.011>. Accessed 1 November 2021.

²¹ *Ibid.* According to Oceans Beyond Piracy, 50% of all attacks were against tankers in 2014. This fell to less than 20% in 2015 and has remained low since then.

²² “Crude Oil Prices - 70-Year Historical Chart.” 2021. Macrotrends LLC. Available Online: <https://www.macrotrends.net/1369/crude-oil-price-history-chart>. Accessed 1 November 2021.

However, these profits have not been maintained in recent years. The price of oil is reduced, authorities are responding to incidents more quickly, and ransoms for crew have become more profitable. Hijackings may fail when security forces approach or intercept the hijacked vessel as in the case of the *MT Maximus* in 2016. Tankers may not have fuel onboard at the time and may develop mechanical problems during the hijacking. The intended pirate tanker vessel that would receive the stolen product may fail to arrive. For all of these reasons, there has been a sharp drop in hijackings for oil theft. This has resulted in a greatly reduced economic cost to West and Central Africa.

Oceans Beyond Piracy created careful calculations of piracy costs annually until 2018, estimating the total cost of all goods stolen in Gulf of Guinea incidents at around \$500,000 per year after 2015.²³ The aforementioned 2021 UNODC report, which relied on extensive delta-based field work and covered thefts beyond and within the delta, also estimated goods stolen in these crimes to sum to \$1 million per year. Taken together, these projects suggest that even when accounting for underreporting and financial losses incurred by foreign oil companies (rather than African governments and companies), it is unlikely that the direct cost to this region now exceeds \$1 million per year.²⁴ This is a very small fraction of the cost of oil theft in the early 2010s, which likely topped \$100 million and was incurred mostly between 2011 and 2014.²⁵

Opportunistic thievery causes financial hardship in Nigeria's artisanal fishing sector. While the financial value of a stolen engine may be \$2,000 or less, this is a sizable share of a fisher's expected annual income and the crime prevents a victim from earning income until the engine can be replaced. Though low in absolute figures, these crimes are major threats to economic security in fishing communities.

²³ Calculated by the authors from annual *State of Maritime Piracy* reports, available from Stable Seas at www.stableseas.org.

²⁴ Jacobsen, Katja Lindskov, et al., 2021.

²⁵ Specific losses are not always reported for each incident, but media reports suggest an average of approximately \$3 million to \$4 million per incident. The Stable Seas database records 34 confirmed incidents of this kind between 2011 and 2018, with 30 of 34 occurring between 2011 and 2014.

3 COUNTER-PIRACY EFFORTS

The largest direct costs of piracy are the major counter-piracy initiatives driven by the region's governments. This chapter estimates these costs with sections on naval expenditures, counterpiracy operations and vessel acquisitions, initiatives occurring in agencies distinct from navies, multilateral institutions, and legal reforms.

When we sum best estimates---drawn from detailed government budgets, interviews with senior officials, news accounts of public arms deals, and global databases on defense expenditures---we calculate total direct costs of approximately \$524 million per year. This does not include expenditures by international organizations, the private sector, or navies from beyond the Gulf of Guinea.

KEY MESSAGES

- Government expenditures on counter-piracy operations have increased exponentially over the last decade, growing to \$272 million per year in naval spending and perhaps \$250 million more in non-naval spending.
- Though Nigeria is making the largest investments, nearly every nation in the region has acquired counter-piracy-suitable craft, including patrol boats and coastal combatants, since 2014.
- Legal training sessions, mock trials, and prosecutions are relatively small budget items, but these expenses are critical for deterring criminals through legal means.
- Regional information-sharing centers organized as part of the Yaoundé Architecture for Maritime Security (YAMS) could make counter-piracy spending more efficient for each nation, but the centers are not fully funded at this point.

REGIONAL DEFENSE EXPENDITURES

Since 2011, the twelve countries between Côte d'Ivoire and Angola have combined to spend an estimated \$82 billion on national defense and this amount has been growing steadily across most of the region. In 2021, defense expenditures in Ghana and Togo were approximately double what they were in 2012, while they increased by 50% in Congo and DR Congo and rose roughly 10-20% in Nigeria and Cameroon. The sharpest decrease in defense spending has occurred in Angola, where total defense spending has fallen by more than 75% over the last five years.²⁶

This estimate of direct government spending on counter-piracy does not capture indirect expenses incurred by the region's governments, such as lost shipping revenue (see Chapter 4).

Fig 3.1: Estimated Regional Spending on Counter-Piracy in 2020, (\$ Millions)

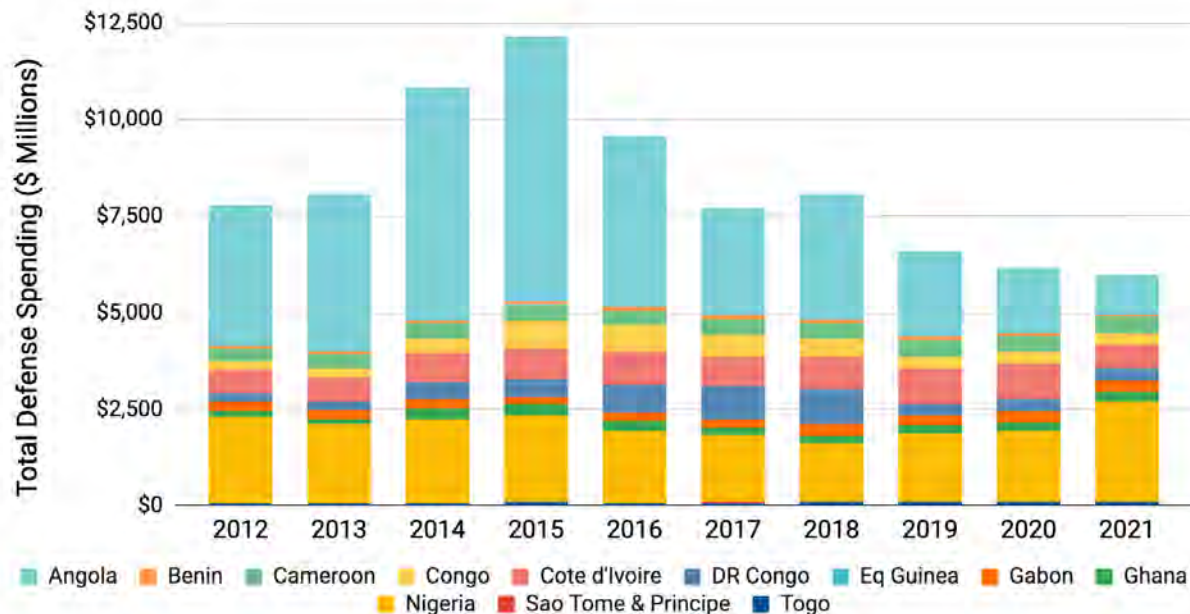


Most nations have increased naval spending and acquired new vessels, but coordination between nations remains hampered by inadequate funding to the Yaoundé Architecture. Greater investments in legal training and pirate prosecutions are needed.

²⁶ See the annual editions of *The Military Balance*, the most recent of which is: "Sub-Saharan Africa." 2021. *The Military Balance: 2021*, 121(9): 436-502.

Because Angola has historically had the largest defense budget in the region, this means total annual defense spending in the region of study has fallen by 50% since 2015.

Fig. 3.2: Total Regional Defense Spending by Year, 2012-2021

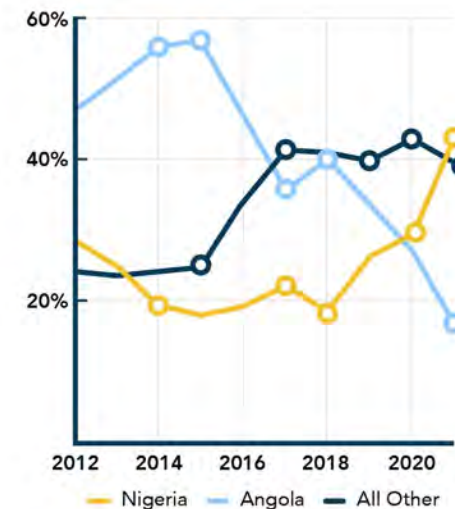


Source: *Military Balance*, 2012-2021.

Many non-maritime priorities have competed for these defense budgets. In West Africa, insurgencies in the Sahel have drawn national attention to the north, away from the volatile waters of the Gulf of Guinea. Fears of groups like Islamic State West Africa Province (ISWAP), Boko Haram, and al-Qaeda in the Islamic Maghreb (AQIM) have pulled resources out of the Gulf of Guinea and toward army and air force missions in the interior. Similarly, interior conflict in Central African countries like Cameroon and Angola have shifted attention away from the sea. In the Democratic Republic of the Congo, the primary security focus is located thousands of

As recently as 2013, regional defense spending was dominated by Angola and Nigeria, which together accounted for 76% of regional spending. Since 2017, greater investment in smaller forces has created a very different regional picture.

Fig. 3.3: The Changing Distribution of Regional Defense Spending



Source: *Military Balance*, 2012-2021.

kilometers from the coast in the eastern interior. In Cameroon, the navy is adding sailors at less than one third of the rate that new soldiers are being recruited into the other military services.²⁷

REGIONAL NAVAL EXPENDITURES

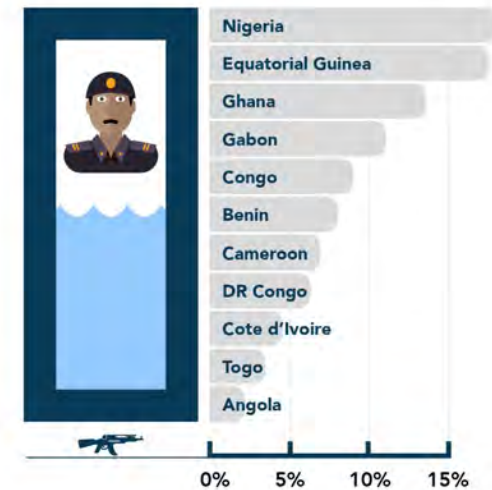
Though Nigeria suffers some of the region's most violent insurgencies in the north, Nigeria is the exception to this general trend of lagging investment in navies. According to *Military Balance*, Nigeria has added naval personnel at a rate that cannot be matched by any other Gulf of Guinea country. Nigeria has more than tripled its military personnel over the last decade. Nigeria's navy and coast guard now account for 18% of all defense personnel. This is the highest rate in the region, and many times higher than the navy personnel share in countries like Angola (1%), Togo (2%), and Côte d'Ivoire (4%).²⁸

Across the region, total military personnel increased 17% to 485,000 between 2012 and 2021. Over the same period, naval personnel nearly doubled from around 21,500 to 39,500.

The sharp fall in Angolan defense spending and the turn toward onshore defense priorities among the region's smaller forces have meant that Nigeria is becoming an even more dominant force in the Gulf of Guinea. In 2012, Nigeria accounted for just over one in three regional sailors. In 2021, nearly two in three regional navy personnel serve in the Nigerian navy.²⁹

Estimating the amount spent specifically on naval services is complicated by the fact that many countries do not describe spending by military service on available open-source documents. However, we can approximate this by using the ratio of naval to non-naval defense personnel. While simple and imperfect, multiplying the total defense budget by the share of defense personnel that belong to the navy results in reasonably accurate approximations of navy spending in countries that provide disaggregated defense budgets. For example, this method results in estimates that are within 3% of the published naval budgets for Nigeria. Using this method, we calculate total naval spending across the twelve studied countries of \$550 million in 2021, with roughly \$382 million (69%) spent by Nigeria alone. Applying this to the entire decade, these twelve states combined for around \$4.5 billion in naval spending since 2011.

Fig. 3.4: Navy Personnel as a Share of Military Personnel in 2021.



Source: *Military Balance*, 2021

Because most countries do not publish budgets specific to military services, we proxy naval spending using the navy personnel ratio.

NAVY PERSONNEL RATIO:

Navy Budget = Defense Budget x (Navy Personnel / Total Defense Personnel)

This method produces an estimate for Nigeria of \$382 million. This total is around 2% off of the published budget figure of \$375 million.

²⁷ Calculation by authors, with data drawn from annual editions of *The Military Balance*.

²⁸ Calculation by authors, with data drawn from annual editions of *The Military Balance*.

²⁹ Calculation by authors, with data drawn from annual editions of *The Military Balance*.

Fig. 3.5: Naval Spending Estimates (\$ Millions) Using Navy Personnel Ratios

Country	Total Active Duty	Additional Reserves or Paramilitary	Navy/CG Personnel	Total Defense Budget in USD (\$m)	Estimated Navy/CG Budget (\$m)
Angola	107,000	10,000	1,000	949.76	8.88
Benin	7,250	4,800	500	57.76	3.98
Cameroon	25,400	9,000	1,500	420.11	24.81
Congo	10,000	2,000	800	312.39	24.99
DR Congo	134,250	0	6,700	321.46	16.04
Cote d'Ivoire	27,400	0	1,000	629.96	22.99
EQ Guinea	1,450	0	250	7.00	1.21
Gabon	4,700	2,000	500	280.07	29.79
Nigeria	143,000	80,000	25,000	2,184.47	381.90
Ghana	15,500	0	2,000	250.00	32.26
Togo	8,550	750	200	120.22	2.81
Regional Sum					549.67

Source: *Military Balance 2021*. Calculated from 2020 budgets in local currencies. Data not available for São Tomé and Príncipe. Extrapolated 2020 budget estimate for Equatorial Guinea.



Source: UNODC.

NAVAL OPERATIONS and ACQUISITIONS

Navies are multi-mission services that do not allocate all of their resources toward counter-piracy operations. In fact, counter-piracy is a lower priority than marine safety, security, and other constabulary operations in much of the Gulf of Guinea. We approximated the share of naval attention going to counter-piracy with interviews with regional military leaders as well as calculations derived from open-source information on naval operations and vessel acquisitions.

Previous research by Oceans Beyond Piracy calculated the costs of a single vessel being deployed on counter-piracy operations to be approximately \$65,000 per day, with a low-end

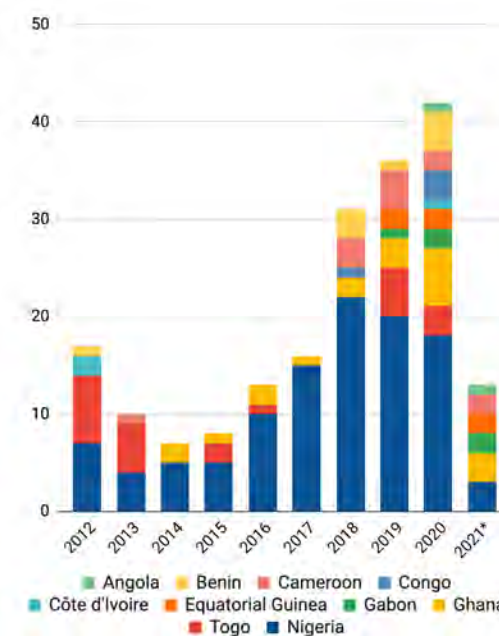
estimate of six to twelve regional vessels deployed in the Gulf of Guinea at any given time. This calculation provided an estimated total direct cost to the region for counter-piracy patrols of up to \$285 million per year in the mid-2010s.³⁰ The last five years have seen increased investment in these operations and many vessel acquisitions across the region, so the annual costs today are likely to be near this high estimate, if not higher.

As naval capabilities are enhanced, African navies can respond to an increasing share of ongoing incidents. In 2020, ten of the twelve countries in the area of study responded to at least one incident. African responses were six times more common in 2020 than in 2014.

As African navies' Cold War-era assets age, they are being replaced with patrol boats better suited to their needs. Today, patrol boats are the fastest growing segment in naval shipbuilding. Several navies in the region procured offshore patrol vessels in recent years as new threats in African waters, such as piracy and armed robbery and transnational maritime crime, created unforeseen challenges. Others remain under-equipped for the effective patrolling of their own territorial waters and have no capacity to go beyond their territorial waters. This often results in changing piracy patterns in the region as pirate operations are unintentionally pushed to the waters of nations lacking capacity. This concern aligns with what has been witnessed in the region over the last several years; a decreasing share of attacks are happening in Nigerian waters as delta-based pirate groups are going farther offshore to find their targets.

According to Nigerian Naval Spokesperson Commodore Suleman Dahun, the Nigerian Navy commissioned several vessels recently, making significant progress in the recapitalisation of its fleet. According to him, the Nigerian Navy has acquired a total of 378 platforms over the last six years alone, including 172 patrol boats, 114 RHIBs, two Seaward Defence Boats, twelve Manta class boats, three Whaler boats, three tugs and two barges, 22 fast attack boats, 14 UAVs, four helicopters, 14 River Town class boats, twelve house boats and four capital ships.³¹ Several of these acquisitions are aimed to deal with the rising numbers of pirate attacks in the Gulf of Guinea over recent years, as well as oil theft and other maritime crimes. Nigeria also developed its own shipbuilding and refit capacity and in 2012 the 33m coastal patrol boat NNS Andoni was the first product of the Nigerian Naval Dockyard.³² Annual Nigerian budgets indicate that the

Fig. 3.6: African Naval Responses to Gulf of Guinea Piracy Incidents



Source: IMO GISIS and Stable Seas. No responses were reported for DR Congo and São Tomé and Príncipe. Partial data for 2021, which also saw fewer opportunities to respond due to far fewer incidents.

³⁰ Calculated by the authors from annual *State of Maritime Piracy* reports.

³¹ Mkpoikana Udoma, "Nigerian Navy Acquires Vessels, Helicopters to Tackle Oil Theft", Sweet Crude Reports, April 12, 2021, <https://sweetcrudereports.com/nigerian-navy-acquires-vessels-helicopters-to-oil-theft/>. Accessed 1 November 2021.

³² "Nigerian Navy." *Jane's World Navies*, December 1, 2020. Accessed 1 November 2021.

region's largest navy has averaged \$56.7 million per year on platform and asset procurement, with vessel procurement (\$37 million per year) and sea boat fuel (\$4 million per year) forming the two largest spending categories.³³

Fig. 3.7: Vessel Acquisitions by African Navies since 2012

Angola	Nigeria		Cameroon
4 Super Dvora Mk III patrol craft	8 K-38 Fast attack craft	106 Epenal	3 Boston Whaler patrol boats
1 Cessna Citation jet	1 Seaward Defence Boat	90 8.2m Speedboats	6 Aresa 750 Commandos RIBs
2 Patrol boats	7 FPB 72 MkII patrol craft	3 15m Wave Raider	2 24 m Aresa 2400 CPV Defender patrol boats
3 HSI 32 high speed inceptor	1 Shaldag Mk II	6 5m Arrow-class	1 23 m Aresa 2300 landing craft
3 DV-15 interceptors	1 FPB 98 MkII patrol craft	4 RHIBs	5 Patrol boats
1 Vigilante-1400 long range offshore patrol vessel	4 Sentinel Patrol Craft	4 FPB 110 MkII patrol craft	
1 Macae class short range patrol vessel	5 K-47 boats	1 P-18N OPV	Cote d'Ivoire
	1 P-18N OPV	50 NP-650 Flat bottom boats	3 Composite-hulled RPB 33 patrol boats
Togo	1 Hamilton class cutter	1 Hydro Survey Ship	30 RHIB
4 Composite-hulled RPB 33 patrol boats	1 65m OPV	1 P-18N OPV	Ghana
3 8 m Defender rigid hulled inflatable boats	1 47m patrol craft	1 Seaward Defence Boat	2 Type 143A Gepard fast attack craft
1 Predator Patrol craft	1 Landing Ship Tank	4 C-Falcon Interceptors	4 985Y patrol boats
2 OPV-45s			6 OPV
Benin	Sao Tome and Principe	Gabon	Equatorial Guinea
3 Coastal Patrol Boats	1 GC002 patrol launch	1 OPV50	1 OPV-88 Reklama
1 Metal Shark boat			1 Frigate
1 SAFE 12-metre-long 38 Full Cabin patrol boat			

Sources: Jane's, Stable Seas Database

Nigeria has also commissioned the Israeli-designed Falcon Eye maritime domain awareness system manufactured by United Arab Emirates (UAE)-based Falcon Technologies. Falcon Eye will monitor the country's territorial waters, extending to the exclusive economic zone from the four Falcon Eye Centers in Abuja, Lagos, Yenagoa, and Calabar. Falcon Eye is a comprehensive surveillance system that uses several sensors such as radars, electro-optic systems, and cameras. The system will share information with relevant stakeholders, including the Nigerian Maritime Administration and Safety Agency (NIMASA), Nigerian Ports Authority, and the Marine Police.³⁴ The total cost of the program, which is spread over a decade and may overlap with Nigerian Navy and NIMASA budgets, has been identified at \$459 million.³⁵



Source: Ghana Maritime Authority

“[Falcon Eye] will enable the Nigerian Navy to generate a comprehensive intelligence picture of activities within our maritime environment for further analysis before, in appropriate cases, dispatching a Nigerian Navy Ship for interdiction, investigation, and/or subsequent arrest of erring vessels...It will also enable the Nigerian Navy to effectively combat any maritime crimes that could disrupt the conduct of maritime trade.”

- Vice President Yemi Osinbajo, Nigeria

³³ Budget Office of the Federation, Federal Republic of Nigeria, Budget Documents 2012 to 2021. Available Online: <https://www.budgetoffice.gov.ng/index.php/resources/internal-resources/budget-documents> Accessed 1 November 2021.

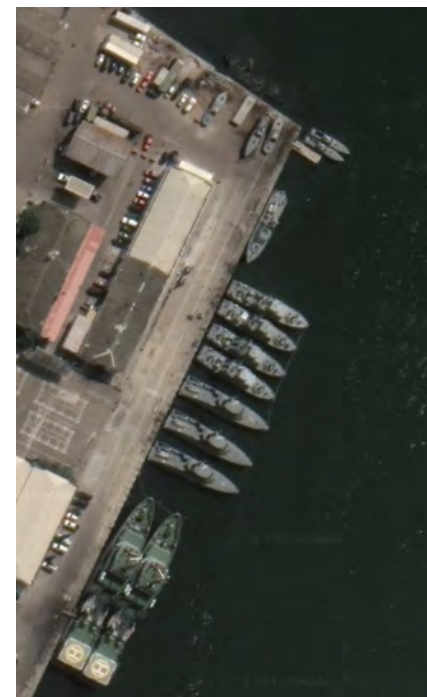
³⁴ Guy Martin, “Nigeria Commissions Falcon Eye Maritime Domain Awareness System.” *Defence Web*. 14 July 2021. <https://www.defencweb.co.za/featured/nigeria-commissions-falcon-eye-maritime-domain-awareness-system/>. Accessed 1 November 2021.

³⁵ Majeed, Bakare. “Reps Panel Summons Arms Audit Committee cChairman over \$459 million Navy Surveillance Project.” *Premium Times*, 16 June 2021. Available Online: <https://www.premiumtimesng.com/news/headlines/468031-reps-panel-summons-arms-audit-committee-chairman-over-459million-navy-surveillance-project.html> Accessed 1 November 2021.

Other Gulf of Guinea countries have also invested in new vessels and platforms. Though Angola's defense budget has decreased recently, Angola has been expanding its navy since 2015. The country placed a €7.3 million (\$6.6 million) patrol boat order from Italy in 2016 which included two patrol boats, radar, and six helicopters.³⁶ In September 2016, the UAE-based Privinvest announced the establishment of a shipyard in Angola. Privinvest has shipyards in several countries including Constructions Mecaniques de Normandie (CMN) in France. The €495 million (\$606 million) deal for the shipyard also included 3 HSI 32 patrol craft, long range offshore patrol vessels and short-range patrol vessels. In 2016 Angola also signed contracts with Italy's Finmeccanica and SELEX ES for NMSS coastal radars and repeater systems³⁷ to the cost of €90 million (\$99.6 million).³⁸

Ghana started supplementing its patrol fleet in 2010, procuring several new and second-hand vessels. Several vessels were also docked and refitted. The navy purchased two decommissioned Type 143A Gepard fast attack craft from Germany that were refurbished, transferred, and renamed as *GNS Yaa Asantewaa* and *GNS Naa Gbewaa* in 2012 at a cost of \$37.9 million.³⁹ The navy completed their acquisitions when they acquired the last two OPVs at a cost of \$150 million each, at a total cost of \$300 million.⁴⁰ The Navy moved into new naval headquarters in 2016 in Accra. The control centre for the country's Vessel Traffic Management and Information System (VTMIS) intended to identify potential pirate activity is based here.⁴¹ The establishment, equipping and operation of three maritime domain awareness (MDA) centres came at a cost of \$10 million. Fast patrol boats for patrolling of two anchorages were also acquired at a cost of \$6 million, with an additional operational cost of the boats of \$5 million. The navy surveillance infrastructure dedicated to port infrastructure cost \$4 million. The navy's operational cost also increased due to an increased presence at sea (\$50 million).⁴²

These examples illustrate the increased investment in counter-piracy-capable vessels across the region. Other countries acquiring multiple patrol boats, fast patrol boats, and primary coastal combatants in the mid-2010s include Benin, Cameroon, Republic of the Congo, Gabon,



Newly acquired vessels in Luanda, Angola.
Source: Google Earth, Maxar (June 2021, 8.4710 S, 13.1405 E).

³⁶ Martin, Guy. "Angola confirmed to be operating HSI 32 interceptors." *DefenceWeb*. 24 March 2021. Available Online: <https://www.defenceweb.co.za/featured/angola-confirmed-to-be-operating-hsi-32-interceptors/>. Accessed 1 November 2021.

³⁷ Blade, Max. "Patrol Boat Requirements Shaping an Emergent Market." *Naval Forces*, 2017. Available Online: https://amiinter.com/pdf/Africa_Patrol_Boat_2017.pdf. Accessed 1 November 2021.

³⁸ Oscar Nkala, "Finmeccanica To Supply Angola With Maritime Surveillance Equipment, Craft." *Defense News*, 5 January 2016. Available Online: <https://www.defensenews.com/naval/2016/01/05/finmeccanica-to-supply-angola-with-maritime-surveillance-equipment-craft/>. Accessed 1 November 2021.

³⁹ "Ghana Buys \$37m Germany Naval Ships." *GhanaWeb*, 28 July 2010. Available Online: <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Ghana-buys-37m-Germany-naval-ships-186997>. Accessed 1 November 2021.

⁴⁰ Ghana Navy spokesman. Interview with contributors in October 2021.

⁴¹ Blade, 2017.

⁴² Ghana Navy spokesman. Interview with contributors in October 2021.

Equatorial Guinea, and Côte d'Ivoire. Overall, Military Balance reports indicate that there are around 50% more patrol vessels being operated by these twelve governments now (215) than there were a decade ago (147).⁴³

TRIANGULATING THE COST OF NAVAL COUNTER-PIRACY OPERATIONS: BUDGETS, FUEL CONSUMPTION, AND OFFICER PERCEPTIONS

Defense budgets and acquisition lists show region-wide investment in naval services, but what share of this effort is directed toward counter-piracy? This section attempts to triangulate an estimate using fuel data, detailed naval budgets (where available), and interviews with naval elites from across the region.

Fig. 3.8: Annual Counter-Piracy Naval Spending, Expert Multiplier Method (Millions of US Dollars)

Country	Counter-Piracy Multiplier	2015	2016	2017	2018	2019	2020	2021
Angola	20%	\$12.80	\$8.28	\$5.20	\$6.04	\$4.15	\$3.18	\$1.78
Benin	50%	\$1.24	\$1.31	\$3.41	\$4.03	\$3.14	\$2.34	\$1.99
Cameroon	50%	\$18.77	\$16.25	\$20.47	\$21.04	\$22.50	\$20.65	\$12.40
Congo	20%	\$11.52	\$11.30	\$9.04	\$7.70	\$4.72	\$4.82	\$5.00
Cote d'Ivoire	20%	\$5.85	\$6.77	\$5.98	\$6.53	\$6.82	\$6.55	\$3.21
DR Congo	20%	\$4.55	\$7.37	\$8.73	\$8.88	\$2.88	\$3.28	\$4.60
EQ Guinea	20%	\$0.15	\$0.15	\$0.28	\$0.28	\$0.28	\$0.28	\$0.24
Gabon	20%	\$3.89	\$4.19	\$4.34	\$6.43	\$5.60	\$5.72	\$5.96
Ghana	20%	\$7.15	\$6.37	\$5.03	\$4.77	\$5.45	\$6.01	\$6.45
Nigeria	60%	\$135.00	\$112.80	\$70.37	\$62.24	\$194.44	\$191.96	\$229.14
Togo	50%	\$1.04	\$0.83	\$0.97	\$1.04	\$1.23	\$1.25	\$1.41
Region Total		\$201.96	\$175.61	\$133.82	\$128.97	\$251.21	\$246.05	\$272.17

Source: Total naval spending totals are generated using the navy personnel ratios discussed above. These are then scaled by the counter-piracy multiplier described here.

First, we interviewed members from UNODC, as well as representatives from NIMASA, the ICC Yaoundé, and other military officials and maritime security experts around the region to generate



GNS Chemle, Commissioned for the Ghanaian Navy in 2012. Photo Credit: Ghana Navy Website.

These totals suggest that Nigeria is responsible for a growing share of total regional counter-piracy spending. This mostly reflects very large investments in the Nigerian navy, which has doubled naval personnel and added dozens of vessels over the last decade.

⁴³ The Military Balance: 2021.

a counter-piracy multiplier. This value is a rough estimate of the total share of a navy's attention consumed by counter-piracy activities. The experts they interviewed converged around totals of 60% for Nigeria, 50% for Togo, Benin, and Cameroon, and around 20% or less for the other states. This does not offer the precision that detailed budgets would, but these are not available and this strategy provides an estimate that is formed by members of the region's naval forces.

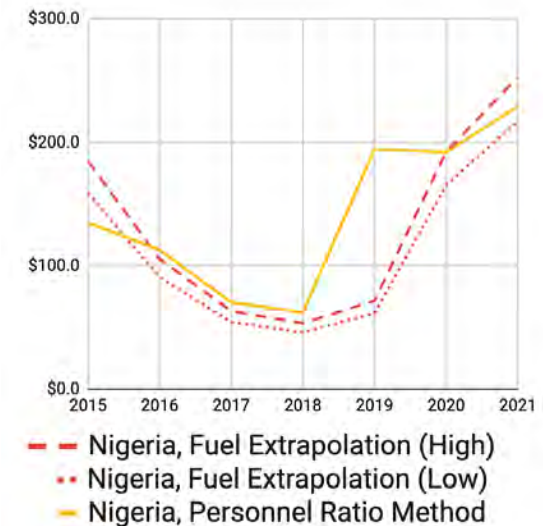
We multiply estimated navy budgets by these counter-piracy multipliers to arrive at the figures provided in Figure 3.8. For Nigeria, 60% of the \$382 million navy budget is \$229 million. This accounts for the majority of the region's total counter-piracy spending estimated by this method, which is \$272 million. Importantly, this has increased considerably since 2015.

Complete, detailed budgets could offer an estimate founded on fewer assumptions, but these budgets are not consistently available. One exception is a very detailed budget from the Nigerian navy. These documents provide good estimates of specific expenses that can be used to approximate counter-piracy spending using different data. The fuel data are especially useful because they underlie changes to operations.

This method, too, depends on assumptions. The navy budgets for fuel each year, but translating fuel budgets into planned operations requires one to make assumptions about the Navy's expectations for the fuel price in the budget year.⁴⁴ We use data on global oil prices on the last day of each year to approximate expectations headed into the subsequent year. In other words, we divide the fuel budget by the closing price of oil on the last day of the previous year to get a reasonable approximation of how many operations were planned (oil units budgeted). Beginning in 2015, we saw a sharp drop in operations while Nigeria's economy struggled before a recovery in 2020 and 2021. This looks similar to the estimate generated from naval budgets presented in Figure 3.8.

To monetize this fuel-derived variation in operational planning, we use the last widely accepted estimates of regional naval spending, which were produced by Oceans Beyond Piracy in 2015 and 2016. Those estimates were not explicitly tied to the Nigerian Navy vis-à-vis other parts of the Nigerian government, but they ranged from \$237.8 million to \$276.5 million.⁴⁵ Both scenarios are presented in the tables in Figure 3.10.

Fig. 3.9: Counter-Piracy Spending Estimates for Nigerian Navy (Millions of USD), 2015 - 2021.



Estimates using personnel ratios and extrapolation from fuel budgets show similar figures that diverge most in 2019. This is due to a dramatic increase in the fuel budget that year (\$1.9 million to \$6.9 million). Also note that the larger gap in the oil estimates in 2020 and 2021 could be evidence of oil price volatility related to COVID19.

⁴⁴ Budget Office of the Federation, Federal Republic of Nigeria

⁴⁵ NIMASA expenses were estimated separately. See the 2014-2016 *State of Maritime Piracy* reports for more information. www.oneearthfuture.org.

Fig. 3.10: Annual Counter-Piracy Naval Spending, Fuel Extrapolation Method (Millions of US Dollars)

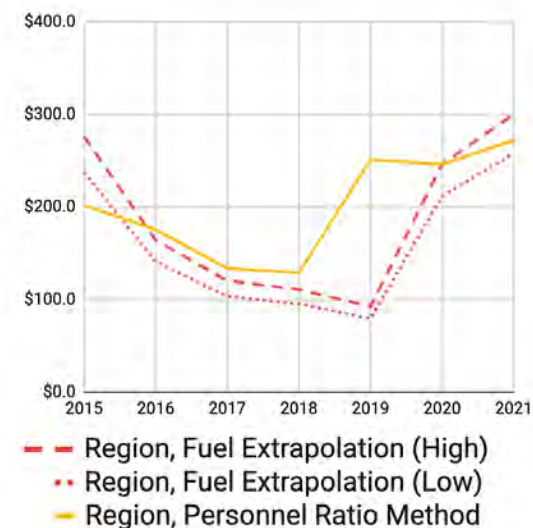
Low Bound	2015	2016	2017	2018	2019	2020	2021
Fuel Budget (\$m)	\$5.80	\$2.30	\$2.00	\$1.90	\$1.90	\$6.90	\$7.20
Oil Price (Jan 1)	\$53.45	\$37.13	\$53.75	\$60.46	\$45.15	\$61.14	\$48.52
Oil Units Budgeted	108,513	61,945	37,209	31,426	42,082	112,856	148,392
Nigeria Estimate (\$m)	\$158.96	\$90.74	\$54.51	\$46.04	\$61.65	\$165.32	\$217.38
Nigeria Effort Share	66.85%	64.23%	52.59%	48.26%	77.40%	78.02%	84.19%
Region Total (Millions)	\$237.80	\$141.27	\$103.65	\$95.40	\$79.64	\$211.91	\$258.21

High Bound	2015	2016	2017	2018	2019	2020	2021
Fuel Budget (\$m)	\$5.80	\$2.30	\$2.00	\$1.90	\$1.90	\$6.90	\$7.20
Oil Price (Jan 1)	\$53.45	\$37.13	\$53.75	\$60.46	\$45.15	\$61.14	\$48.52
Oil Units Budgeted	108,513	61,945	37,209	31,426	42,082	112,856	148,392
Nigeria Estimate (\$m)	\$184.83	\$105.51	\$63.38	\$53.53	\$71.68	\$192.23	\$252.76
Nigeria Effort Share	66.85%	64.23%	52.59%	48.26%	77.40%	78.02%	84.19%
Region Total (Millions)	\$276.50	\$164.26	\$120.52	\$110.93	\$92.60	\$246.39	\$300.23

Source: Oil Price values are the closing world market price before the markets opened on the first day of the year (Macrotrends, 2021). Fuel Budget data are from Nigerian budget documents. Oil Units Budgeted is Fuel Budget divided by Oil Price. Counter-Piracy Effort Share is calculated from “Nigeria” divided by “Region Total” in the previous table.

None of these methods is perfect; undisclosed information related to naval expenditures includes the service-specific allocation within defense budgets, the frequency of patrols, and the division of focus within each individual national naval service. However, crude estimates converge around a similar number of roughly \$260 million to \$300 million in the last year for total regional counter-piracy efforts by the 12 countries studied (see Figure 3.11). This has varied year-to-year due to one-time major investments, vessel and platform acquisitions, fuel price volatility, the COVID19-related economic crisis, and budget reprioritization toward or away from counter-piracy activities. Extrapolating this method over the last decade suggests total spending on counter-piracy operations to be around \$2.1 billion since 2010.

Fig. 3.11: Counter-Piracy Spending Estimates for 11 Regional Navies (Millions of USD), 2015 - 2021.



The region-wide estimate shows a similar pattern, though it increasingly reflects Nigeria because Nigeria's share of counter-piracy activity has increased to more than 80% of the regional total.

NON-NAVY REGIONAL COUNTER-PIRACY INITIATIVES

Many government agencies beyond navies are involved in counter-piracy activities, including transportation ministries, port authorities, and even fisheries management agencies that share interests in vessel identification technology, radar capabilities, and maritime domain awareness. Parsing out the direct costs specific to piracy from these cross-functional expenditures is impossible, but it is often clear that the additional pressure of piracy and armed robbery is instrumental in securing sufficient political will, government funding, and foreign assistance. This section highlights the largest non-navy financial commitments by regional governments to piracy-specific expenditures.

The most substantial investments beyond naval spending are being made in Nigeria. NIMASA, the Nigerian Maritime Administration and Safety Agency, spends more than \$200 million per year on countering piracy and promoting maritime safety in Nigerian waters.⁴⁶ The most significant commitment to date, the Deep Blue project, includes \$195 million for the acquisition of new vessels, aircraft, and platforms to improve Nigeria's ability to detect and rapidly respond to incidents at sea.⁴⁷

Nigeria's Deep Blue project is a \$195 million investment in vessels, maritime domain awareness platforms, and land and sea assets.⁴⁸

The Deep Blue Project team comprises members of the Federal Ministry of Transportation; Ministry of Defence, including the Nigerian Army, Nigerian Navy, and Nigerian Air Force; Department of State Services (DSS); Office of the National Security Adviser (ONSA); Nigeria Police; and NIMASA. The Command, Control, Computer, Communication, and Intelligence (C4i) Centre; training facilities; and operational bases are essential components of the project. The C4i Centre, in operation since August 2019, will provide maritime domain awareness in real time.

According to Dr. Bashir Jamoh, the Director General of NIMASA, the administration has been working to fulfil its mandate and obligations using the tripod of Triple S: security, safety and shipping development.

Recently, the agency has deployed the Deep Blue Project to implement the first S of the tripod, which is security, to stem the tide of piracy and other forms of criminality in the country's waterways. The objective is to keep the waterways secure for all maritime activities to thrive, thereby positioning Nigeria's economy on the path of rapid growth.

The effort is boosted by the Suppression of Piracy and Other Maritime Offences Act of 2019 (SPOMO), which provides the legal teeth that are needed to fight piracy in the Nigerian maritime environment. It is now possible to prosecute maritime offences in the courts.

⁴⁶ NIMASA budgets are not public and are complicated by the fact that NIMASA collects revenue and remits funds back to the federal government. This estimate is derived from Oceans Beyond Piracy and personal interviews with NIMASA officials. Budgets shared with Stable Seas shows 2020 and 2021 expenditures of approximately \$45 million per year on Deep Blue and the Maritime Guard Command, but this figure does not include additional resources allocated toward port security and management, fuel for operations, and salaries.

⁴⁷ "Nigeria Launches Deep Blue Campaign to Stop Regional Piracy." *The Maritime Executive*, 10 June 2021. Available Online: <https://www.maritime-executive.com/article/nigeria-launches-deep-blue-campaign-to-stop-regional-piracy>. Accessed 1 November 2021.

⁴⁸ Jamoh, Bashir, "Clearing the misconception about NIMASA as a revenue agency", *The Guardian*, 18 August 2021. Available online: <https://guardian.ng/business-services/maritime/clearing-the-misconception-about-nimasa-as-a-revenue-agency/>. Accessed 20 November 2021.

The system would be fully operational when all the air, land, and marine assets are integrated and deployed.⁴⁹

The sea assets include two DP2-class Special Mission Vessels (designated DB Lagos and DB Abuja) and 17 DHM1050 Fast Interceptor Boats.⁵⁰ They will be used in combating piracy, IUU fishing, and other crimes; inspecting vessels; and will also have a search and rescue function. The 10.45 metre DHM1050 interceptor boats are capable of a top speed of 60 knots and a payload of 2,000 kilograms.

The land assets of the project include 16 armoured vehicles for coastal patrol; and a Maritime Security Unit which will have 600 specially trained troops for interdiction drawn from the Air Force, Navy, Army, Nigeria Police, Department of State Services, and other security agencies. Some members of the unit will receive international training.⁵¹ The air assets will include two Special Mission Aircraft for surveillance of the EEZ; three Special Mission Helicopters for search and rescue operations; and four Tekever AR3 Unmanned Aerial Vehicles (UAV). The AR3 UAVs are intended for shipborne operations, launched by a catapult, and recovered by parachute or net. It can be airborne for 16 hours, with a range of 54 nautical miles and a maximum payload of four kilograms. EO and IR sensors can also be added.

No other non-navy program in the region matches the scale of Deep Blue, but other states will have their own initiatives coming online. Accounting for these initiatives, as well as the subtraction of some Falcon Eye and Deep Blue funds purposed for maritime crime problems beyond piracy and armed robbery, our best estimate for total regional non-naval investment in counter-piracy activities is perhaps \$250 million per year.

YAOUNDÉ ARCHITECTURE & MULTILATERAL ACTION

Governments are also spending on regional multilateral counter-piracy operations. The most advanced of these is the Yaoundé Architecture for Maritime Security (YAMS) - a hierarchical network of maritime operations centers that works to accelerate intra-regional information-sharing and coordinate responses to emerging incidents.

"With all hands on deck, the Deep Blue Project is going to provide the security architecture that is needed to change the narrative of the Nigerian maritime environment covering up to the Exclusive Economic Zone, including the Gulf of Guinea. Hopefully, that would lead to a change in perception concerning security in the region, thus forcing foreign underwriting firms to take a second look at the very high premium they charge on Nigeria-bound cargoes."

Dr. Bashir Jamoh
Director-General
NIMASA

Public statement, September 2021.



Source: Ghana Maritime Authority

⁴⁹ NIMASA, 2020. "Deep Blue Project: Facing Maritime Security Head-On", *The Voyage*, Vol.8 No.4. Available Online: <https://nimasa.gov.ng/deep-blue-project-facing-maritime-security-head-on/>. Accessed 21 November 2021.

⁵⁰ Guy Martin, "NIMASA Getting Ready for Major Deep Blue Deliveries", Defence Web, August 3, 2020, <https://www.defenceweb.co.za/featured/nimasa-getting-ready-for-major-deep-blue-deliveries/>

⁵¹ Osagie Edward, "NIMASA: Deep Blue Project Driven by Competent Manpower", NIMASA, <https://nimasa.gov.ng/nimasa-deep-blue-project-driven-by-competent-manpower/>

The Architecture, which was agreed to in 2013 and continues to advance toward full operationalization as of 2021, consists of reporting and coordination centers at three tiers. The Inter-regional Coordination Center (ICC/CIC), based in Yaoundé, sits atop this structure and maintains responsibility for driving coordination between all YAMS members from Cabo Verde in the north to Angola in the south. The second tier consists of two more centers, each responsible for coordination in the ECOWAS region (West Africa) and the ECCAS region (Central Africa). The Regional Center for Maritime Security in West Africa (CRESMAO) is located in Abidjan, while the Regional Center for Maritime Security in Central Africa (CRESMAC) is in Pointe Noire. Five more multinational coordination centers form the tertiary level. These are based in Cabo Verde (Zone G), Ghana (Zone F), Benin (Zone E), Cameroon (Zone D), and Angola (Zone A). These eight centers vary widely in their present funding and operationalization.

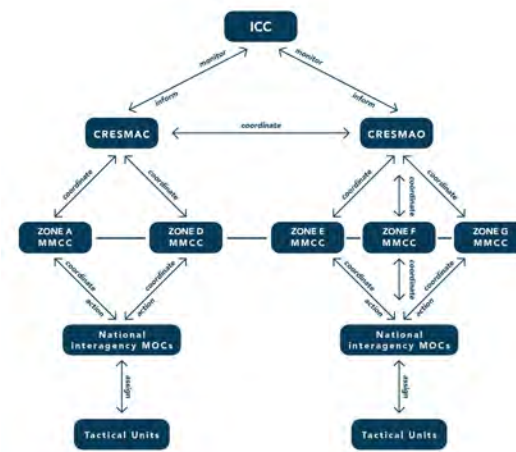
The Yaoundé Architecture was designed in 2013, but its budget needs have not yet been met. This section presents aspirational budgets that show what will be required, as well as a budget showing what is currently contributed.

Funds for these centers are to be dedicated by regional states and by ECOWAS and ECCAS, the economic organizations for West and Central Africa, respectively. Inquiries to YAMS leadership revealed that approximately 40% of the budget is covered by African contributions, with the rest funded by non-African donors, intergovernmental organizations like the United Nations, and the private sector.

A 2019 study by Expertise France reported that the five multinational coordination centers will someday require €139,700 each (\$161,400), which sums to €698,500 (\$807,200). The regional centers are estimated to combine for another €1.2 million (\$1.4 million) in required funding, while ICC costs are projected to range from another €7.5 million to €9.3 million annually (\$8.6 million to \$10.7 million). In sum, Expertise France calculates the total annual cost of operating all eight centers to be approximately €10.3 million (\$12 million).⁵² However, not all centers are operational at this time, so this funding level represents an estimate of what will someday be required, rather than an accurate account of what is being spent in the present.

These estimates are not conclusive, and others have estimated much greater costs for the eight centers to become fully operational. CRESMAC responded to requests for budget details with a

Fig. 3.12: Yaoundé Architecture



Source: Stable Seas: Gulf of Guinea

The Yaoundé Architecture for Maritime Security (YAMS) currently includes 19 coastal countries and several land-linked nations. Its membership includes all 12 of the nations in the area of study. These are concentrated in Zones A, D, E, and F.

⁵² Lanoe, Yvonnick. 2019. "Architecture of Yaoundé Budget and Finances." Presented 5-6 November 2019. Plenary Meeting of the G7++. Accra Ghana.

proposal for what it will take for CRESMAC and the two zones below it to be fully operational. The total of CFA 5.06 billion (\$8.96 million) for these three centers extrapolates to nearly \$23.9 million for all eight centers. We did not receive similar information from CRESMAO or the ICC.

However, the ICC did provide budget documents showing a 2018-2021 budget that totals €16.86 million (\$19.55 million) for these four years. These documents provide a critical contrast between what is currently being spent and what the region says it needs for full operationalization. The large majority of these funds are allocated toward budget categories directly related to piracy, including legal training and coordination across maritime coordination centers. When less relevant categories, such as maritime boundary demarcation and environmental protection, are excluded, the total quadrennial budget is just over €15 million (\$17.5 million). If 40% of funds are covered by African governments and regional economic institutions, then the annual regional expenditure would be approximately \$1.7 million per year.

Budget documents show that there is a wide gulf between what regional centers say they need (up to \$23.9 million per year) and what they currently receive (\$4.9 million per year). Full operationalization will require greater investment or greater efficiency.

There are many smaller multilateral initiatives, but many receive funding from outside the region and none of these programs approaches the scale of the Yaoundé Architecture for Maritime Security. Because these other costs are likely to be small and Architecture is intended to address maritime crimes beyond piracy, we present \$2 million per year as our best estimate for regional expenditures on multilateral counter-piracy initiatives. Were the financial needs of the YAMS met as suggested by the 2019 Expertise France presentation, these costs could climb to \$5 million per year.

PROSECUTIONS & LEGAL REFORMS

The fundamental role of legislative frameworks and the legal finish in the fight against piracy cannot be underemphasized. Without convictions---and none were reported before 2021---piracy will remain a low-risk, high-reward venture for pirates.

The G7++ Group of Friends of the Gulf of Guinea, also known as FoGG, was created in 2013 during the UK presidency of the G7 to support the Yaoundé Architecture. Since that time, it has been led by a Secretariat based in the country that holds the rotating G7 presidency. In 2015, it was proposed that the G7 country leading the Secretariat be joined by a Yaoundé Code of Conduct signatory in a co-Secretary role.

The G7++ currently includes 6 Virtual Working Groups to address Legal Issues, Financial Sustainability, Maritime Domain Awareness, Education and Training, the Blue Economy and Operations.

Other important coordination mechanisms include the recently formed NIMASA Industry Joint Working Group (NIWG) formed in 202 and the Shared Awareness and Deconfliction (SHADE) - GoG group for operational coordination formed in 2021.

Since 2012, 141 pirates and armed robbers have been arrested in 24 incidents of piracy and armed robbery at ports and anchorages in the Gulf of Guinea.⁵³ The Gulf of Guinea had the most piracy convictions in decades in 2021, with a record number of 26 pirates convicted in three piracy trials. In the first trial of its kind, Togo convicted 9 pirates for the hijacking of the G Dona I in 2019. Nigeria convicted ten pirates for the hijacking of the Hai Lu Feng 11 in 2020, which were the first pirates convicted under Sections 3, 10, and 12 of the Suppression of Piracy and Other Maritime Offences Act of 2019 (SPOMO). The third case almost went unnoticed in the region. Seven pirates were convicted in Nigeria for the Maximus hijacking in 2016, though not under the SPOMO Act.

Togo and Nigeria have passed anti-piracy laws and lead the region in piracy trials and convictions.

Though the numbers of trials and convictions have been low to this point, the groundwork for establishing a strong legal finish for piracy crimes has already been costly to Gulf of Guinea governments. Members of African governments and public sector employees have drafted legislation, completed law enforcement training, and participated in mock trials. In many cases international capacity-builders such as INTERPOL and the UNODC have financially supported some of these activities, but participation is also costly to Gulf of Guinea governments.

Using training attendance data from the UNODC and salary data from participating African governments, we can calculate the approximate value of the time that legal employees from each government---typically lawyers, prosecutors, judges, and magistrates---have spent in these training sessions.

According to data compiled by the UNODC, training related to legal aspects of piracy have cost the region at least \$350,000 since 2019, with the greatest expenditures attributed to Nigeria (\$79,000), Côte d'Ivoire (\$68,000), and Ghana (\$43,000). These expenditures may increase in future years as COVID19 restrictions ease and more states enact piracy legislation.⁵⁴

Fig. 3.13: Training Days and Costs, UNODC Legal Trainings 2019 - 2021.

Country	Day Rate	Days	Estimate
Nigeria	\$22.82	3,466	\$79,088
Cote d'Ivoire	\$56.14	1,208	\$67,813
Gabon	\$60.14	832	\$50,033
Togo	\$72.18	650	\$46,918
Ghana	\$36.36	1,184	\$43,055
Angola	\$0.00	200	\$26,364
Benin	\$30.27	670	\$20,283
Cameroon	\$28.05	375	\$10,517
Sao Tome and Principe	\$13.64	470	\$6,409
Total		9,055	\$350,479

Source: UNODC Global Maritime Crime Program. There were no recorded trainings for Congo and DR Congo.



Source: UNODC

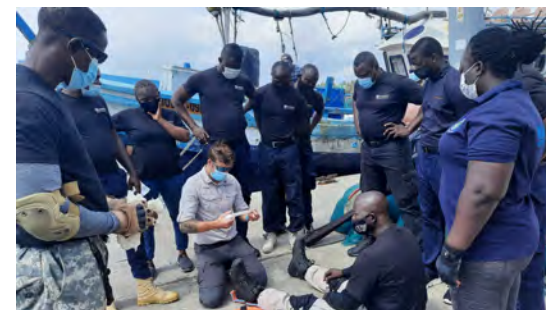
⁵³ Stable Seas Piracy Database.

⁵⁴ Calculations derived from data provided by the Abuja office of the United Nations Office on Drugs and Crime Global Maritime Crime Programme. Data provided to authors in October 2021.

Little is spent on prosecutions because few trials have happened to this point. With more states creating piracy legislation, these costs are likely to increase in coming years.

The Atlantic Ocean division of the UNODC Global Maritime Crime Programme also calculated total costs of recent piracy trials, arriving at a total of approximately \$50,000 per trial after accounting for the salaries of involved government employees, compensation for the jury, and other costs. If 2021 is any indication, the number of trials will rise precipitously as states like Nigeria and Togo implement anti-piracy laws.⁵⁵ Trials lag crimes by years---one of the 2021 trials was of the 2016 hijacking of the *Maximus*---so these costs may increase for some time even if pirate incidents decrease in the immediate future.⁵⁶

Taken together, the legal costs associated with counter-piracy efforts are small relative to naval costs, but they are critically important to solving the problem. Over the last three years, we estimate an average annual cost of \$150,000 to \$200,000. Pirates are unlikely to be deterred until there are real legal consequences for apprehended criminals. This makes these expenditures crucially important, even if the absolute total is small relative to other financial costs to African states.



Source: UNODC

⁵⁵ Interestingly enough, this total, calculated up from known Nigerian salaries, is remarkably close to the \$52,000 estimate given for the cost of a piracy prosecution in East Africa. See Bowden, Anna, Kaija Hurlburt, Charles Marts, Andrew Lee, and Eamon Aloyo. 2010. *The Economic Costs of Maritime Piracy*. Oceans Beyond Piracy, One Earth Future.

⁵⁶ Calculations derived from data provided by the Abuja office of the United Nations Office on Drugs and Crime Global Maritime Crime Programme. Data provided to authors in October 2021.

4 COSTS TO SHIPPING AND TRADE

Previous attempts to estimate the financial impact of piracy and armed robbery in the Gulf of Guinea have highlighted very high costs to the maritime transportation sector. These costs, which sum to hundreds of millions of dollars per year, are imposed on shippers throughout all stages of a typical port call in the region. Insurers charge higher rates to operate in waters perceived to be dangerous and many companies provide hazard pay to seafarers who transit the area. Ship operators often harden their vessels with anti-piracy measures and some hire armed guards or security escorts. When vessels reach a port, they then will typically pay higher freight rates and additional security fees.

All of these piracy-related business expenses impact government revenue earned through transoceanic trade. They also indirectly raise the cost of goods imported to the Gulf of Guinea and make Gulf of Guinea exports less competitive in the global market. In these ways, the increased costs of security, operations, and insurance indirectly impose far-reaching indirect costs on African nations, even when upfront direct costs (shipping insurance, security escorts, etc.) are paid largely by international shipping companies.

This chapter relies on two main types of data. First, we draw upon macroeconomic data on port calls and shipping volume from several large databases. We use these data to ascertain macro-level shifts in shipping activity over the last decade, looking closely at how---or whether---local spikes in piracy and armed robbery have reshaped maritime transportation throughout the region. Second, we use an original survey of more than 120 ship operators and security officers to understand how increased piracy threats are affecting the business decisions of dozens of companies working in the Gulf of Guinea. Indirect costs, by their nature, are impossible to quantify with specificity. However, this approach suggests some important ways that piracy and armed robbery are indirectly costing Gulf of Guinea economies.

KEY MESSAGES

- While some of the direct costs related to piracy are borne by the region (Chapter 2), the majority of direct costs paid to pirates are incurred by the foreign shipping industry and are not within the scope of this report. However, these costs impose significant indirect costs by incentivizing changed shipping patterns and decreased business activity.
- Shippers re-route traffic within the region to avoid high-risk areas. An example of this can be seen in early piracy spikes in 2010 to 2012, which imposed indirect costs on Benin,

The direct costs of piracy to the shipping industry can be significant, though such costs fall outside the scope of this report on broader costs to African nations.

According to the *Oceans Beyond Piracy State of Piracy* report completed in 2018, these direct costs to shippers include:

- Contracted Security - \$367.3m
- Additional Insurance - \$39.2m
- Ship Protection Costs - \$4m
- Additional Labor Costs - \$111m
- Stolen Goods - \$413,000

This chapter shifts the focus to how these costs to shipping are indirectly affecting the revenues collected by the region's nations.

Inter-regional shifts occur when piracy threats drive business out of the region altogether. Examples would be ship operators or oil producers suspending operations due to piracy concerns in the Gulf of Guinea.

Intra-regional shifts occur locally when piracy hotspots within the Gulf of Guinea steer economic activity toward safer ports within the same region. Examples include re-routed shipping, which can decrease port revenues in the riskiest areas while benefiting ports perceived to be safer.

Togo, and Nigeria as piracy displaced local port traffic. These patterns are not identifiable in later years, perhaps because pirate attacks---and the resulting perceptions of risk---are now spread across a much larger risk area.

- Shipping traffic is increasing in West Africa at a rate that outpaces the global average, but it could be increasing even faster were shipping companies not concerned by piracy. An original survey of ship operators and security officers finds persuasive evidence that many companies would either begin operations or increase activities above present levels if piracy and armed robbery were reduced. We estimate the cost of this displacement to be in the billions, with as much as \$1.7 billion in lost port fees and another \$8.5 billion in lost import tariffs over the last decade.
- 38.3% of survey respondents who are not currently operating in the Gulf of Guinea indicated that they would certainly operate if there was a reduced piracy threat and 49.8% said that they would consider operations if piracy were reduced. While these figures cannot be monetized, they do indicate that a sustainable solution to piracy would bring increased shipping volume and the associated economic benefits to both coastal states and land-linked countries relying on imports.

MACROECONOMIC SHIPPING TRENDS

Shippers routinely conduct risk assessments and ship security planning prior to entering the Gulf of Guinea in order to mitigate the threat of violence to the crew and to avoid the uncertainty that comes with a piracy attack. In fact, these considerations appear to outweigh economic impacts as the biggest influence for shippers to alter their business practices and transportation routes in these high risk areas. Many shippers are advised to avoid specific areas by international agencies, company security departments, and security consultants.

Because of the persistent threat of piracy in the Gulf of Guinea, there is an entire industry that has been built around advising and protecting ship owners in the Gulf of Guinea by providing security services and routing advice. Additionally, there is extensive public guidance such as BMP West Africa. Best Management Practices to Deter Piracy and Enhance Maritime Security off the Coast of West Africa including the Gulf of Guinea⁵⁷ describes security measures that should be in place prior to entering the areas included within the Voluntary Reporting Area (VRA).

These estimates of as much as \$1.7 billion in lost port fees and \$8.5 billion in lost import tariffs over the last decade are based on what survey data, shipping data, and port financial reports reveal about the long-term effects of piracy threats on port traffic across the region.



Best Management Practices and other advisory publications are used to provide security guidance to shipping companies operating in the Gulf of Guinea. Many recommendations impose costs on shipping companies, though this impacts African nations mostly indirectly through lost trade.

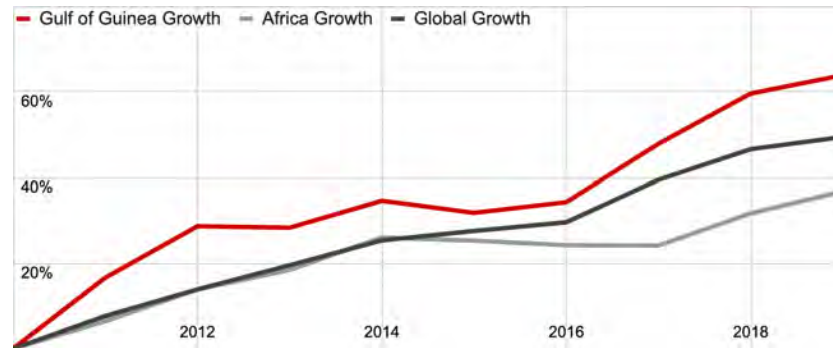
⁵⁷ BIMCO, ICS, INTERCARGO, INTERTANKO, OCIMF. 2020. *Best Management Practices to Enhance Maritime Security for Vessels & Mariners Operating Off the Coast of West Africa including the Gulf of Guinea (BMP WA)*. Available online: <https://www.ocimf.org/publications/books/bmp-west-africa>. Accessed on 21 October 2021

The focus of this section is to determine the extent to which the threat of piracy and armed robbery at sea result in measurable changes to shipping activity, and whether it is driving macroeconomic changes in coastal countries.

Despite a major recession affecting several Gulf of Guinea countries in the middle of the decade, total maritime trade through the region has increased in line with other developing economies around the world. Of note, liquid bulk throughput was fairly stagnant starting at 96 million metric tons in 2010 and only increasing to 102 million metric tons by 2019.⁵⁸

Unlike the moderate increases in trade observed in overall shipping throughput, the growth in container throughput has seen strong growth over the decade. Data from the United Nations Conference on Trade and Development (UNCTAD) shows a regional increase in container volume---as measured in TEU, or twenty-foot equivalent units---of 64% between 2010 and 2019. Over the same time period, global container trade grew 49%, while the African continent saw container growth of 37%. If piracy affected container throughput between 2010 and 2019, this is not reflected in numbers aggregated to the regional level.

Fig. 4.1: Growth in Container Port Throughput since 2010



Source: UNCTAD, Annual Container Port Throughput Dataset⁵⁹

Container trade plateaued in the middle of the decade around the time when criminals transitioned from oil theft to kidnapping for ransom, but the rest of Africa also saw stagnant



Mali is one of many land-linked countries that can be affected by increased shipping costs in the Gulf of Guinea. Source: UN.

It is critical to remember the impact of maritime crimes like piracy and armed robbery on land-linked states. More than a dozen countries lacking sea access, reaching from Zambia to Mali, suffer indirect costs from shipping costs traced to piracy threats that impact maritime trade in the Gulf of Guinea.

⁵⁸ UNCTADStat. 2021. United Nations Conference on Trade and Development (UNCTAD). Available Online: <https://unctadstat.unctad.org/wds/TableView/tableView.aspx?ReportId=13321>. Accessed 1 November 2021.

⁵⁹ Ibid.

container trade during this period. A more likely driver of this period of stalled maritime trade growth is the mid-decade recession. During these years Nigeria saw its gross domestic product plummet from \$546 billion in 2014 to \$376 billion in 2017.⁶⁰ Across the twelve coastal countries between Côte d'Ivoire and Angola, combined gross domestic product fell from \$926.5 billion in 2014 to only \$739 billion in 2017 (-20%). This recession was led by precipitous declines in oil-dependent countries. Between 2014 and 2020, the decreases to gross domestic product were most severe in Nigeria (-31%), Angola (-57%), Equatorial Guinea (-53%), and Congo (-39%).⁶¹

Given the economic challenges of the last decade, West Africa's growth in container throughput has been remarkable. These data do not show piracy depressing this important aspect of maritime trade across West and Central Africa.

Major port investments, particularly in Togo, Côte d'Ivoire, and Ghana, have helped the region demand an increasing share of the world's container trade throughput even as its largest economies have contracted.

Data on container volume tells one part of a complex story, but it does not provide a complete picture. These data say nothing about non-container commercial vessels working these waters, including tankers and dry bulk carriers. Data on port calls to the region's major ports can address this question.

We acquired historical data on ship locations and port calls from Vessel Tracker, which has stored AIS-generated geospatial data in the Gulf of Guinea for more than a decade. Like the container data discussed above, this source is useful but imperfect. The quality of the data varies across ports and over time, just as vessel classification and local enforcement of AIS reporting varies. This limits the validity of inferences to be drawn from the data. Still, along with other sources it can contribute to our understanding of port traffic in the Gulf of Guinea.

Using these data, we examined changes over time in individual port calls for eight ports spread across the region. From northwest to southeast, these ports are: Abidjan (Côte d'Ivoire), Tema (Ghana), Lomé (Togo), Cotonou (Benin), Lagos (Nigeria), Douala (Cameroon), Pointe-Noire (Congo), and Luanda (Angola).



MSC is expected to invest €500 million in Lomé's Container Terminal over the next decade. Source: Togo First/Invest in Togo Website.

Fig. 4.2 African Share of Container Traffic (2017) from UNCTAD Report: "Maritime trade and Africa"



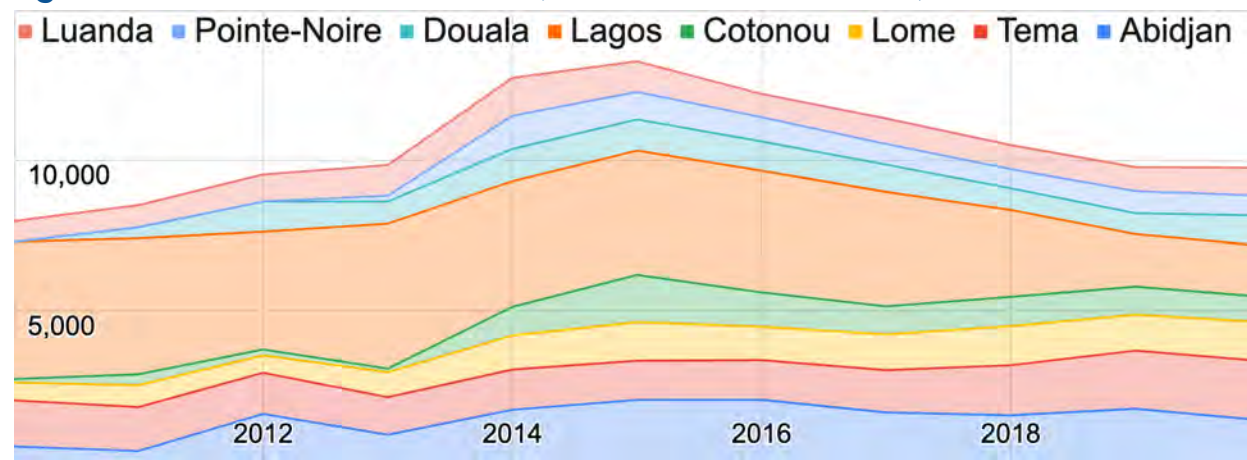
⁶⁰ Databank. 2021. World Bank. Available Online: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=NG>. Accessed November 2021.

⁶¹ World Bank Databank, 2021.

We can draw more from the data by focusing on vessels over 120 meters in length. There are two reasons for doing this. The first is that AIS adoption is more universal on larger vessels, so setting a threshold has the positive effect of increasing the internal validity of the data. Indeed, in 2010 47% of recorded port calls were from vessels over 120 meters. This share is no higher than 21.7% after 2014. The most likely explanation for this major change in the data is that small vessels were undercounted earlier in the decade when AIS was less prevalent.

The second reason to limit our study to vessels larger than 120 meters is that this report is attempting to calculate the economic costs to the region associated with changes in shipping patterns of commercial vessels. Most of the vessel traffic of less than 120 meters described utility vessels such as tugs, pilot boats, and supply vessels which were not included in our economic calculations.

Fig. 4.4: Vessel Tracker Port Visits, Vessels of +120 Meters, 2010 - 2020



Source: Vessel Tracker

At the aggregate, the data do show a substantial drop in traffic as criminals plying the Gulf of Guinea increased kidnapping seafarers for ransom. Port visits peaked in 2015, when 13,303 large vessels visited these ports. This number fell to 9,778 in 2019 and, interestingly enough, stayed level at 9,760 during the COVID-19 pandemic. This decline in port visits after 2015 occurred even as container volume in the region increased. This could be because vessels grew larger over the decade, increasing their average length from 168.3 meters in 2010 to 202.6 meters in 2021 (see Figure 4.3).

Limiting the data to vessels over 120 meters eliminates 99.5% of the tugs, fishing vessels, and non-oil tankers (water, food products, etc.). On the other hand, 76.3% of oil and chemical tankers are above this threshold, as are 99.1% of container ships, and 97.8% of bulk carriers.

Fig. 4.3: Average Length of Large Vessels (+120m) in Port (in meters), 2010 - 2020

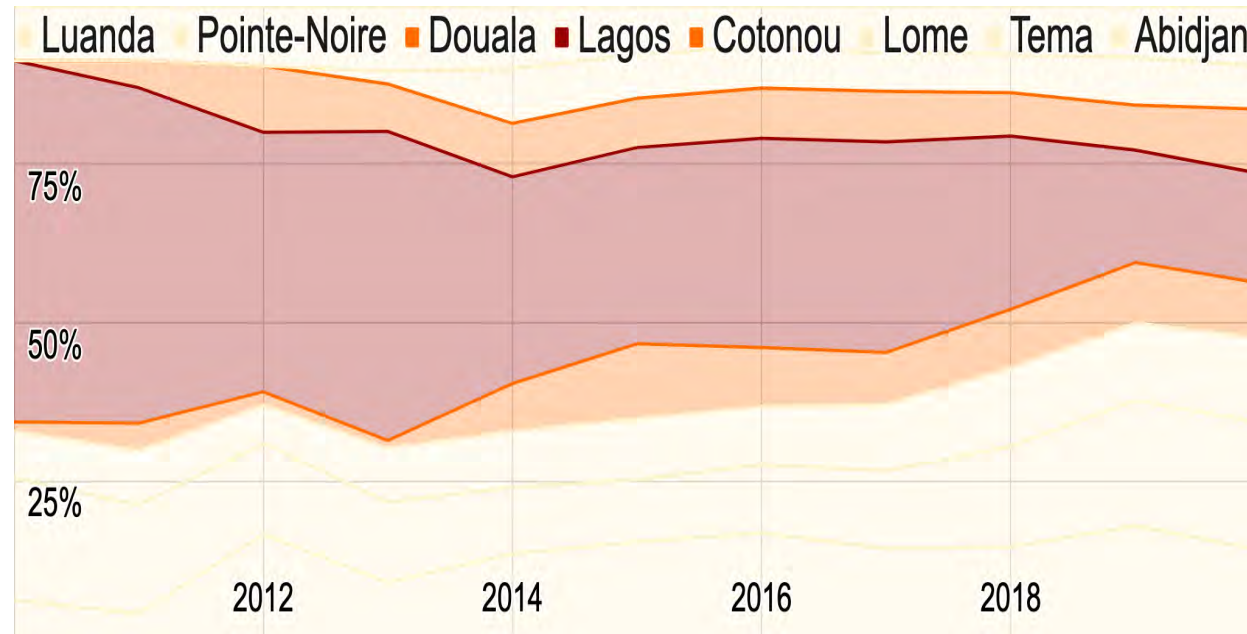


Source: Vessel Tracker

This decline in port visits after 2015 occurred even as container volume in the region increased. This could be because vessels grew larger over the decade.

This list of ports is not comprehensive, so it is also possible that some container traffic is increasingly going to ports not included in our Vessel Tracker data. Similar data from the Abuja MoU Annual Reports⁶² (Figure 4.5) uses countries instead of ports, so it would show an increase in container traffic if vessels are going somewhere other than the region's major ports. However, it shows no such trend.

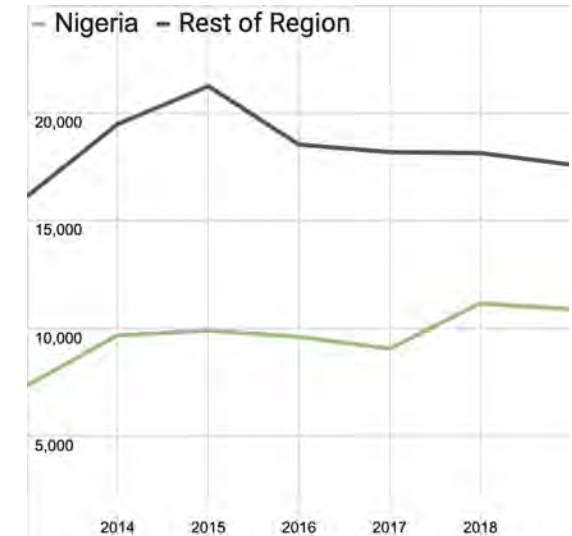
Fig. 4.6: Ports Close to Pirate Hotspots Saw a Smaller Share of Port Calls



Source: Vessel Tracker. Data limited to vessels over 120 meters. Ports are shown south (top) to north (bottom) in the Gulf of Guinea.

Port-specific data reinforces this story. The ports closest to the major hotspot—Lagos at the center and Douala and Cotonou on the periphery—gradually lost port visit share to other ports farther from the hotspot over the decade. Between 2010 and 2013, these three ports combined for 53% to 62% of all visits to this group of eight ports. This had been nearly halved to 34.4% in

Fig. 4.5: Port Traffic in Nigeria versus Other Abuja MoU Countries, 2010 - 2020



Source: Abuja MoU (2021). The included countries in the “Rest of Region” category are Ghana, Congo, Benin, Côte d’Ivoire, Togo, Gabon, and DR Congo.

Fortunately, port call data is also shared by most states in the area of study through the Abuja MoU Annual Reports. It shows the same general peak in 2015 followed by a slow and slight decline. The trend is tempered in this data due to a recorded increase in port activity in Nigeria - something that neither the UNCTAD nor the Vessel Tracker data can corroborate.

⁶² Abuja MOU Annual Reports. Available online: <http://www.abujamou.org/index.php?pid=yvs34jf67gy6g7893u>. Accessed 2 November, 2021

2019 and 36.1% in 2020. There are many drivers of global trade flows, but on average the macroeconomic data evince a drop in port visits in the areas most targeted by pirates.

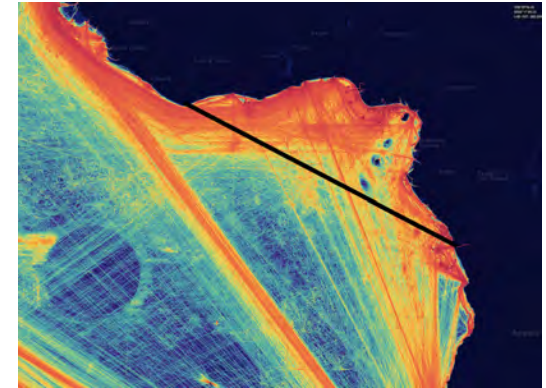
Taken together, these data show the following trends:

- Changes in shipping flows in the Gulf of Guinea as measured by AIS data provided by Vessel Tracker show that there is a close relationship between decreased port calls and those countries that have been identified as the highest risk countries for piracy.
- Total shipping throughout of imports and exports increased while port visits decreased, perhaps because the average large ship in these ports today is 20% larger today than it was in 2015.
- Rapid container throughput growth in West African ports, and in Lomé in particular, is off-setting slower growth in ports closer to piracy hotspots. Piracy risk may be a driver of this shift, but there are many competing explanations.

CORRELATIONS and COMPLICATIONS

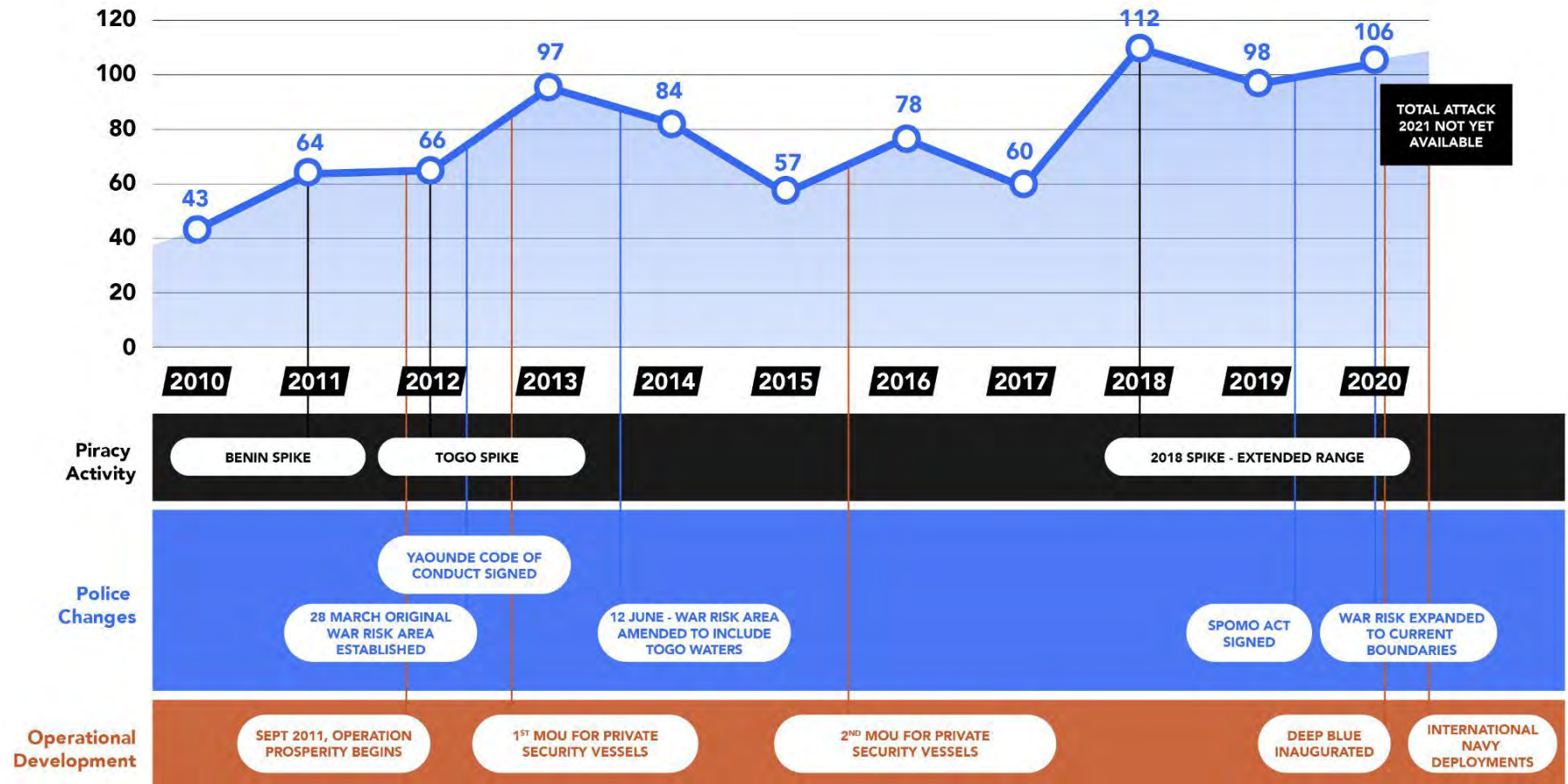
Maritime trade is affected by myriad influences in addition to piracy, and this complicates any effort to link any single factor like piracy risk to macroeconomic data. Among the omitted factors that also drive these trends in port visits and throughput:

- Major economic disruptions, including the 2008 global recession and 2020 COVID19 pandemic.
- Major fluctuations in oil prices, such as the mid-decade collapse in oil prices and the increased volatility due to the COVID19 pandemic.
- Major investments to port infrastructure or decisions by major shipping companies to consolidate regional activity, as we have seen in Lomé.
- Changes in relative efficiency causing intra-regional shifts in port activity. For example, it is significant that wait times in Lomé are now approximately one-third of what they are in Nigeria's largest ports. This has surely contributed to the growth of some ports at the expense of others.
- Policies related to trade extending beyond the maritime domain, including major road or rail investments that drive intra-regional shifting toward ports with easier access to land-linked countries and inland population areas.



Shipping density 2019-2020, with more trafficked areas showing in shades of red. Image and data from Marine Traffic. The black line shows the boundary of the Extended Risk Area for seafarers established by the International Bargaining Forum in October 2020.

Fig. 4.7: Timeline of Major Piracy Developments Related to Shipping Patterns



ISOLATING THE EFFECTS OF PIRACY AND RESPONSES TO PIRACY

Because there are many factors that contribute to the large-scale, region-wide changes to Gulf of Guinea shipping, it is useful to examine acute events that may have caused local or temporary disruptions or improvements to the localized shipping environment. These can be negative shocks, including a new wave of local incidents, or a positive development such as the initiation of a major counter-piracy operation. Each of the events or initiatives depicted in Figure 4.6 was identified to us by shipping or security stakeholders as a possible driver for changes in commercial vessel routing.

As described above, there are a number of factors that must be considered before a conclusion can be drawn that a shift in commercial shipping traffic is due to piracy activity. However, in the example detailed below, it is possible to reasonably attribute a sequential loss of shipping traffic to Benin, Togo and Nigeria to a localized piracy spike occurring during the 2010 to 2012 timeframe. Other assumptions regarding the most recent spike in piracy which affected shipping traffic out to 200 nautical miles and beyond could not be determined. This is because this spike occurred at the height of the COVID19 pandemic, which had a deep impact on world-wide shipping. It was also very geographically dispersed, unlike the local spike in 2010 to 2012.

The short-term, local spike in piracy in Benin in 2011 offers a rare opportunity to isolate how a rapidly changing piracy hotspot can affect shipping patterns.

Starting in the end of 2010 and extending into 2011, piracy attacks in the Gulf of Guinea made a dramatic shift toward the waters off Benin. These incidents totaled 21 attacks in 2011 where there were almost no attacks in previous years. Benin and Nigeria responded quickly to this threat by initiating Operation Prosperity (Sept 2011 – June 2012). Based on an agreement between these neighbors, regional vessels began joint patrols in areas near their borders. The Nigerian Navy agreed to provide most of the vessels and logistics, while Benin opened up its territorial waters to joint patrols. The combined efforts resulted in several arrests and interdictions between October 2011 and February 2012.

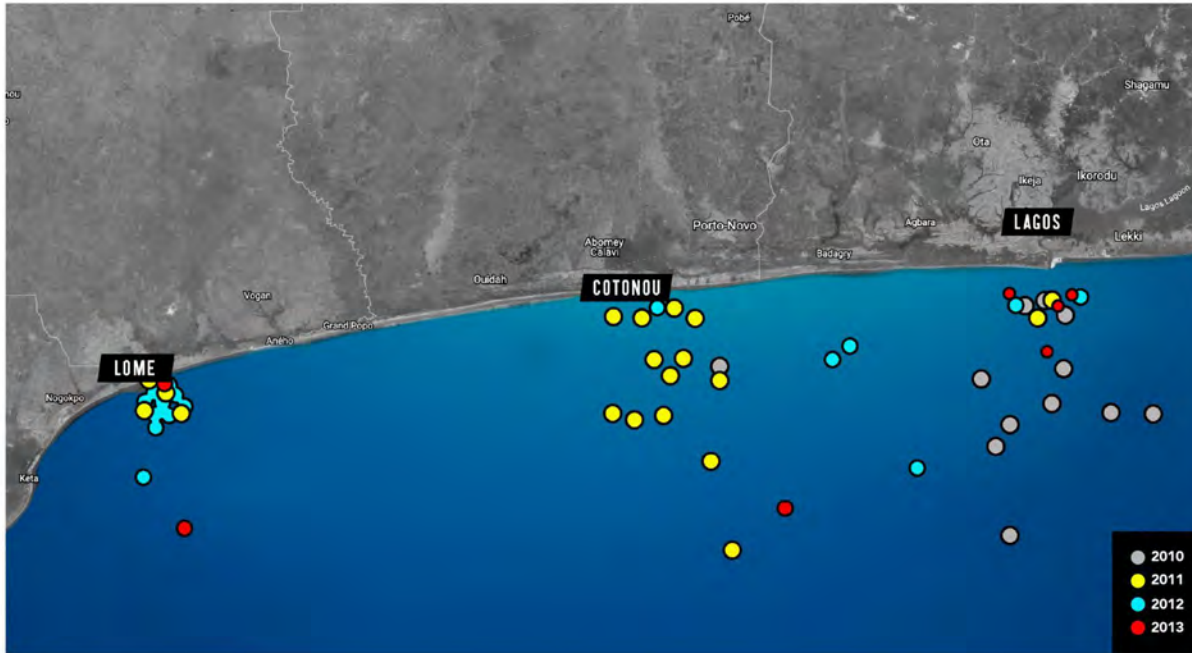
Joint War Committee (JWC) Listed Area for the Gulf of Guinea



Source: True North Marine Website.

The JWC listed War Risk Areas (or WRAs) appear to have little immediate impact on shipping patterns because shipping flows had changed prior to the JWC Listed Areas being created. The port traffic to Benin had already started to decline prior to the implementation of the first War Risk Area (WRA) in March of 2012, and port traffic to Togo was already rebounding by the time that country was added to the JWC Listed Areas in 2013. However, there is lasting reputational damage that can occur long after the WRA is removed. This keeps security considerations and costs elevated.

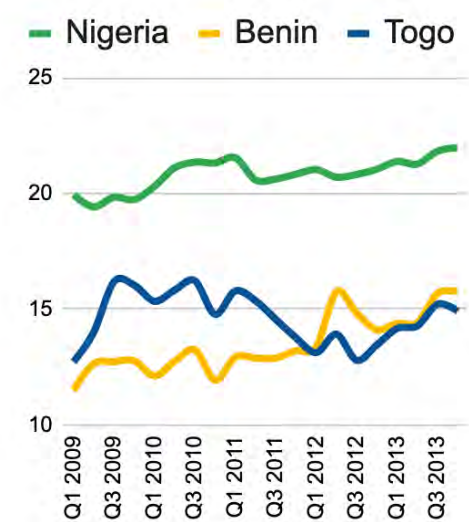
Fig. 4.8: Shift in Piracy and Armed Robbery Attacks, 2010-2013



Source: Stable Seas Database

The increased patrols executed jointly by Nigeria and Benin effectively put an abrupt stop to the attacks occurring in Benin's waters from 2010 to 2012. Unfortunately, it appears that these attackers merely moved their operations to neighboring Togo, where there was corresponding increase in attacks that began the following year. The rate of crime and piracy off Togo rose 78% in the third quarter of 2011 alone.⁶³ It has been speculated that the increase in piracy was due to a combination of the success of Operation Prosperity and the imposition of Additional Premiums (AP) for Benin which drove more shipping traffic towards Togo.

Fig. 4.9: Linear Shipping Connectivity



Source: UNCTAD, 2021.

The Linear Shipping Connectivity Index (LSCI) captures how well countries are connected to global shipping networks. These data corroborate the changes to shipping occurring in Benin, Togo, and Nigeria reported by local port authorities during the 2010-2013 period while other countries in the region did not experience these same fluctuations.

⁶³ Belde, Barthelémy and Diouf, Andre. 2016. "Togo's maritime challenges: Why Security remains a major issue". Institute for Security Studies (ISS) Africa.

If piracy and armed robbery is affecting local shipping, we would expect to see:

- 1. Declining traffic in Benin beginning in 2011 and extending into 2012.*
- 2. Declining traffic in Togo, beginning in 2011 and a large drop in 2012.*
- 3. Smaller declines in Nigeria, which was more distant from this activity.*
- 4. Possible shipping displacement into Nigeria, especially before Operation Prosperity displaced piracy farther from the new hotspot in Benin.*

The data sources listed above do not provide reliable data back to the beginning of this period, but we were able to obtain port call data through direct outreach or publically available information from port authorities in Togo⁶⁴, Benin⁶⁵, and Nigeria.⁶⁶ These data align with the expectation that the onset of a pirate hotspot caused intra-regional shipping displacement.

Beginning with Benin, we see that the country had 1,186 recorded port visits in 2010 before the wave of piracy began. This was the highpoint for this four-year period, as port visits fell 5.48% in 2011 and a further 13.49% again in 2012 during the height of Operation Prosperity. The growth from 2012 (1,026) to 2013 (1,154) shows that the shipping sector responded positively to the success of the operation and the decline in incidents near Benin beginning in mid-2012. Shipping grew 12.5% from 2012 to 2013, and 2013 nearly saw as many visits as Benin had in 2010.

Based on the start date of Operation Prosperity (September 2011), the increased patrols executed jointly by Nigeria and Benin effectively put an abrupt stop to the attacks occurring in Benin's waters in 2010 – 2011. Unfortunately, it appears that these attackers merely moved their operations to neighboring Togo, where there was corresponding increase in attacks that began the following year.

Togo shows similar declines, though the drop between 2010 and 2012 was even steeper. Beginning in 2010 with 1,175 port visits to Benin's 1,186, Togo saw a 6.55% decrease in shipping, despite the great share of attacks happening closer to Benin. When pirates shifted to Togolese waters in 2012, the drop in shipping activity was the sharpest in the region. In 2012 port calls fell

Fig 4.10: Port Call Data During the 2011 to 2012 Spike (Number of Port Calls and Change Relative to 2010)

	Benin	Togo	Nigeria
2010	1,186	1,175	4,881
2011	1,121	1,098	5,232
2012	1,026	989	4,837
2013	1,154	1,120	5,369

	Benin	Togo	Nigeria
2010	0.00%	0.00%	0.00%
2011	-5.48%	-6.55%	7.19%
2012	-13.49%	-15.83%	-0.90%
2013	-2.70%	-4.68%	10.00%

Sources: Togo National Shipping Council, Institute for Security Studies, Nigerian Ports Authority.

⁶⁴ Information found on the website of the Togo National Shipping Council. Available online at : CNCT-togo.com/statistiques. Accessed on 21 October 2021.

⁶⁵ Information taken from Institute for Security Studies (ISS) Report, Issue 12/May 2015. "Benin's maritime security challenges in the Gulf of Guinea." Available online at: files.ethz.ch/isn/191904/ECOWAS_12.pdf. Accessed on 21 November 2021.

⁶⁶ Information found on the Nigerian Ports Authority Website. Available online at: nigerianports.gov.ng/ports-statistics/. Accessed on 21 November 2021.

15.83% from 2010 levels. The decline extended into 2013, though there was a modest recovery between 2012 and 2013.

The simultaneous loss of port calls in Benin and Togo while Nigeria saw a clear year-over-year increase in port calls provides some evidence for intra-regional shipping displacement that occurs when traffic shifts toward ports perceived to be safer or less costly in which to operate.

In Nigeria the effects were very different. As piracy was threatening Nigeria's neighbor to the west in 2011, port calls actually grew by 351 visits (7.19%). This happened while Benin and Togo saw 142 fewer port calls, providing some evidence of possible intra-regional displacement. This short-term gain disappeared in 2012 when piracy activity dispersed across the region, extending as far southeast along the Nigerian shore as Port Harcourt. Nigeria is the only country of the three to see more port activity in 2013 than it had in 2010.

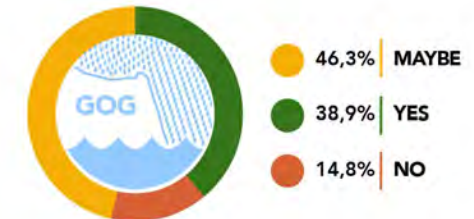
SURVEYING THE PERCEPTIONS OF SHIPPERS

We approach this question from another angle by complementing the macroeconomic analysis with a survey of ship operators and commercial security officers. The survey was sent to the BIMCO and INTERTANKO shipping associations as well as security officials associated with the Marshall Islands Registry. The survey was collected anonymously via Google Forms between 1 October and 15 November 2021. It resulted in 122 industry responses, mostly from representatives of companies currently operating in the region (68, 56%). We also sought the opinions of those not operating in the region so as to better understand the extent to which a reputation for piracy and armed robbery is deterring companies from entering or returning to Gulf of Guinea markets.

A majority of respondents active in the Gulf of Guinea---53%---reported that piracy and armed robbery have directly caused them to decrease the scale of their activities in the region.

Representatives from companies active in the region reported that piracy and armed robbery are significant deterrents to business. Of 68 respondents, 53% said they have decreased their activities, while 3% have increased activity. Many companies mentioned that they are contracted

Fig. 4.11: Would you consider owning, operating, or managing vessels in the Gulf of Guinea if piracy and armed robbery were reduced in the region?



Source: Original Survey, Only asked of respondents who are not operating in the Gulf of Guinea (54 responses).

to provide services so their schedules have not changed, even if their security costs have ballooned. 44% reported no significant change in the scale of their regional business activities.

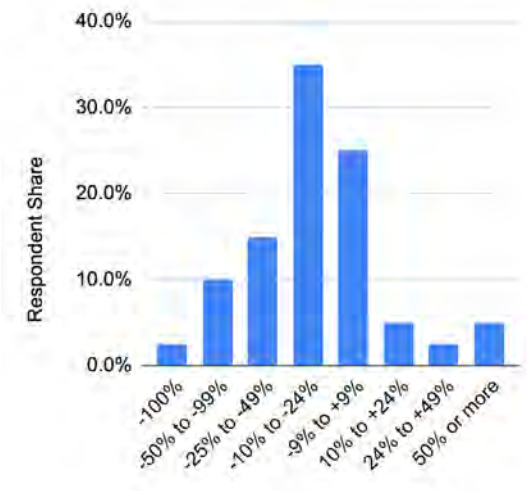
Next, we asked respondents to quantify the size of the change in their activities (Figure 4.12). Here, the modal response was -10%, and around one-third of respondents reported decreases even greater than that. The share reporting no changes was smaller than respondents identified in the previous question (44% versus 25%). 28 people skipped this open-ended question and a large share of these non-respondents had answered that there was no significant change in the previous question.

Fig. 4.13: Map of Ports, Port Data Sources, and Yaoundé Architecture Zones



Source: Stable Seas, Google MyMaps. From northwest to southeast, examined ports are Abidjan, Takoradi, Tema, Lomé, Cotonou, Lagos, Western Delta/Bayelsa, Rivers State/Port Harcourt, Eastern Delta/Calabar, Douala, Kribi, Malabo, Bata, São Tomé, Libreville, Port Gentil, Pointe-Noire, Cabinda, Congo River ports (DRC), Luanda, and Benguela.

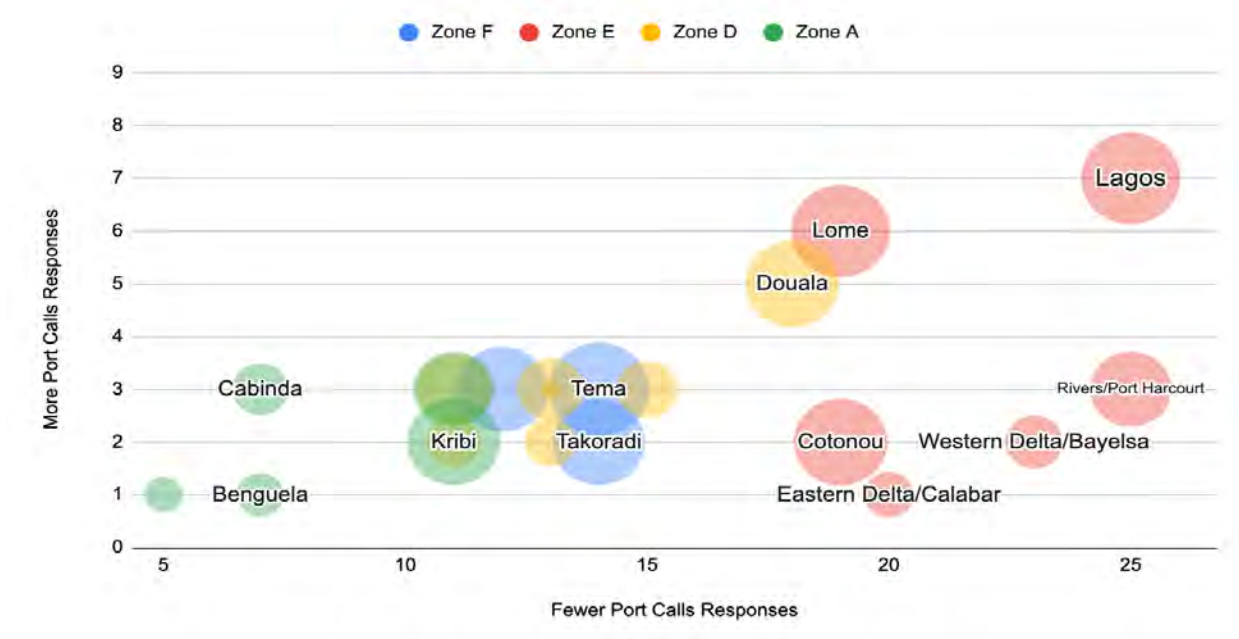
Fig. 4.12: Self-Reported Scale of Change in Activities Due to Piracy Threat



Source: Original Survey

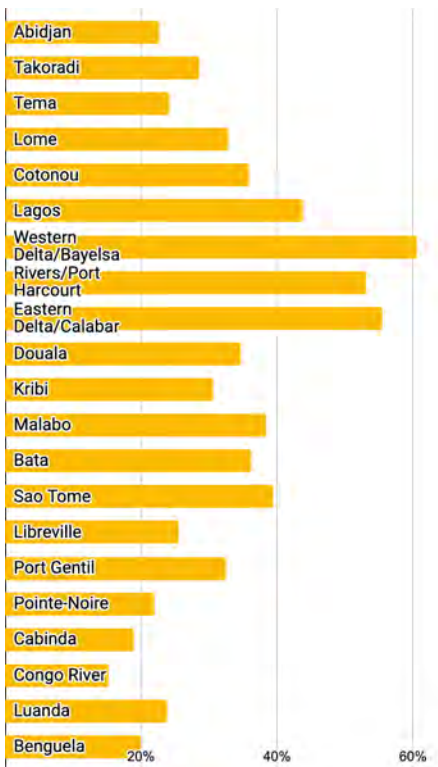
Responses vary based on the areas where companies are active. Figure 4.15 shows that the Zone E ports like Lagos and Port Harcourt have a large share of users saying piracy threats have reduced their activity there. However, some of the larger ports in that area like Lagos, Lomé, and Douala also have a relatively high number of companies saying they use these ports more due to piracy threats. These positive responses corroborate findings from the last section on intra-regional shipping displacement. While the impacts are generally very negative in Niger Delta ports, part of the loss in activity in Lagos, Lomé, and other ports near the delta is also offset by shippers who say piracy is causing them to divert some traffic into these ports.

Fig. 4.15: Self-Reported Piracy-Driven Changes in Port Activity, By Port Popularity and Yaoundé Architecture Zone



Note: Bubble size shows the number of respondents saying they use the ports, with the most-frequented ports like Lagos having the largest bubbles. Color indicates each port's Yaoundé Architecture zone (see Chapter 3), with Zone E ports being the busiest and most negatively affected and Zone A ports being among the least busy among these shippers and least impacted. Source: Original Survey

Fig. 4.14: Share of Operators Saying Piracy Threat Has Decreased Port Calls



Ports listed northwest to southeast. Source: Original Survey

Survey respondents show that they were most likely to reduce activity in Nigerian ports, with small ports to the south such as Malabo and Bata following closely behind.

WHAT IS DECLINING PORT TRAFFIC COSTING STATES?

Each ship visit can generate significant revenue for the coastal state. Some countries, such as Benin, count on the charges associated with port fees and customs revenue as the Port of Cotonou is responsible for up to 70% of the national gross domestic product and 80% of national fiscal revenue.⁶⁷ This revenue can include tonnage dues, lighthouse dues, dock fees, anchorage dues, canal dues, berth dues, pilotage, river dues, tugboat fees, customs duties, sanitation dues, and freight dues.

For the purposes of this study we have averaged the port fees based on information published by the Nigerian Ports Authority (NPA) on port costs⁶⁸ and taken an average across three countries for an average-sized ship as indicated in the table below. The NPA commissioned Crown Agents to conduct the study to investigate comparative charges at other ports in West Africa.

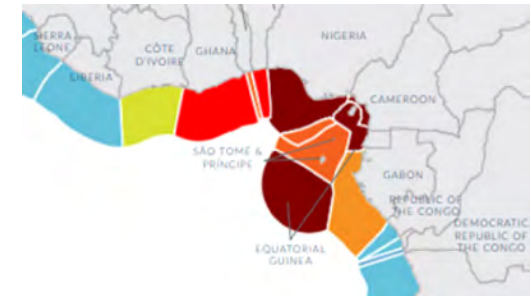
Figure 4.17: Port Fees per Vessel per the Nigerian Ports Authority

Country	Type Vessel	Size (Notional)	Associated Port Fees
Nigeria	General Cargo	26,770	\$94,577
	Container	39,906	\$108,807
Ghana	General Cargo	26,770	\$217,879
	Container	39,906	\$117,907
Togo	General Cargo	26,770	\$120,358
	Container	39,906	\$128,407
Average Vessel Charges			\$113,637

Source: Nigerian Ports Authority, 2020.

Port fees vary, as does the quality of port call data, but combining these data with the port data described above offers one approximation of the considerable indirect costs of piracy to the Gulf of Guinea nations via lost port revenue. If piracy is reducing shipping traffic by 10%---a number

Fig. 4.16: Relative Piracy Risk in the Gulf of Guinea by Country (Stable Seas Maritime Security Index)



Studies by two NGOs, the Centre for Maritime Law and Security (CEMLAWS) and Stable Seas, identify Zone E (Nigeria, Benin and Togo) and Zone D (Gabon, Equatorial Guinea, São Tomé and Príncipe and Cameroon) as the highest-risk areas for piracy.

⁶⁷ United Nations, Security Council, Report of the United Nations assessment mission on piracy in the Gulf of Guinea (7 to 24 November 2011. S/2012/45(19 January 2012), available from: <https://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/AUUN%20S%202012%2045.pdf>, Accessed on 15 October 2021

⁶⁸ Anager, Amaka, Nigerian Port Charges Not Highest in West Africa, says NPA. Business Day, 20 May 2020. Available online: <https://businessday.ng/maritime/article/nigerian-port-charges-not-highest-in-west-africa-says-npa/>. Accessed on 11 October 2021.

that roughly matches what was observed in Benin and Togo (2010 - 2012) and is further supported by the survey data presented above---then Gulf of Guinea countries have lost hundreds of millions of dollars in port fees alone. Generating a specific estimate of total lost costs would be speculative, given the complexity of international shipping and the existence of countless omitted influences. We can combine the data we have above to generate a number that illustrates the scale of the problem, even if we cannot go so far as to call it a robust assessment of this unknown indirect cost.

Fig. 4.18: Lost Port Revenue, 2010-2020, Using Two Estimation Methods

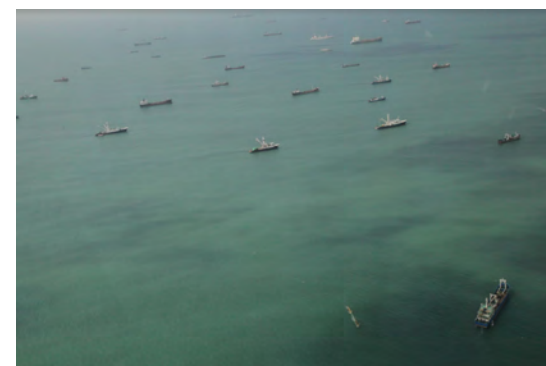
	Large Vessels	Port Fees (\$m)	Universal 10% Deterrent (High)			Port-Scaled Deterrent (Low)		
			Multiplier	Lost Port Calls	Lost Revenue (\$m)	Multiplier	Lost Port Calls	Lost Revenue (\$m)
Abidjan	15,427	\$0.113	10%	1,714	\$193.7	2%	315	\$35.6
Tema	16,568	\$0.113	10%	1,841	\$208.0	2%	338	\$38.2
Lome	11,252	\$0.113	10%	1,250	\$141.3	5%	592	\$66.9
Cotonou	8,154	\$0.113	10%	906	\$102.4	10%	906	\$102.4
Lagos	40,176	\$0.113	10%	4,464	\$504.4	10%	4,464	\$504.4
Douala	8,490	\$0.113	10%	943	\$106.6	5%	447	\$50.5
Pointe-Noire	5,753	\$0.113	10%	639	\$72.2	2%	117	\$13.3
Luanda	9,775	\$0.113	10%	1,086	\$122.7	2%	199	\$22.5
8-Port Total	115,595			12,844	\$1,451.4		7,379	\$833.8
Region Est.					\$2,166.2			\$1,244.5
Midpoint							\$1,705.4	

These ports carry about two-thirds of regional port traffic. Extrapolating from these estimates results in a region-wide estimate of \$1.24 to \$2.17 billion in total lost revenue from 2010 to 2020, with a midpoint estimate of \$1.71 billion.

The survey offers two strategies for us to approximate how many port calls the region may have missed due to the threat of piracy. First, one simple multiplier is provided by the survey question graphed above in Figure 4.12. Responses to the question about how activity has decreased due to piracy averaged -10%, and this is probably a conservative estimate given that it does not capture all of the companies that are not working in the region at all due to piracy threats. If the port visits recorded by vessel tracker are only 90% what they would have been without the



Port Harcourt, Nigeria. Source: Delondiny I Panoramio. Flickr



Source: Ghana Maritime Authority

These ports carry about two-thirds of regional port traffic. Extrapolating from these estimates results in a region-wide estimate of \$1.24 to \$2.17 billion in total lost revenue from 2010 to 2020, with a midpoint estimate of \$1.71 billion.

threat of piracy, then these eight ports have combined for 12,844 missed port calls from 2010 to 2020, with associated lost port fees of \$1.45 billion.

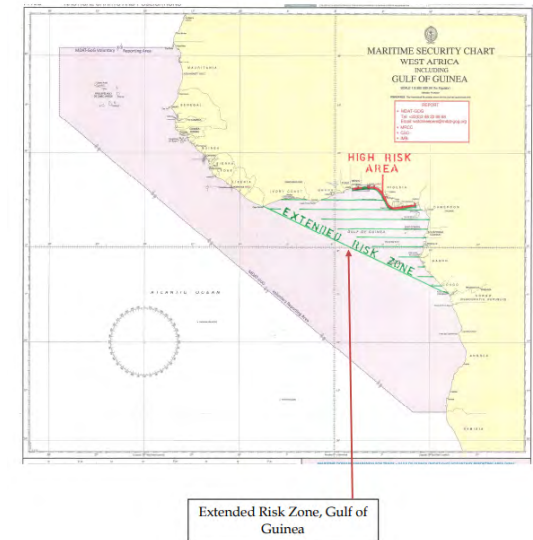
But it is unlikely that shippers are deterred universally across the region. Indeed, respondents show that they were much more likely to withdraw from ports close to piracy hotspots. If we allow for this deterrent to vary by port as indicated by the survey responses, then a port-scaled deterrent method will produce a much lower estimate of missing port fees. This is displayed in Figure 4.14. Using this approach, we estimate 7,379 missing port calls equal to roughly \$1.24 billion in missing revenue.

The indirect costs created by piracy threats and imposed antipiracy security costs are substantial. The hundreds of millions of dollars per year paid by the global shipping sector is likely enough to cost the region billions of dollars of lost trade and government revenue.

This is likely to be a conservative estimate, as many survey respondents reported that they have not entered the Gulf of Guinea market at all due to the threat of piracy. The designated Risk Areas that are designed to protect seafarers appear to figure into the risk calculations by shippers. There were numerous comments related to seafarer welfare, and 51% of the survey participants indicated that they were paying increased labor costs for shipping in the region. The High Risk and Extended Risk Areas for the Gulf of Guinea that formalize seafarer rights in these areas are having an increasingly significant impact for shippers attempting to operate in the Gulf of Guinea, particularly the conditions that allows seafarers the right of refusal to sail in the IBF listed areas and to be repatriated at the company's expense. In another concerning development, the Indian Director General for Shipping has issued a policy limiting the recruiting and hiring of Indian seafarers on board coastal vessels in the Gulf of Guinea.⁶⁹

Finally, the establishment of the Voluntary Reporting Area (VRA) and reporting framework under MDAT-GoG can have impacts on shipping traffic because of its immediate reports of piracy incidents or warnings of increased threat levels. While these warnings do not specifically recommend rerouting around hazards, they do recommend that “mariners exercise extreme caution” in designated areas which may have the effect of altering transit patterns.

Fig. 4.19: The IBF High Risk and Extended Risk Zones



Source: International Transportation Workers Website.

Sweeping region-wide changes, such as the creation of the Extended Risk Zone and the adoption of the Yaoundé Architecture, can create a reputation for piracy over a vast maritime region, even if the highest risk is very localized. This makes the costs of piracy more diffuse.

⁶⁹ “Indian Bans Seafarers from Gulf of Guinea.” Nautilus International, 27 June 2019. Available Online: <https://www.nautilusint.org/en/news-insight/news/india-bans-seafarers-from-gulf-of-guinea/>. Accessed 1 November 2021.

THE MISSING BILLIONS

These costs, though substantial, are minimal compared to the value of the international trade that the region loses when shipping companies are deterred from doing business in the Gulf of Guinea. Beyond the immediate costs of security escorts and missing port fees, governments are losing valuable port revenue and communities reaching far into the African interior are seeing the indirect costs of expensive, inefficient, and insecure, maritime transportation.

We can get an idea of the scale of these costs by examining what piracy may be costing the region in customs tariffs on imports alone. The World Bank's World Integrated Trade Solutions (WITS) Database⁷⁰ provides information that can be used to estimate a regional Simple Average Tariff for the region. Looking at Benin, Togo, Ghana, Angola, and Côte d'Ivoire, we see an average tariff of 11.32%. The African Union Handbook for Trade estimates the total value of West and Central African imports to be up to \$150 billion per year, with 80% of those imports arriving via the sea.⁷¹ If maritime trade could be 10% higher, this would equate to lost tariff revenue of perhaps \$1.2 billion per year.

These estimates are admittedly crude, but they are not out of line with other estimation methods. For example, in a foundational study of piracy off the coast of Somalia, the World Bank estimated the total economic impact of piracy to be roughly 1% of the value of goods transiting through the region. This same method, applied to the Gulf of Guinea, would produce a value on maritime imports of around \$1.1 billion per year.⁷²

But more important than the specific method, these crude estimates illustrate that the downstream and indirect impacts of piracy are far more costly than the ransoms and loot that pirates collect. The analysis also shows that counterpiracy measures, which have been broadly applied across a vast geography, are imposing costs even where piracy and armed robbery is incredibly rare. In this way, both the problem and its responses have been regionalized and diffused. Though the human and economic costs are certainly concentrated near the Niger Delta, costs to shipping have far-reaching effects.

Fig. 4.20: Average Tariff Rates for Selected Gulf of Guinea Countries

Country	Average Tariff
Benin	11.67%
Togo	11.83%
Ghana	12.44%
Côte D'Ivoire	12.13%
Angola	8.54%
Average	11.32%

Source: WITS Database

Fig. 4.21: Lost Import Customs Estimates

Year	Imports: West Africa	Imports: Central Africa	Lost Maritime Traffic	Potential Lost Revenue
2013	\$109,597	\$35,900	\$11,640	\$1.21 Billion
2014	\$110,178	\$44,643	\$12,386	\$1.40 Billion
2015	\$90,598	\$78,001	\$13,488	\$1.53 Billion
2016	\$88,009	\$31,316	\$9,546	\$1.08 Billion
2017	\$87,680	\$19,948	\$8,610	\$0.97 Billion
2018	\$105,793	\$20,852	\$10,132	\$1.15 Billion
2019	\$113,070	\$20,938	\$10,721	\$1.21 Billion
Total				\$8.55 Billion

Source: African Trade Statistics Yearbook

⁷⁰ World Integrated Trade Solution Webpage. Trade Summary Data. Available online: <https://wits.worldbank.org/> Accessed on 15 November 2021

⁷¹ African Union, African Trade Statistics 2020 Yearbook. https://au.int/sites/default/files/documents/39607-doc-af-trade_yearbook2020_v4_comp-compresses_1.pdf. Accessed 9 November 2021.

⁷² "World Bank. 2013. The Pirates of Somalia : Ending the Threat, Rebuilding a Nation. Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/16518> License: CC BY-NC-ND 3.0 IGO."

5 COSTS TO FISHING

Piracy and armed robbery impose direct, indirect, and opportunity costs on fishers in the Gulf of Guinea. Too often, commercial and artisanal fishers have been the targets of kidnappings, hijackings, and robberies at sea. These costs were quantified in a previous chapter on ransoms and stolen goods. But far more costly is the indirect cost of this threat. In some areas of the region, fishing activity has been reduced as large and productive fishing areas have been closed due to security concerns. Of greater concern is the problem of illegal, unreported, and unregulated (IUU) fishing, which is the costliest of many maritime problems that might receive more attention if not for the pervasive presence of pirates. The naval and political attention to piracy steers attention away from IUU fishing. In doing so, piracy creates a kind of opportunity cost to the region. This chapter describes all of these costs to fishers and illustrates how they matriculate through supply chains and communities to significantly affect livelihoods in coastal West and Central Africa.

Illegal, unreported, and unregulated fishing is the costliest of the many problems that might be addressed were political will and funding not directed toward piracy and armed robbery.

The chapter is divided into several sections. The first covers the socioeconomic importance of fisheries to the Gulf of Guinea. The second explores the direct cost of fisheries crime to the region, focusing on the direct diminishment of incomes and the financial losses of victims. This is followed by a section on more indirect costs due to decreased fishing effort and displacement of fishing effort around targets or pirates and robbers. The final section describes the problem of IUU fishing and argues that attention to piracy creates an opportunity cost because this attention could be redirected to this much more costly problem.

KEY MESSAGES

- Fishers in the Gulf of Guinea---both artisanal and commercial---suffer direct costs from kidnappings, hijackings, and theft. Though the absolute value of these costs are relatively low, they represent major threats to the livelihoods of fishers living in extreme poverty.
- Aggressive counter-piracy measures, including the imposition of curfews and no-fishing zones, has deterred some fishing activity.
- Though fish catches have not decreased due to piracy at the national or regional level, localized effects have created considerable costs for some communities.



Fishing boats congregate in Cape Coast, Ghana.
Image Credit: David Stanley. 2015. Flickr:
<https://www.flickr.com/photos/davidstanleytravel/22046191069>

The impacts of piracy and armed robbery on fisheries in the Gulf of Guinea break down into direct and indirect economic costs and lost opportunity costs.

- The greatest cost of piracy is that it demands attention that could be going toward IUU fishing, which costs the 12 countries in the area of study an estimated \$504 million per year. The “opportunity cost” of focusing on piracy and not fisheries therefore costs African communities and governments greatly.

THE SOCIOECONOMIC IMPORTANCE OF FISHERIES

Marine fisheries play a significant role in the livelihoods of millions of people in the Gulf of Guinea region as a source of both food and income. Fish contributes up to 80% of animal protein consumed in coastal states throughout the region.⁷³ In West Africa, over 9 million people rely on fisheries directly or indirectly for employment.⁷⁴ A separate estimate, found that, in Nigeria alone, the fisheries sector employs over 8.6 million people directly and a further 19.6 million indirectly, 70 percent of whom are women.⁷⁵

The significance of fisheries is captured by this quote from the president of the Bonny Indigenous Fishermen Association, Bonny Island, Rivers State, Nigeria.

“Fishing is a chain empowerment scheme. It employs a husband as the fisher. He engages his son as an unloader, neighbour as the distributor and wife as the processor and seller. With the earnings, they feed and educate other people within their families. If anything disrupts this process, all the people empowered through this chain suffer.”⁷⁶

The fisheries sector is divided into small-scale and industrial fisheries. Most of the people engaged in fisheries are in the small-scale sector and a vast majority of the fish consumed locally is produced by the small-scale sector. In Ghana small-scale fishing operations contribute 70% of locally produced fish.⁷⁷ Corresponding figures are 80% in Nigeria and Senegal and 90% in the Democratic Republic of Congo (DRC).⁷⁸ In Guinea-Bissau and Liberia, small-scale fisheries



Fishing boats in Limbé, Cameroon. Image Credit: Blaizo 237. 2021. Wiki Commons: https://commons.wikimedia.org/wiki/File:Fishing_boats_Idena_u_cameroon.jpg

The socioeconomic importance of fisheries in the Gulf of Guinea is difficult to overstate. Particularly in coastal communities, artisanal fisheries are a critical source of food security and employment.

The small-scale sector is often called the artisanal sector. We use both terms interchangeably to describe the coastal fishing sector.

⁷³ Hasselberg, Astrid Elise et al. “Fish for Food and Nutrition Security in Ghana : Challenges and Opportunities”. *Global Food Security*, no. 26. September 2019. (2020): 100380. <https://doi.org/10.1016/j.gfs.2020.100380>.

⁷⁴ Health of Mother Earth Foundation. “Threat to Fisheries in the Gulf of Guinea”. 2019. <https://homef.org/wp-content/uploads/2019/12/Threat-to-Fisheries-Policy-Brief.pdf>.

⁷⁵ WorldFish. “WorldFish Nigeria Strategy 2018 - 2022”. 2018. <https://digitalarchive.worldfishcenter.org/bitstream/handle/20.500.12348/673/2018-09.pdf?sequence4=>.

⁷⁶ Excerpt from an Interview with the President of Bonny Indigenous Fishermen Association. Bonny Island, Rivers State, Nigeria. April, 2021. as cited.

⁷⁷ FAO. “Fishery and Aquaculture Country Profiles The Republic of Ghana”. Country Profile Fact Sheets. In: FAO Fisheries and Aquaculture Department. 2016. <http://www.fao.org/fishery/facp/GHA/en>.

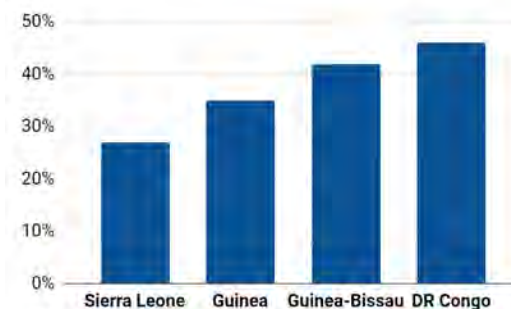
⁷⁸ Cox, Joshua “Assessment Report on Small-Scale Fisheries in Africa.” 2013. http://masifundise.org/wp-content/uploads/2013/01/AU-Report_Africa.pdf.

contribute \$47 million and \$133 million to the economy annually.⁷⁹ Ensuring the sustainable exploitation of fisheries resources will, thus, help meet the Sustainable Development Goals (SDGs) 14, 1, 2, 5, 8 and 10 – sustainable use of the ocean's resources, end to poverty, end to hunger, gender equality, economic growth, and reduced inequality, respectively.⁸⁰

Due to the lack of domestic and regional capacity for large-scale exploitation, the industrial sector in the region is dominated by vessels from distant water fishing nations that have fisheries access agreements – in various forms – with countries in the region or through beneficial ownership – whereby foreign companies operate through local front companies. These arrangements grant subsidised local maritime access to distant water fishing fleets in exchange for a fee that covers their operations, payable to the relevant regional government.⁸¹ The impact of harmful subsidies in enabling the overexploitation of fish stocks is well documented. A recent report by Oceana noted that in Sierra Leone, Guinea, Guinea-Bissau, and the DRC distant water fleets benefit from subsidies which constitute 27%, 35%, 42% and 46% of the total value of catch these fleets bring in respectively. This implies that these distant water fleets would not be profitable without subsidies. These foreign subsidies and the catches by the fleets are greater than domestic subsidies and catches, further suggesting disproportionate impact by the foreign fleets on local resources.⁸²

Despite the benefits accrued from fishing agreements with, or sales of licences to, distant water fishing fleets, there are concerns about the negative impacts of their activities on the sustainability of local livelihoods and food security. Specifically, it aggravates the overexploitation and subsequent depletion of vulnerable fish stocks due to weak fisheries governance, disrupting local markets as a vast majority of the catch by the industrial sector are diverted for exports.⁸³

Fig. 5.1: Fisheries subsidies for foreign fishing fleets operating in select Gulf of Guinea States.



Source: Oceana, “Tracking Harmful Fisheries Subsidies,” vol. 8, 2021, https://oceana.org/sites/default/files/994812/Oceana_Summary6-22.pdf.

⁷⁹ Belhabib, Sumaila, and Pauly, “Feeding the Poor: Contribution of West African Fisheries to Employment and Food Security.” *Ocean & Coastal Management*. Volume 111. July 2015. P 72-81. <https://doi.org/10.1016/j.ocecoaman.2015.04.010>.

⁸⁰ UN, “Global Indicator Framework Adopted by the General Assembly (A/RES/71/313). Annual Refinements Contained in E/CN.3/2018/2 (Annex II), E/CN.3/2019/2 (Annex II), and 2020 Comprehensive Review Changes (Annex II) and Annual Refinements (Annex III) Contained In”. 2016. https://unstats.un.org/sdgs/indicators/GlobalIndicatorFrameworkafter2020review_Eng.pdf.

⁸¹ Belhabib, Dyhia et al. “Euros vs. Yuan: Comparing European and Chinese Fishing Access in West Africa”. *Plos One* 10, no. 3. p 1–22. 2015. <https://doi.org/10.1371/journal.pone.0118351>; Environmental Justice Foundation. “At What Cost? How Ghana Is Losing out in Fishing Arrangements with China’s Distant Water Fleet”. 2021. www.ejfoundation.org; Virdin, John et al., “West Africa’s Coastal Bottom Trawl Fishery: Initial Examination of a Trade in Fishing Services.” *Marine Policy*. Volume 100. p 288-97. 2019.

⁸² Oceana. “Tracking Harmful Fisheries Subsidies”. vol. 8, 2021, https://oceana.org/sites/default/files/994812/Oceana_Summary6-22.pdf.

⁸³ Neiland, Aurthur. “Contribution of Fish Trade to Development, Livelihood and Food Security in West Africa: Key Issues for Future Policy Debate”. 2006. https://www.fao.org/fishery/docs/DOCUMENT/sflp/SFLP_publications/English/fish_trade.pdf#:~:text=For Developing Countries in regions,domestic fisheries in terms of earnings and employment; Graaf, G. & Garibaldi, L. De. “The Value of African Fisheries”. 1093. 2014. http://www.fao.org/3/a-i3917e.pdf.

DIRECT COSTS TO FISHERS

Perhaps the clearest way that piracy impacts fishers in the region is through attacks on fishing vessels. These attacks represent a serious safety and security concern for fishers from a variety of sectors in the Gulf of Guinea.

Fishing vessels in the Gulf of Guinea are directly impacted by piracy and armed robbery in a variety of ways. These essentially break down into three types of incidents: kidnap for ransom, hijacking, and armed robbery. Kidnap for ransom attacks most frequently target foreign fishing vessels as foreign crew members are often thought to garner the highest ransom payments, but, as examples below illustrated, local fishers can also be the targets of kidnap for ransom attacks. In the case of hijacking, the fishing vessel itself is the target. These types of incidents also primarily target commercial fishing vessels, and hijacked fishing vessels have been used in the past as “motherships” in subsequent piracy and armed robbery incidents in the region. Finally, robbery is also a very frequent type of attack impacting all fishing vessels in the region, foreign and local, commercial and artisanal. And while it is helpful to draw distinctions between these differing modes of operation in order to better understand the nature of the threat, it must also be acknowledged that these incident types are not mutually exclusive. Pirate groups may use multiple such strategies in any one incident and groups may flexibly shift their mode of operation based on the opportunities presented.

Three separate groups of fishing vessels are targeted by pirates and armed robbers in the Gulf of Guinea. These include distant water fishing vessels from countries such as China and South Korea (many of which have access agreements with regional countries); Nigerian commercial fishing vessels attacked in the internal waterways and off the coast; and small, artisanal sector fishing boats with outboard motors which operate across the region.

Since 2013, 117 fishermen have been kidnapped from 34 commercial fishing vessels (both local Nigerian and foreign, distant water vessels) off the Gulf of Guinea, with 20 fishermen kidnapped through September in 2021 alone.⁸⁴ In addition to the many local Nigerian commercial trawlers targeted in Nigerian waters, fishermen from distant water vessels have been kidnapped in the waters of Ghana, Cameroon, Nigeria, Gabon, Benin, and Côte d'Ivoire. These attacks impacted both foreign fishers operating in the region (including from China, Greece, Indonesia, Russia, and

Piracy and armed robbery in the Gulf of Guinea can be broken down into three categories: kidnap for ransom, hijacking, and armed robbery.



Fishing boats in Gambia. Image Credit: Ikiwaner. 2008. Wiki Commons:
https://commons.wikimedia.org/wiki/File:Gambian_fishing_boats.jpg

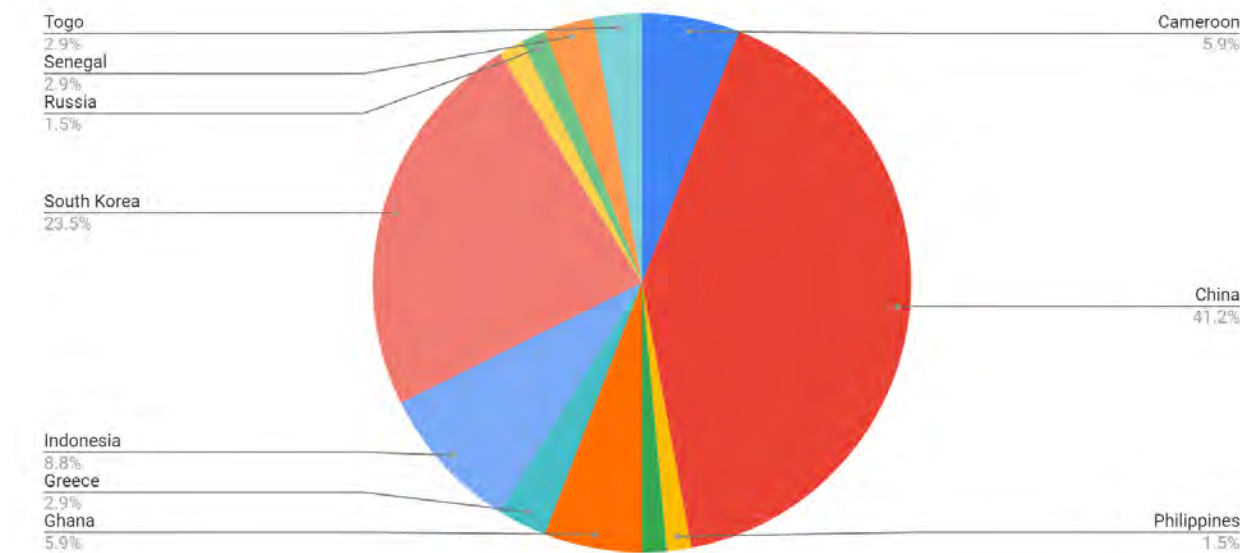
The three categories of fishing vessels targeted by piracy and armed robbery in the Gulf of Guinea include distant water fishing vessels, commercial vessels from regional states, and artisanal fishing vessels.

Because they are perceived to garner higher ransom payments, the foreign officers of distant water fishing vessels are frequently targeted for kidnapping.

⁸⁴ Stable Seas Piracy Database.

South Korea), as well as fishers working as crew on distant water vessels from Gulf of Guinea states (Cameroon, Ghana, Nigeria, Senegal, and Togo),

Fig. 5.2: Nationality of Fishers Kidnapped from Distant Water Fishing Vessels, 2017-2021



Source: Stable Seas Database

Distant water fishing vessels with foreign crew members are the most frequent targets of kidnap for ransom attacks as their foreign crew members are often viewed by pirates as potentially garnering higher ransom payments than local crews. Up to ten crew members are taken at a time, but most often two to three of the crew—the master, chief officer, and engineer.

In addition to this kidnap for ransom model, several hijackings have also been reported. Some of the hijacked fishing vessels were subsequently used as motherships in attacks on other vessels. In May 2020, two Ghanaian flagged commercial fishing vessels were attacked a week apart, one operating in the eastern portion of the Ghanaian EEZ and the other in Benin's waters. In both instances the foreign officers of each vessel (Korean, Russian, Chinese, Filipino) were kidnapped



Image Credit: Max Pixel,
<https://www.maxpixel.net/Boat-Port-Harbour-Industry-Fishing-Trawler-3137451>

While reports demonstrate that artisanal fishers are also targeted for kidnap for ransom attacks (particularly in Nigeria) these incidents are likely significantly underreported, making it difficult to determine the scope of such attacks.

and a small tanker was spotted prior to the attacks which was suspected of potentially being used as a mothership.⁸⁵

While most kidnap for ransom activity targets commercial, and specifically distant water fishing vessels, there have also been instances in which local artisan fishers have been the victims of kidnap attacks as well, particularly in Nigerian waters (see example below). Unfortunately, as these kidnap for ransom attacks on artisanal fishers go largely unreported, it is not possible to reliably estimate the scope of this type of attack, though it is believed to be less common than kidnapping of crews from commercial vessels.

The second major type of piracy and armed robbery incident in the Gulf of Guinea is robbery of vessels, which impacts all three types of fishing vessels in the region to varying degrees.

In general, robbery of distant water fishing vessels is a secondary crime accompanying the primary goal of kidnapping. Pirates may steal belongings from crews and equipment from distant water fishing vessels while conducting a kidnapping, but the number of incidents in which distant water vessels are targeted for robbery without accompanying kidnapping are relatively infrequent.

Looking at Nigerian commercial vessels, robbery has been a significant concern in the recent past, though the targeting of these vessels appears to have become less frequent in recent years. A Nigerian Maritime Administration and Safety Agency (NIMASA) dataset based on piracy distress calls provides a snapshot of the scope of such attacks, recording 58 attacks and failed attacks on fishing vessels in 2013.⁸⁶ These attacks were mainly attacks on three different companies (possibly because they were the only three companies reporting attacks). Some vessels recorded more than one attack over the period. By comparison, a Nigerian Trawlers Owners Association (NITOA) dataset for the same year recorded significantly higher such incidents with 110 attacks. These attacks stretched from Escravos to Calabar, but several attacks were also recorded off Lagos. NITOA recorded the highest number of attacks in 2012 with 140. However, robbery targeting Nigerian commercial vessels seems to have declined significantly in recent years. By 2018, NITOA reported a drastic reduction in the number of attacks on Nigerian fishing vessels⁸⁷ and this type of attack appears relatively infrequent to the current day.

Fig. 5.3: Attacks on Industrial Fishing Vessels, 2012-2020



Source: Stable Seas Database

Robbery impacts all three categories of fishing vessels in the Gulf of Guinea.

The impacts of robbery of artisanal vessels are compounded by the fact that the same individuals and communities are often targeted repeatedly.

⁸⁵ Mustapha, Suleiman. "Pirates on rampage in Gulf of Guinea - Abducts Ghanaian fishing vessel crew". Graphic Online. July 16, 2021. <https://www.graphic.com.gh/news/general-news/pirates-on-rampage-in-gulf-of-guinea-abducts-ghanaian-fishing-vessel-crew.html>.

⁸⁶ Brume, Eruagbere. "Maritime law enforcement in Nigeria: the challenges of combating piracy and armed robbery at sea". November 5, 2017. World Maritime University. https://commons.wmu.se/cgi/viewcontent.cgi?article=1554&context=all_dissertations.

⁸⁷ Joubert, Lydelle. "The State of Maritime Piracy 2018". Stable Seas. 2019. <https://www.stableseas.org/post/state-of-maritime-piracy-2018>.

In addition to both foreign and domestic commercial vessels, artisanal fisheries in the region are also directly impacted. While the complete scope of such attacks likely goes unreported, a few examples highlight the risk posed to artisanal fishers in the region.

Since 2014, attacks on small fishing boats have been reported in Akwa Ibom state waterways in Nigeria. Boat engines, nets, fish, and cash have been stolen. In September 2021 three Ghanaians and a Nigerian national were kidnapped from the Ibaka area of Akwa Ibom. It was reported that a ransom of N3.6 million (\$8,760) was paid for their release.⁸⁸ Several other kidnappings and theft of outboard engines were also reported in recent months and the community says that it has lost more than one hundred boat engines.⁸⁹

Another fisher interviewed from the Brass Local Government area of Bayelsa State described a situation in which the theft of boats and engines from artisanal fishers was occurring on a very regular basis, sometimes multiple times a week. Pirate groups would seize boats and engines and demand payments between 1.5 million to 2 million Naira (\$3,650 to \$4,870) for their return. When meeting with the perpetrators, those going to make the payment were sometimes assaulted or kidnapped with an additional ransom demand made.⁹⁰

As Nigeria has increased security measures further out to sea, some believe pirates have increasingly targeted artisanal fishers and other local maritime industries, their vessels, and engines. This has created significant frustration with the government's security response. The Head of the Maritime Workers Union in Bayelsa state described this frustration:

“If they have spent the money and the gunboats are there and the security men are there we will see it. Their focus is on the oil facilities. They are not guiding anywhere except the oil facilities. Apart from the few military personnel on board those offshore facilities, there are hardly any security protecting the ordinary people.”⁹¹



The Niger Delta. Image Credit: eutrophication&hypoxia. 2011. Flickr: <https://www.flickr.com/photos/48722974@N07/5375583578>

Some believe pirates have increasingly targeted artisanal fishers and other local maritime industries, their vessels, and engines.

⁸⁸ The Nation. “Akwa Ibom Fishermen Protest Abduction by Pirates”. October 5, 2021. <https://thenationonlineng.net/akwa-ibom-fishermen-protest-abduction-by-pirates/>.

⁸⁹ Anthony, Lovina. “Our seas no longer safe – Akwa Ibom fishermen cry to Buhari, security agencies”. Daily Post. October 4, 2021. <https://dailypost.ng/2021/10/04/our-seas-no-longer-safe-akwa-ibom-fishermen-cry-to-buhari-security-agencies/>.

⁹⁰ Interview with fisherman. Brass Local Government Area. 2021.

⁹¹ Interview with Head of the Maritime Workers Union. Bayelsa State. 2021.

The targeting of artisanal fishers is not an exclusively Nigerian phenomenon. For example, in August 2021 robberies of engines, nets, and fish were also reported off Luanda, Angola. According to the president of the Association of Artisanal, Semi-Industrial and Industrial Fishing of Luanda, Manuel Bernardo Azevedo, ten such incidents were reported in 2021. It is likely that the same group of robbers are responsible for these incidents in Angola. The cost of these engines was between 4.5 and 5 million Kwanzas (\$7,500 to \$8,400).⁹²

While such costs are obviously incomparable in scale to the kinds of costs associated with shifting shipping patterns and naval procurement, they are no less costly to the individuals affected. 71% of Nigerians live on less than \$3.20 a day⁹³ and GDP per capita in Bayelsa state, one of the areas heavily impacted by such activity, was calculated at \$2,484 USD annually.⁹⁴ Therefore the cost of these ransoms or the purchase of replacement engines can be a tremendous financial burden, representing multiple years of earnings at an average income. This burden is magnified by the fact that these thefts and extortions are often impacting the same communities and individuals repeatedly over a period of many years. According to a businessman working in maritime transportation in the Niger Delta:

“Since I started this business [in 2000], as an individual businessman I have lost 40 pieces of 75 horsepower engines. 40 speedboats gone. Then when we come to 115HP I have lost more than 10. When we come to 200HP I have lost 6. As an individual. For me being in this business... look at the boats they have collected from me... Now when they are taking this boat from you how can you survive? It is a life and death situation.”⁹⁵

For small vessel operators in the areas impacted, be they artisanal fishers, traders, or maritime transportation operators, maritime robbery, extortion, and kidnap can have devastating financial ramifications from the loss of their livelihoods. While limited reporting means that an exact sum of the total number of fishers impacted is not possible, the human cost is clear. All of these incidents can involve severe violence, resulting in injury, emotional trauma, and, in some instances, death.



Nigerian Navy receives delivery of former U.S. Coast Guard cutter. 2014. Image Credit: Coast Guard News. Flickr: <https://www.flickr.com/photos/coastguardnews/13947275590>

The cost of these ransoms or the purchase of replacement engines can be a tremendous financial burden, representing multiple years of earnings at an average income.

⁹² LUSA. “Pescadores Angolanos Denunciam Assaltos à mão Armada em Alto Mar em Luanda”. August 30, 2021.

<https://www.lusa.pt/lusofonia/angola/article/2021-08-30/34224416/pescadores-angolanos-denunciam-assaltos-%C3%A0-m%C3%A3o-armada-em-alto-mar-em-luanda>.

⁹³ Stephen Onyeiwu. “Nigeria’s poverty profile is grim. It’s time to move beyond handouts”. The Conversation. June 27, 2021.

<https://theconversation.com/nigerias-poverty-profile-is-grim-its-time-to-move-beyond-handouts-163302#:~:text=Although%20Nigeria's%20poverty%20profile%20for,Nigeria's%20poverty%20rate%20is%2071%25>.

⁹⁴ Nigerian National Bureau of Statistics. Open Data Portal. “Bayelsa”. Accessed November 11, 2020, <https://nigeria.opendataforafrica.org/apps/atlas/Bayelsa>.

⁹⁵ Interview with Head of the Maritime Workers Union. Bayelsa State. 2021.

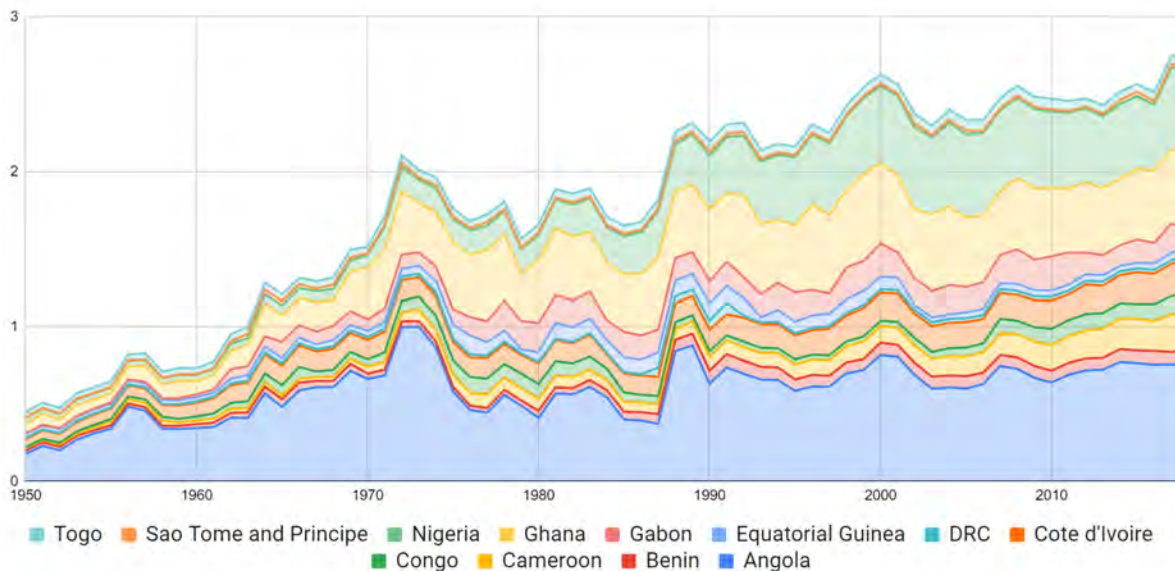
This collective experience also creates indirect costs by changing fishers' behavior and forcing them to work around counter-piracy measures.

INDIRECT COSTS TO FISHERS

The mere threat of piracy has the potential to reduce fishing opportunities via two different mechanisms.

In the first, the threat of falling victim to piracy and armed robbery deters fishers from going out to sea. In relation to the scope of the overall fisheries economy in the Gulf of Guinea, this is estimated to have relatively limited impact on fishing activity. However, in some localities these costs are concentrated and significant.

Fig. 5.4: Total Catch in Tons for 12 African Countries, 1950-2018



Source: Sea Around Us

National-level statistics show that overall catch in the region has not been reduced due to the risk of piracy and armed robbery. In the years between 1990 and 2018 (the last year for which data is



Fishing boat in Cabo Ledo, Angola. Image Credit: Felipe Miguel. Wiki Commons: https://commons.wikimedia.org/wiki/File:Fishing_boat_in_Cabo_Ledo,_Angola.jpg

The threat of piracy and armed robbery in the region can reduce fishing opportunities by both deterring fishers from going to sea and spurring security measures which limit fishing activity.

available) global fish catch increased 14%. However, West and Central Africa saw fisheries production grow by 26%, nearly double the global rate over the same period. What's more, the Gulf of Guinea states which are most proximate to the piracy threat (Benin, Togo, Nigeria, Cameroon, and São Tomé & Príncipe) saw an even higher combined increase of 59%.⁹⁶ This rapid growth in fisheries harvest in those states most impacted by the risk of piracy would seem to undermine any potential link between the risk of piracy and an aggregate reduction in fishing effort in the region.

However, this should not negate the fact that fear of piracy, in certain locations and timeframes, does appear to have contributed to reductions in fishing opportunities, with significant socioeconomic ramifications.

The extent to which piracy influences the operations of distant water fishing fleets remains unclear. While in some states, at some times, distant water fleets appear to have reduced their fishing activity in piracy-prone countries, others have continued their operations and even sought new agreements in piracy-prone countries. For example, in Benin, fisheries and maritime administration officials attributed the reduction in the number of tuna vessels operating in its exclusive economic zone (EEZ), from 20 in 2020 to fewer than five in 2021, to an increase in attacks in its EEZ.⁹⁷ On the other hand, distant water fleets from Asia continue to seek new fishing license agreements with some countries increasingly affected by piracy, such as Ghana.⁹⁸ The same can be said with fleets from Europe extending or entering into new agreements with countries like Gabon and São Tomé and Príncipe,⁹⁹ which have registered more piracy and armed robbery at sea incidents in recent times. Overall, it does not appear that this risk of piracy and armed robbery has led to any significant or sustained reduction in fishing effort by the distant water fleets.

However, piracy activity may have geographically and temporally discrete impacts on local commercial fishing vessels. The one such notable case was a significant reduction in fishing activity that occurred among Nigerian commercial vessels that corresponded with a spike in piracy and armed robbery incidents.

Between 1990 and 2018, fisheries production in West and Central Africa grew at nearly twice the global rate. Those states most impacted by piracy and armed robbery actually saw fisheries production grow at more than four times the global rate over the same period.

The extent to which piracy influences the operations of distant water fishing fleets remains unclear. While in some states, at some times, distant water fleets appear to have reduced their fishing activity in piracy-prone countries, others have continued their operations and even sought new agreements in piracy-prone countries.

⁹⁶ University of British Columbia- Sea Around Us. Accessed September, 2021. <https://www.seaaroundus.org/>.

⁹⁷ Interview with a personnel of maritime administration department, and corroborated by a fisheries department personnel in Benin.

⁹⁸ Business Day. "Ghana registers more foreign trawlers as its fisheries teeter on brink of collapse". May 29, 2020.

<http://businessdayghana.com/ghana-registers-more-foreign-trawlers-as-its-fisheries-teeter-on-brink-of-collapse/>.

⁹⁹ European Commission. "Sustainable fisheries partnership agreements (SFPAs)". Accessed November 1, 2021.

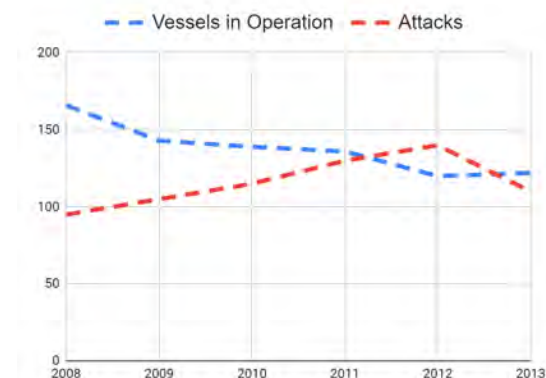
https://ec.europa.eu/oceans-and-fisheries/fisheries/international-agreements/sustainable-fisheries-partnership-agreements-sfpas_en.

According to the Nigerian Trawler Owners' Association (NITOA), attacks on Nigerian commercial fishing vessels increased steadily from 95 in 2008 to 140 by 2012. Attacks on these vessels over this period resulted in 51 fatalities. This corresponded with a steady decline in the number of Nigerian commercial fishing vessels in operation. By 2013 only eight in 40 Nigerian commercial fishing companies had continued their operations, representing 122 out of the country's 250 registered fishing trawlers. NITOA attributed this reduction to the risk of piracy and armed robbery and estimated subsequent financial losses due to piracy and armed robbery on trawlers had reached 4.5 billion Naira (\$28 million¹⁰⁰) annually by 2012.¹⁰¹ In 2016 there was further evidence that piracy activity continued to restrain the operations of the Nigerian commercial fleet, with NITOA noting that one-third of registered trawlers were docked due to the risk of piracy and armed robbery.¹⁰² However, these attacks on Nigerian commercial fishing vessels, and any subsequent impacts on fishing activity and associated financial losses, appear to have been dramatically reduced in recent years. According to NITOA there was a "drastic reduction" in attacks on Nigerian trawlers by 2018,¹⁰³ and subsequent years appear to have seen a dramatically safer operating environment for domestic commercial fishing vessels in Nigerian waters.

In addition to these local commercial vessels, there is some anecdotal evidence that the risk of piracy and armed robbery has deterred local artisanal fishers from going to sea as well. Indications of this are largely from communities in the Niger Delta. One fisher from Bayelsa State described a sense of fear among local artisanal fishers that kept them from going to sea,¹⁰⁴ and further described the socioeconomic impacts of the current climate of fear, saying that for many fishers this lost opportunity is leading to their inability to pay debts on the purchase of boats and engines. Another community leader in another part of the Delta (Akwa Ibom state) described the community level impacts of the risk piracy and armed robbery poses to local fishers, saying:

"We want the whole world to know that we are dying, we are always afraid of the unknown when you go to the beach, you will see over a Hundred boats aground, these boats can carry over thirty persons and since we have not been going to work over a thousand persons have been rendered jobless making

Fig. 5.5: Impacts of Attacks on Nigerian Trawler Operations



Source: The Nigerian Trawler Owners Association

In more recent years there appears to be a significantly safer operating environment for Nigerian trawlers.

Repeated engine theft can have ripple effects across fishing communities, undermining the economic security not only of fishers themselves, but those employed in processing and selling the catch.

¹⁰⁰ Contemporary exchange rate. At present exchange rates, this conversion would be equivalent to around \$11 million.

¹⁰¹ Ambrose, E & Nwaka, S, "Effects of Sea Piracy Insurgent On Nigerian Fishing Industry". Report and Opinion. 2017. <http://www.sciencepub.net/report>.

¹⁰² Okafor-Yarwood, Ifesinachi. "The Cyclical Nature of Maritime Security Threats: Illegal, Unreported and Unregulated Fishing as a Threat to Human and National Security in the Gulf of Guinea". African Security. Volume 13, no. 2. p 116–46. 2020. <https://doi.org/https://doi.org/10.1080/19392206.2020.1724432>.

¹⁰³ Joubert, Lydelle. "The State of Maritime Piracy". Stable Seas, July 17, 2019. <https://www.stableseas.org/post/state-of-maritime-piracy-2018>.

¹⁰⁴ Interview with fisherman from Brass Local Government Area, 2021

criminality and armed robbery to become the order of the day because an idle mind is a devil's workshop.”¹⁰⁵

This highlights not only the indirect impacts of the reduction of an economic activity that is critical, not only to fishers themselves, but others such as processors and traders reliant on fishing, but also that the loss of employment can feed into a vicious cycle in which the unemployed turn to maritime crime themselves in search of their livelihood.

In the end, it is difficult to ascertain the overall scope of the potential impacts the risk of piracy and armed robbery may have on artisanal fishing effort. Many such fishers may feel the acute sense of risk, but simply have no other option than to go out despite the risk in order to make ends meet.¹⁰⁶

Fear among fishers is not the only reason for localized decreases in fishing effort. Due to the risk of piracy and armed robbery, several states have enacted policies which limit the access to certain maritime areas and or impose restrictions on the freedom of movement in the maritime space.

One such example of this is Cameroon's imposition of security zones around sensitive maritime areas. This policy reportedly includes the enforcement of closed areas ranging from three nautical miles around offshore hydrocarbon exploration platforms and seven nautical miles around onshore oil and gas infrastructure.¹⁰⁷ If artisanal fishers enter these areas they can be detained and harassed by Cameroonian naval and maritime law enforcement forces. While this may be a prudent security measure for reducing the risk to these economically important investments, it also significantly reduces and segments the areas available for artisanal fishers to access. This loss of access is only made worse by the fact that Cameroonian security forces reportedly do not enforce such restrictions on distant water fishing vessels as they do not consider them a security concern.¹⁰⁸

“We are fishermen. Our main occupation is fishing. Right now, even the local fishermen can no longer go to fishing. People are scared of going to fishing. The community is losing a lot.”



A Cameroonian Woman processes fish in the fishing village of Youpwe. Image Credit: Jean-Pierre Larroque, One Earth Future.

¹⁰⁵ Anthony, Lovina. “Our seas no longer safe – Akwa Ibom fishermen cry to Buhari, security agencies”. Daily Post. October 4, 2021.

<https://dailypost.ng/2021/10/04/our-seas-no-longer-safe-akwa-ibom-fishermen-cry-to-buhari-security-agencies/>.

¹⁰⁶ Focus group discussion with fisherfolk in Whuti (Anloga District), and Vodza (Keta Municipal) in the Volta Region, Ghana, July 2021. Similar views were shared by fisherfolk in Cotonou at a focus group conducted in August 2021.

¹⁰⁷ Beseng, Maurice. “Cameroon Can’t Afford to Continue Ignoring Crime in Fisheries Sector”. The Conversation. October 6, 2019.

<https://theconversation.com/cameroon-cant-afford-to-continue-ignoring-crime-in-fisheries-sector-124519>.

¹⁰⁸ Interview with Dr. Maurice Beseng. September 2021.

Similar restrictions are also seen in several other states in the region. In Ghana, a ban on fishing within 500m of oil rigs limits the activities of artisanal fishers as it reduces their traditional fishing grounds. The fishers are in turn drawn to these areas because the lighting systems of the oil rigs attract fish, but they are unable to operate there.¹⁰⁹ Such restrictions also exist in Nigeria, as areas that were once available to fishers are now made off-limits, having been identified as safety zones to protect oil infrastructure. These restrictions limit the opportunities available in coastal areas and contribute to driving them further at sea in the face of depleting fish stock.¹¹⁰

Another kind of security measure which impacts the operations of fishers is the imposition of curfews on the water. One recent example of this is a dusk to dawn curfew and the banning of 200 horsepower motors or above on all waterways, which was announced in Bayelsa state in October 2021.¹¹¹ Similar curfews have also been put in place in Togo.¹¹² While fishing effort by time of day varies, as many artisanal fishers operate at night, this could have significant impacts on fishing opportunity.¹¹³ In addition, while the motor restrictions are unlikely to impact artisanal fishers, during a similar ban on such engines in 2016, operators of local maritime passenger transportation businesses were severely impacted.¹¹⁴

All of the efforts above are laudable in their goals of protecting against piracy and armed robbery, but their impacts on fishers and the broader maritime economy also need to be taken into account. If restrictions limit fishing opportunities to the point that they generate further unemployment in coastal communities they have the potential to further contribute to a vicious cycle of maritime insecurity, potentially proving counterproductive in combating piracy and armed robbery in the long term.

States in the Gulf of Guinea have put in place security measures to counter piracy which limit the access and freedom of movement of artisanal fishers. Some have argued that these restrictions affect local fishers more, since distant water vessels are not considered a threat.

Security measures to mitigate the risk of piracy are laudable but they must also take into account impacts on local livelihoods of piracy is to be sustainably addressed.



Riverine transportation in Lagos State, Nigeria. 2020. Image Credit: Uchenna Ezeja. Wiki Commons:

https://commons.wikimedia.org/wiki/File:Uchenna_Patrick_Ezeja_1.jpg

¹⁰⁹ Owusu, B. "Understanding the conflict between the oil and gas industries and small-scale fisheries in the Western region of Ghana". p 5. Memorial University of Newfoundland. 2018. <https://research.library.mun.ca/13190/>.

¹¹⁰ See: Okafor-Yarwood, Ifesinachi. "The Cyclical Nature of Maritime Security Threats: Illegal, Unreported and Unregulated Fishing as a Threat to Human and National Security in the Gulf of Guinea". *African Security*. Volume 13. no. 2. p 116-146. 2020. <https://doi.org/https://doi.org/10.1080/19392206.2020.1724432>; Andrews, Nathan et al. "Oil, Fisheries and Coastal Communities: A Review of Impacts on the Environment, Livelihoods, Space and Governance". *Energy Research and Social Science*. No. 75. 2021. <https://doi.org/10.1016/j.erss.2021.102009>.

¹¹¹ Olafusi, Ebunoluwa. "Insecurity: Bayelsa imposes dusk-to-dawn curfew on waterways". *The Cable*. October 19, 2021. <https://www.thecable.ng/insecurity-bayelsa-imposes-dusk-to-dawn-curfew-on-waterways>.

¹¹² Interview with maritime enforcement personnel in Togo, August 2021.

¹¹³ Interview with fisher in Bayelsa State September 2021.

¹¹⁴ Oyadongha, Samuel. "Maritime workers urge Bayelsa govt to review ban on 200hp boats". *Vanguard*. February 5, 2016. <https://www.vanguardngr.com/2016/02/maritime-workers-urge-bayelsa-govt-to-review-ban-on-200hp-boats/>.

OPPORTUNITY COSTS

The limitations in monitoring, control, and surveillance (MCS), loopholes in the legal systems, corruption, and lack of transparency in the fisheries sector have made most of the Gulf of Guinea countries susceptible to IUU fishing by distant water fishing vessels. These vessels take advantage of the loopholes in the system by fishing without authorisation, in unauthorised areas, fishing in excess, fishing for prohibited species, or by prohibited methods. These costly problems are not consequences of piracy and armed robbery. However, the fact that attention to piracy distracts from what might otherwise be attention to IUU issues creates a significant lost opportunity for coastal West and Central Africa.

Estimates of the cost of IUU fishing vary greatly. The most rigorous attempt to calculate these costs, published in *Science Advances* in 2020, used multiple modeling techniques to predict losses across the twelve studied countries. These estimates ranged from \$313 million to \$696 million annually, with an average estimate of \$504 million.¹¹⁵ Other studies have cited much higher figures for select countries in the region. A 2017 study by *Frontiers in Marine Science* shows the cost of IUU fishing for six West African countries, Mauritania, Senegal, The Gambia, Guinea Bissau, Guinea, and Sierra Leone, \$2.3 billion per year.¹¹⁶ According to the Nigerian House of Representatives, the country loses \$70 million each year to IUU fishing. This includes loss of licence fees, revenue from taxation, and the value that could have been accrued from legitimate fishing by local vessels.¹¹⁷ Other sources estimate the cost of illegal fishing in Nigeria as much higher, citing anywhere between \$600 million¹¹⁸ and \$800 million¹¹⁹ each year. While these estimates are useful for evaluating the scope, it must also be noted that they utilize different methods, measure different costs, and are based on imperfect data, so they should not be treated as definitive or directly comparable.



Fishing boats in Côte d'Ivoire. 2015. Image Credit: Louis Massuel. Wiki Commons: [https://commons.wikimedia.org/wiki/File:500px_photo_\(120259155\).jpeg](https://commons.wikimedia.org/wiki/File:500px_photo_(120259155).jpeg)

Estimates of the cost of IUU fishing in the Gulf of Guinea range from \$313 million to \$696 million annually, with an average estimate of \$504 million.

¹¹⁵ Sumaila, U. R. et al. "Illicit Trade in Marine Fish Catch and Its Effects on Ecosystems and People Worldwide". *Science Advances*. Volume 6, Issue 9, p 1-7. 2020. DOI: 10.1126/sciadv.aaz3801.

¹¹⁶ Doumbouya, Alkaly et al. "Assessing the Effectiveness of Monitoring Control and Surveillance of Illegal Fishing: The Case of West Africa". *Frontiers in Marine Science*. Volume 4, March 2017. <https://doi.org/10.3389/fmars.2017.00050>.

¹¹⁷ Okafor-Yarwood, Ifesinachi and van den Berg, Sayra. "How Illegal Fishing Harms Nigeria and What to Do about It". *The Conversation*. June 1, 2021. <https://theconversation.com/how-illegal-fishing-harms-nigeria-and-what-to-do-about-it-160553>.

¹¹⁸ Abiodun, Eromosele. "Report: Nigeria Loses \$600m Annually to Illegal Fishing". *This Day*. September 16, 2021. <https://www.thisdaylive.com/index.php/2019/09/16/report-nigeria-loses-600m-annually-to-illegal-fishing/>.

¹¹⁹ Onuoha, Freedom. "Piracy and Maritime Security in the Gulf of Guinea : Nigeria as a Microcosm". 2012.

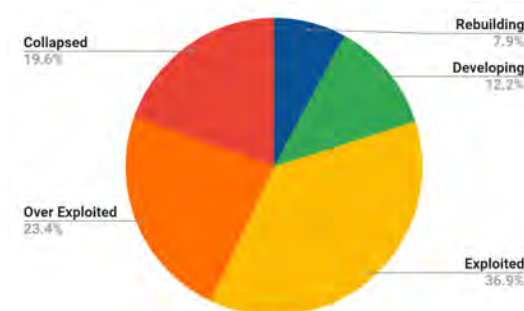
[http://studies.aljazeera.net/ResourceGallery/media/Documents/2012/6/12/201261294647291734Piracy and Maritime Security in the Gulf of Guinea.pdf](http://studies.aljazeera.net/ResourceGallery/media/Documents/2012/6/12/201261294647291734Piracy%20and%20Maritime%20Security%20in%20the%20Gulf%20of%20Guinea.pdf).

With 50% of the fisheries resources in the waters between Nigeria and Senegal already overexploited,¹²⁰ IUU fishing poses a significant threat to the socioeconomic well being of the regional population and the cost of inaction is considerable. According to the World Bank, unless fisheries governance improves, and if the sea level continues to rise, by 2050 fish catch in select West African countries could decrease as much as 26% and could be even higher in countries closer to the equator – for example, a 53% drop in fish stocks in Nigeria, 56% in Côte d'Ivoire, and 60% in Ghana.¹²¹

The impacts on regional economies and stability are extensive. It damages the socioeconomic wellbeing of the regional population and robs states of much needed revenue. When fish stocks that are overexploited experience additional pressure, it is usually the small-scale fishers, whose operations are confined by the amount of time they can be at sea and the distances they can travel, that suffer the most. This results in the inability of fishers to make an adequate income and increased poverty and food insecurity. For example, the impacts of IUU fishing activity has caused the individual income of local fishers to dwindle in the past few years to less than \$1 US/day in Guinea-Bissau and less than \$6 US/day in Liberia.¹²² According to the World Bank, the income for small-scale fishers has dropped by as much as 40% per canoe in the decade prior to 2016 due to reduced catch.¹²³

The ripple effects for communities relying on fisheries for food, jobs, and wealth creation could be even larger, causing acute vulnerability. In the absence of adequate support from the government to build resilience to these changes, some fishers turn to illicit activities, including but not limited to IUU fishing, oil bunkering, serving as informants for pirates/armed robbers, and utilizing their boats for the trafficking of illicit drugs, arms, and human and sex trafficking.¹²⁴ IUU fishing is also increasing the potential for conflict between small-scale and industrial fishers. The former feels the government does not adequately address this threat due to their interest in the revenue generated from the latter's activities.

Fig. 5.6: Gulf of Guinea Fisheries Stock Status



Source: Sea Around Us, “Stock Status in the Waters of Guinea Current,”

<https://www.seaaroundus.org/data/#/lme/28/stock-status>

“We go to Equatorial Guinea to fish because we are not catching enough in our waters. Their ‘Gendarmerie’ arrests us, assault us, shoot at us, and sometimes seize our equipment. Yet, we see trawlers all the time fishing in places reserved for us. Why is our navy not stopping them?”

Focus Group, Fishers in Kribi

¹²⁰ Watkins, Kevin et al. “Western Africa’s missing fish: the impacts of illegal, unreported and unregulated fishing and under-reporting catches by foreign fleets”. ODI. June 29, 2016. <https://odi.org/en/publications/western-africas-missing-fish-the-impacts-of-illegal-unreported-and-unregulated-fishing-and-under-reporting-catches-by-foreign-fleets/>.

¹²¹ Lovei, Magda. “Climate Impacts on African Fisheries: The Imperative to Understand and Act”. The World Bank Blog. 2017.

<http://blogs.worldbank.org/nasikiliza/climate-impacts-on-african-fisheries-the-imperative-to-understand-and-act>.

¹²² Belhabib, Sumaila, and Pauly, “Feeding the Poor: Contribution of West African Fisheries to Employment and Food Security.”

¹²³ The World Bank. “Safety and sustainability for small-scale fishers in West Africa”. May 16, 2016.

<https://www.worldbank.org/en/news/feature/2016/05/16/safety-and-sustainability-for-small-scale-fishers-in-west-africa>.

¹²⁴ Witbooi, Emma et al. “Organised Crime in the Fisheries Sector”. High Level Panel for a Sustainable Ocean Economy. 2020. [https://oceanpanel.org/sites/default/files/2020-08/Organised Crime in the Fisheries Sector Full Paper Final.pdf](https://oceanpanel.org/sites/default/files/2020-08/Organised%20Crime%20in%20the%20Fisheries%20Sector%20Full%20Paper%20Final.pdf); Welsh, Caitlin; Vanneste, Pierre. “The Senegalese Fishermen Trapped between Hunger and Exile”. Equal Times. April 2017.

<https://www.equaltimes.org/the-senegalese-fishermen-trapped#WQOZCRLyu8U>; Okafor-Yarwood, Ifesinachi et al. “Stable Seas: Gulf of Guinea”. Stable Seas. March 2020.

<https://www.stableseas.org/post/stable-seas-gulf-of-guinea>.

Fig. 5.7: Threats to Gulf of Guinea Fisheries Health

“If the navy did not step in, we [the youths] were ready to go in our boats to sea and fight it out with them. Why should we abide by the law that prohibits light fishing when the tuna vessels can engage in it for their baits?”

The above excerpt is derived from a focus group discussion with fishers in the Volta Region of Ghana in July 2021 in response to the Fisheries Commission's authorisation of light fishing by tuna vessels in 2020. This authorisation was later withdrawn when the navy intervened, citing the risk of violence as the fishers sought to address the scourge of IUU fishing in their waters.¹²⁵

In Kribi, Cameroon, fishers have to go as far as the border with Equatorial Guinea as they do not catch enough fish in the inshore areas reserved for them. They blame this depletion on the illegal incursion of industrial vessels in their waters and the failure of the maritime enforcement to do something to stop this.¹²⁶

Similar sentiment is repeated by fishers in Benin who noted that the authorities need to do more to stop IUU fishing activities by trawlers. According to the President of the national fishing cooperative:

“There are no fish at sea because of IUU fishing and the bad habits by vessels fishing in our waters without authorisation or fishing where they are not authorised to. They rob our seabed and destroy our nets in the process with no prosecution from the authorities”.¹²⁷

Safeguarding the livelihoods of coastal residents and seeing an end to the vicious cycle of deprivation exacerbating insecurity requires urgent action to stem the tide of IUU fishing. Should the current selective approach to fisheries governance, which marginalises the vulnerable while allowing overexploitation and IUU fishing, continue unabated, it will cast doubt on the small-scale fisheries' ability to contribute to local food security and livelihoods. In addition, existing research has made connections between depleting fish stock in the region and illicit activities. As fishing becomes less productive, fishers may engage in illegal migrant trafficking, drug trafficking,

THREATS TO FISHERIES HEALTH



CLIMATE
CHANGE



MARINE
POLLUTION



OVERFISHING

Source: Stable Seas: Gulf of Guinea

In the absence of sustainable livelihoods, fisheries may turn to various forms of maritime crime to meet their basic needs.

¹²⁵ Environmental Justice Foundation. “U-Turn on Ghana’s Fisheries Commission Decision to Allow Tuna Boats to Use Light Fishing”. May 22, 2020. <https://ejfoundation.org/news-media/u-turn-on-fisheries-commission-decision-to-allow-tuna-boats-to-use-light-fishing>.

¹²⁶ Focus group discussion with fishers in Kribi in October 2019.

¹²⁷ Focus group discussion with fishers in Cotonou, August 2021.

pipeline vandalization, illegal fishing, or acting as lookouts or navigators for pirates/armed robbers in the quest for survival.¹²⁸

In summary, the fisheries sector plays an important role in supporting livelihoods, providing food security, and generating employment for millions of people throughout the Gulf of Guinea. However, IUU fishing activity, restrictions on fishing operations, and disproportionate enforcement actions further undermine fishers' efforts to achieve sustainable livelihoods. Faced with reduced catch and lack of alternative livelihoods, fishers are forced to make difficult decisions, exacerbated by the state's lack of support to build resilience to their vulnerability. This vulnerability exposes them to criminal actors and may incentivize their participation in other illicit maritime activities. This vicious cycle enables piracy and armed robbery at sea to thrive in the Gulf of Guinea.

In addition, piracy and armed robbery has had significantly detrimental impacts on fishers and fishing communities in the Gulf of Guinea. Kidnap for ransom and robbery attacks have seriously compromised their safety and security, leading to injury, captivity, mental trauma, and death. It has also had important economic impacts. While the direct economic costs of piracy and armed robbery to fishers is likely incomparable in scale to the costs associated with shifting shipping patterns and the procurement of naval vessels, they need to be contextualized and understood for the devastating impacts they have on individuals and communities. The loss of a boat or engine that can cost several years of earnings, sometimes repeatedly, can have truly life altering impacts at an individual level. Aggregated up to the level of entire coastal communities that are dependent on the artisanal fisheries sector, there is the potential for localized impacts which generate a spiral of unemployment, crime, and the undermining of government legitimacy. Therefore, while the total dollar amount may not be equatable to other forms of cost imposition discussed in this report, its second order social and economic impacts are extremely detrimental.

And finally, the international assistance and attention focused on piracy and armed robbery at sea draws maritime law enforcement effort toward piracy and away from the extremely costly problem of insufficient fisheries enforcement. This opportunity costs the region greatly, in terms of human security, environmental security, food security, and economic security.

The fisheries sector plays an important role in supporting livelihoods, providing food security, and generating employment for millions of people throughout the Gulf of Guinea.

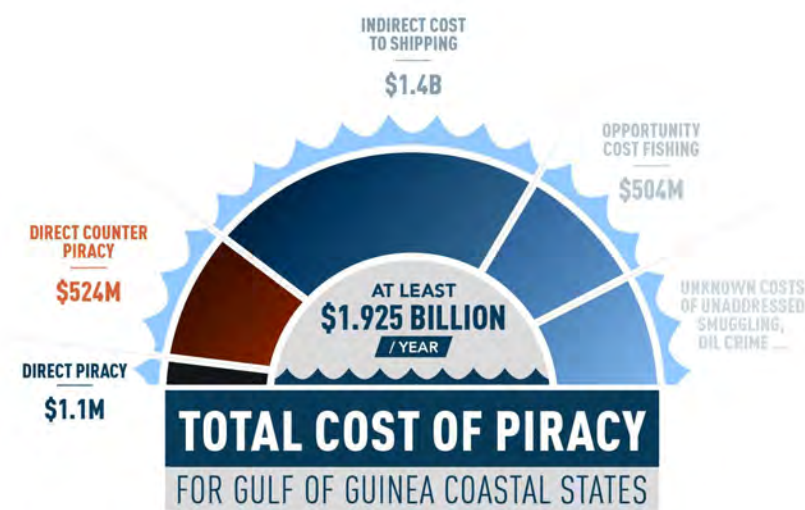
While the direct economic costs of piracy and armed robbery to fishers is not of the same scale of costs associated with shipping and security, they need to be understood for the devastating impacts they have on individuals and communities.

¹²⁸ Beseng, Maurice. "Cameroon's Choppy Waters: The Anatomy of Fisheries Crime in the Maritime Fisheries Sector". *Marine Policy*. Volume 108. 2019. <https://doi.org/https://doi.org/10.1016/j.marpol.2019.103669>; Lindskov Jacobsen, Katja, Sernia, Giuseppe, and Faipoux, Hugues, "Pirates of the Niger Delta: Between Brown and Blue Waters". 2021. <https://doi.org/10.5621/scieictstud.41.1.0229>; Denton, Ginger and Harris, Jonathan "The Impact of Illegal Fishing on Maritime Piracy: Evidence from West Africa". *Studies in Conflict & Terrorism*. p 1–20, 2020 <https://doi.org/10.1080/1057610X.2019.1594660>; Witbooi, Emma et al. "Organized Crime in the Fisheries Sector Threatens a Sustainable Ocean Economy". *Nature*. No. 588. P 48–56. 2020. <https://doi.org/10.1038/s41586-020-2913-5>; Vanneste, Pierre. "The Senegalese Fishermen Trapped between Hunger and Exile". *Equal Times*. September 12, 2020. <https://www.equaltimes.org/the-senegalese-fishermen-trapped?lang=en#.YalETWDMJPY>.

5 CONCLUSION

Pirate groups concentrated in the Niger Delta earn perhaps \$5 million of direct income per year through theft and hostage-taking. The majority of this income---nearly \$4 million per year---is stolen and extorted from non-African entities seeking the release of non-African hostages.

Fig. 6.1: Imagining the Total Cost of Piracy to Gulf of Guinea Nations



These low direct costs to African nations have created the perception among some that Gulf of Guinea piracy and armed robbery are greater problems for international shipping companies and foreign seafarers than they are for African nations. According to this view, these crimes happen *in* Africa, but they do not typically happen *to* Africa. Gulf of Guinea waters are crime scenes, but Gulf of Guinea nations are not the primary victims. The implication is that those paying ransoms and suffering direct financial losses have the most at stake.

This report has shown that this perspective is misguided. Gulf of Guinea nations are facing significant direct, indirect, and opportunity costs related to the presence of piracy and armed

Direct costs are more amenable to calculation, but as costs become less direct they become more difficult to conclusively quantify. This report has illustrated some of the many indirect and opportunity costs that can be traced to piracy and armed robbery in the Gulf of Guinea, but there are surely additional effects that are not discussed.

This figure of annual costs of at least \$1.925 billion should therefore be considered as a very conservative estimate that does not account for other dimensions of the problem that are influenced by piracy, even if they are not caused directly by piracy. These omitted dimensions include the break-even point of oil extraction (which affects the profitability of oil exports), consumer prices on goods imported to the Gulf of Guinea (which are surely higher due to additional transportation costs), and lost onshore employment opportunities that are due to decreased shipping activity. This report is intended to provide an indication of approximate costs and to open a broader conversation about how these second-order and third-order impacts may affect the region.

robbery. These costs occur on a scale that is thousands of times greater than what is paid to pirates in ransoms each year.

For every \$1 pirates steal or extort from African victims, Gulf of Guinea governments spend around \$524 on counter-piracy efforts. These expenses are incurred as nations invest in more capable patrol boats, increase counter-piracy patrols, build maritime domain awareness platforms, seek legal training, and develop multilateral information-sharing mechanisms. We estimate expenditures of this kind have increased by around \$100 million per year since 2017.

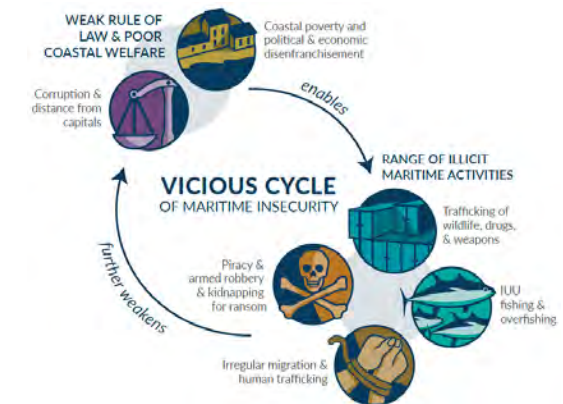
For every \$1 pirates take from Africans, Gulf of Guinea nations are robbed of around \$170 in port fees lost due to decreased shipping activity and another \$1,200 in lost import tariffs. This lost government revenue, totalling an estimated \$1.4 billion per year, is as much as double the best estimates of the direct costs of piracy paid by international navies, intergovernmental organizations, and the global marine transportation private sector each year.

But the greatest costs, by a wide margin, are the incalculable opportunity costs associated with these piracy-related expenses. With \$524 million per year reallocated away from counter-piracy expenditures and toward fisheries enforcement, African governments could better address IUU fishing, which is estimated to cost the region up to \$504 million per year---a sum that is 500 times greater than direct losses due to piracy. Fishing would be safer and more profitable for millions of people working as fishers or in the many roles on the artisanal fishing supply chain.

These funds could also be used to address other maritime crimes with benefits that are harder to quantify, including pollution, drug smuggling, and human trafficking. A change of focus to these issues could improve standards of living in coastal communities in immeasurable ways and it could also provide Gulf of Guinea nations with a standard of security necessary for the unfettered development of the blue economy. A region with one of the greatest concentrations of persons living in poverty could be transformed. Increased opportunities in the licit economy could break the self-perpetuating cycle of maritime insecurity (Figure 6.2).

Pirates earn the majority of their income by ransoming non-African hostages, leaving some to conclude that Gulf of Guinea nations are not the primary victims. After considering indirect financial damages and opportunity costs, it becomes clear that Gulf of Guinea nations have the most to gain from reducing piracy and armed robbery in the region.

Fig. 6.2: Cycle of Maritime Insecurity



Source: *Stable Seas: Gulf of Guinea*

Finally, with as much as \$1.4 billion per year more in port and import tariff revenue, governments could improve transportation infrastructure and improve the efficiency of the oil and shipping sectors. This could make imports less expensive and exports more competitive. Costs of oil extraction could fall, bringing greater profits to the Gulf's oil-producers. The results of such investment would spillover to land-linked neighbors who depend on coastal ports for a large share of their international trade.

In these ways, the Gulf of Guinea nations are much more than a setting for piracy. They are---through the imposition of direct, indirect, and opportunity costs---the nations losing the most from the ongoing piracy crisis. This also gives these nations the most to gain from eradicating the problem.

REPORT

PIRATES OF THE GULF OF GUINEA: A COST ANALYSIS FOR COASTAL STATES

Stable Seas engages the international security community with novel research on illicit maritime activities such as piracy and armed robbery, trafficking and smuggling in persons, IUU (illegal/unregulated/unreported) fishing, and illicit trades in weapons, drugs, and other contraband. These activities perpetuate organized political violence and reinforce each other to threaten economic development and the welfare of coastal populations.

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