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The Role of Famine in Piracy off the Somali Coast: A Study on the Drought and Famine of 2011

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Abstract

The surge in pirate attacks attributed to Somali pirates in 2010 and 2011 was recently the biggest and largely unforeseen by the international community. Albeit pirate activity already characterized the region, its marked increase shifted the piracy epicenter away from the Malacca Strait and caused disruption to international trade passing through the Gulf of Aden. Simultaneously, the harshest drought in decades affected the Horn of Africa. Its impact led the UN to declare a famine in Somalia in 2011. This article uses data from the International Maritime Bureau and the Food and Agriculture Organization to investigate the existence of a relationship between the drought that affected the country in late 2010 and the observed criminal activity at sea. While maritime piracy occurs off the coast, investigating its possible roots on the territory is insightful. This article discusses the phenomenon of Piracy off the Somali coast, its historical background and its implication for the country's future. It looks critically at the hypothesis that the drought and the lesser harvests that followed worsened food and income insecurity for many individuals, choosing piracy as an option to cope with the economic shock.

Keywords: Somalia, piracy, drought, famine.

Introduction

Somalia's dire economic situation, lack of governmental authority and geography made it a thriving environment for piracy. Despite its lack of arable land and dry climate, the country was blessed with the longest coastline of all African countries. Somalia's GDP per capita surpassed $300 only in 2017 and sat at the lowest end of the global distribution. The Gulf of Aden is a key shipping route that offers poor pirates a tempting series of targets. This collision of means, motives and opportunity gave birth to effective pirate operations.

Somalia’s blue economy began flourishing during the 1970s’. The country's pursuit of self-sufficiency under Barre's scientific socialism encompassed the development of its fisheries as well as the exploitation of marine resources. Aided by the Soviets and later by the Italians, the Barre regime sought to improve coastal communities' economies with the introduction of 500 mechanized boats in the early 1970s'. This increased the annual catch of fisheries from a stagnant 5.000 to a peak of 8.000 tonnes in 1975. The surge in the sector's productivity was short lived. Lack of maintenance and the unavailability of spare parts for the newly distributed boats meant that about two thirds went out of operation after the first two years. Annual fish production followed, going back to the previous 5.000 tonnes.

While Barre's efforts did not develop the sector in Somalia, they introduced a pattern of seeing Somali fishermen working for foreign fishing vessels licensed by the Somali Government to fish locally. This pattern outlived the regime: Following the fall of Siad Barre, local militias started issuing licenses and permits previously handled by the Government to foreign vessels operating in the area. The international presence escalated with the increase of Asian trawlers along Somali waters, thus leading to conflict between local fishermen and foreign

vessel operators. This was the vestigial foundation that set the stage for later rent seeking pirate enterprises in the area.

In 1978, a crucial defeat during the conflict between Somalia and Ethiopia undermined the Barre regime's power, which fell into a period of progressive instability and mounting armed opposition which led to the outbreak of all-out civil war and the overthrow of the central government in 1991.

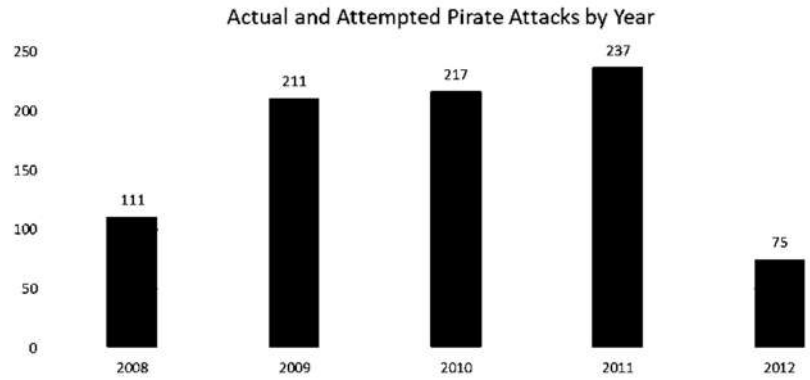
With the power vacuum characterizing the early 1990s, Somali piracy began. Due to the absence of the Somali coastal guard, foreign fishing vessels started fishing in Somali territorial waters, depleting maritime resources (Weir, 2009). Local fishermen attempted to expel foreign fishing trawlers; over time, this local resistance turned into an extortion racket. Local militias started extracting money from foreign fishing vessels in exchange for informal “licenses” to fish, and those unwilling to pay faced the threat of capture and kidnapping (Menkhaus, 2009). As fishing trawlers began to arm themselves, so did the local fishermen. They also started to target merchant ships instead of fishing trawlers because their lower speed meant they were easier targets. By 2005 it was already clear that these locals venturing at water were not trying to replace the nonexistent Somali coast guard anymore. Their motif had shifted from a reaction to outside illegal intrusion to an extorsive enterprise. Pirates and their sympathizers invoke this narrative where the line between pirate and coastguard is blurred to justify piracy. This narrative gained significance from inside Somalia because of its culture of private protection and general suspicion of Western motives for intervention in Somalia.

In the meantime, a series of peace talks and attempted centralized rule never managed to establish prolonged control over the territory. Throughout the years, many organizations have attempted to fill the power vacuum. The Transitional Federal Government had to compete

with the Islamic Court Union and the local branch of al-Qaeda known as al-Shabaab that used hit and run guerrilla tactics to gain territorial control.

Pirate attacks attributed to Somali pirates started being on the rise already in 2008, when 111 attacks were recorded. Pirate attacks almost doubled the next year, figuring at 211, and retained the same level during 2010, at 217. The peak of 237 attacks was recorded in 2011, before the anomaly would fall back to 75 attacks in 2012. Unexpected insecurity characterized the Gulf of Aden, one of the most trafficked maritime trade route with it. The danger did not stop at the Gulf of Aden but marked the waters of Somalia as well as those of neighboring countries. The phenomenon imposed costs on the global economy under the form of theft, sabotage, ransom from hijackings, delayed shipping times and security costs, and hindered Somalia's development by being a source of funding for local warlords and terrorist groups (Lehr, 2006).

Figure 1:
Yearly pirate attacks attributed to Somali pirates.



Source: International Maritime Bureau

The history of the terrorist group Al-Shabaab is also intertwined with piracy. Al-Shabaab's first stance on the phenomenon was rather condemning, as the practice was un-Islamic (Hansen, 2009). Before 2010

Al-Shabaab had little interest in interacting with pirates, as shown by the absence of its military presence in any pirate ports. This was likely because Al-Shabaab had few means to tax the pirate groups. The terrorist group also refrained from recruiting within areas engaging in piracy. On the 25th of April 2010, though, the group invaded and gained control of the pirate port of *Haradere* and later introduced a tax between 15% and 20% on successful pirate activities based in their area of control (Hansen, 2013).

Al-Shabaab's involvement in the matter was particularly unwelcomed by the pirate groups. The imposition of a tax burden was certainly a great annoyance, yet it could be reasonably factored into the operating costs of the activity. The main reason why Al-Shabaab's tax on pirates was ill-favored was that the pirates were exclusively profit seekers that wanted to avoid any involvement in the wider war on terror to protect their business. Haradere thus became less convenient to be used to launch maritime attacks, warding off potential interventions by the United States in the area. Pirates started to move out to other coastal cities to conduct their businesses, stripping al-Shabaab of their revenues.

The European involvement in Somalia came during July 2012 through three military operations aimed at pacifying Somalia: European Union Training Mission (EUTM) Somalia, EUCAP Nestor, and the deployment of an EU Naval Force in the territory through Operation Atalanta. The latter operation constituted a synergy with UN's Operation Ocean Shield, already deployed since 2009, with the aim of patrolling the waters off the coast of Somalia, discouraging pirate activities and bringing wrongdoers to justice.

Somalia's latest elections were held between 2021 and 2022, amidst tight security measures. Analysts estimated that the electoral process was filled with corruption and intimidation, from the clan elders' selection of

candidates to elected parliament members' vote for president. Even so, the process was considered a step forward for the vexed country. To date, the country remains unstable and one of the poorest in the world. It is perhaps one of the most exemplary cases of a failed State.

The Logistics of Piracy in Somalia

Somali pirates share a set of characteristics common to many criminals: The prototypical pirate is a young (typically in his early 30s), unemployed, uneducated and disaffected man. One can encounter pirates from three broad categories: clan-based militia raised in battle, youth attracted by the money or fishermen recruited through force because of their navigation skills. They are generally equipped with an assortment of light weapons, automatic rifles (most commonly AK-47) and occasionally rocket launchers.

The piracy business in Somalia is based on a hierarchy with financers on top. Financers do not engage directly into piracy themselves and are based further inland or abroad. They invest, expecting a share of the ransom generated from successful attacks. A single attack may cost $30,000 up-front, which is a considerable amount in Somalia. So the risk is usually spread between three and five investors who buy shares in an informal stock market.

Pirate gangs operate in groups of four to six and are directed and dependent on their financers for the provision of boats, supplies and weapons. The technology available for pirate attacks is rather simple, but the pirates make up for it with their recklessness. They use skiffs (small flat-bottomed open boats with pointed bows and flat sterns) able to travel up to 30 knots. These boats are the same used for coastal fishing. Attacks involve three to five skiffs swarming the vessel until pirates are able to get onboard with ladders and grappling hooks and hijack the vessel.

Because of the relatively low-tech nature of the enterprise, ships that fall prey to pirate attacks are generally slow vessels with low sides.

As the world became more aware of the phenomenon, ships passing through the Indian Ocean began to keep their distance to the Somali coast. Pirates then had to adapt and carry their operations out in the open sea. To accomplish this, they developed a new strategy that involves two hijacks during the same operation: First, they seize a medium-sized fishing trawler and use it as a "mothership", holding the crew captive and taking advantage of the hijacked ship to wait for bigger and more lucrative targets to pass. If no convenient ship is found in the short-term, the crew of pirates returns to the Somali coast to refuel and gather more supplies before circling back out to the sea. Targets vary and have included oil tankers, cargo vessels, fishing vessels, relief cargo ships, cruise ships as well as luxury yachts.

While most pirate groups attack targets of opportunity, it is believed that there is a subset of well-connected gangs able to receive ship information such as routing, cargo, crew and defense capability and make use of this information to orchestrate a coordinated attack. The first intelligence/information gathering phase brings down operating costs. Successful attacks result in boarding and takeover and generally take about fifteen minutes to complete. Once the pirates take control of another ship, they force the crew to steer towards their pirate harbor of choice on the Somali coast. The purpose of this maneuver is to find a safe place to conduct the negotiation process, which could last for months, obstruct eventual attempts at rescue and facilitate the provision of supplies to the pirates and their captives. Ransoms are generally delivered directly to the hijacked ship through boats hired by private security/insurance companies or via airdrop onto hijacked vessels. Testimonies of captured pirates indicate that the ransom is divided as follows: 30% of the revenue goes into the sponsors' pockets, while

another 30% is equally split among the pirate crew. 20% is used to support ground operations, gather intelligence and pay for bribes, while the remaining 20% is reinvested into future activities. The money split by the pirates generally corresponds to three times the average worker's income. The profitability of the sector is highly attractive and helps replenish the pirates' ranks.

Estimating the Costs of Piracy

Little more than half of the revenues generated through ransom payment enter the Somali economy through the purchase of services, consumer durables, high-end vehicles and real estate. These flows contributed to real estate bubbles in pirate heavens such as the coastal city of Eyl during the better days of piracy. Similarly, they distorted the economy, generating inequalities in an environment where investments in infrastructure and public services were lacking, and law and order were deteriorating. This affected the business climate in many Somali cities, as the non-crime economy has been partially crowded out by the piracy-fueled business. At the same time, numerous local businesses benefitted from pirate activities in a trickle-down fashion. Yet, domestic and outside investors were and are still discouraged by piracy, because it thrives in and fuels a general environment of impunity, crime and weak institutions.

Piracy also imposes costs on the global economy. Between 2008 and 2009 insurance rates for ships rose from $500 to $20,000, a forty-fold increase due to piracy (Frump, 2009). Changing the shipping route around the Cape of Good Hope adds approximately 3,500 miles to the journey and even just speeding up from 13 to 18 knots costs an average extra $88,000 in daily fuel per ship. Evasion and diversion costs become particularly worrisome during spikes in oil prices. Deterrence is a costly countermeasure too. Sonic deterrent equipment costs roughly $30,000 per piece while permanent security guards onboard are prohibitively

expensive. This translates into a hidden "piracy tax" that is carried onto the final costs of shipped goods and burdens consumers.

The phenomenon also damages neighboring countries such as Egypt. Increased insurance premiums and diverted trade translated into a decrease in revenue for the Suez Canal of 30% over the year 2009 (Wasser, 2009). Estimates of the direct and indirect costs of piracy were estimated to range from $1 billion to $16 billion (Chalk, 2008). It is estimated that pirates attacked 0.6% of the 21,000 ships passing through the Gulf of Aden during the year 2009.

Human costs are even higher. Among the consequences of piracy are loss of life, trauma on hostages and their families, as well as greater impacts on human security in the Horn of Africa. Pirates have also targeted relief shipments responding to food insecurity in Somalia. This is particularly inconvenient for a country where one third of the population relies heavily on food aid and humanitarian supplies. The terrorist organization al-Shabaab also benefitted from piracy in the region, as it started to use coastal cities as sources of taxation during 2011, levying taxes on pirate enterprises (Hansen, 2013).

Literature Review

The academic literature on piracy identified a number of explanations for attacks. Common explanations include geography, poverty, international cooperation in naval deterrence as well as local institutions and the rule of law.

Empirical studies rejected the earlier belief that privacy arises out of the total absence of local institutions (Murphy, 2007). Indeed, the relationship between piracy and institutions seems not to be linear. De Groot, Rablen and Shortland (2011) suggest that pirates need institutions that are weak

and compliant rather than absent. Criminal networks still need a degree of protection and functioning markets to absorb loot and ransom, while excessively improved governance discourages it. On the same note, Hastings (2009) argues that hijackings targeting ships and their cargo rather than just the crew for ransom occur less frequently in failed states because markets capable of absorbing cargo are lacking. Percy and Shortland (2013) also argue that institutional stability benefits pirates to the extent that it facilitates their ability to contract for supplies, hold hostages and negotiate ransoms. Daxecker and Prins (2015) used data on pirate attacks worldwide in the 1996-2013 period to conclude that piracy occurred further from the nearest country's capital when its governance was strong. Overall, all the most recent studies on piracy agree on the hypothesized inverse-U shaped relationship between institutional quality and piracy.

Other authors studied the influence of international cooperation (or the lack thereof) and naval deterrence. Security at sea can, in essence, be framed as a public good and creates incentives and distortions typical to the provision of public goods. When States fail to cooperate in securing shared sea lanes, pirates can take advantage of this tragedy of the commons. This was the case for the Straits of Malacca until littoral states coordinated when, in 2004, insurers threatened to declare the region a warzone, consequently raising insurance rates (Bradford, 2008). According to empirical analysis by Percy and Shortland (2013), it seems, though, that international cooperation can only have a limited deterrent effect and yield unsatisfactory decreases in pirate attacks.

The specific case of Somali pirates had a number of international stakeholders monitoring the situation. The African Union, European Union, United States and NATO all were interested in controlling the surge in pirate attacks for either military or economic reasons. As such, since late 2008, both NATO and the European Union started to be

involved in the region's waters through Operation Atalanta and Operation Ocean Shield. The two mandates were overlapping to a great extent, but no joint planning had been envisaged before nor after their start. Most members of the EU are also members of NATO. Yet, the interplay between these two actors was very limited. They did not share intelligence information and suffered from a general lack of coordination at the expense of pragmatism (Gebhard, 2015).

It is unclear in which way these operations brought about the sharp decline in pirate attacks observed after 2012, as the pirates' strategies seem to have been capable of adapting to the policing presence by changing their tactics first, and their business model later (Jacobsen, 2018). Anyhow, both Operation Ocean Shield and Operation Atlanta were ongoing during the pirates' decline in 2012. NATO withdrew its forces in 2016, claiming that their presence was no longer needed, while the EU committed to staying until the end of 2022.

An additional hypothesis is that poverty influences attacks, although the results are inconclusive. Hansen (2009) stressed the 2008 presidential election in Puntland and the budget collapse that prevented paying police officers to explain the rise in piracy in the region. De Groot, Rablen and Shortland (2011) found a negative relationship between attacks and GDP per capita while Percy and Shortland (2013) looked for a link between poverty and attacks with inconclusive results. Another study by Vagg (1995) explains the surge in pirate attacks in the Riau Archipelago in the early 1990s as driven by the union of poverty and opportunity. Opportunity costs are a function of what a potential pirate could achieve by engaging in piracy and the counterfactual scenario of other forms of employment. Measures of aggregate wealth may reveal an effect on this function, but national wealth may better reflect state capacity rather than opportunity costs. "Opportunity" in the context of the academic research on Somali pirates refers to discreet, tangible elements, such as the access

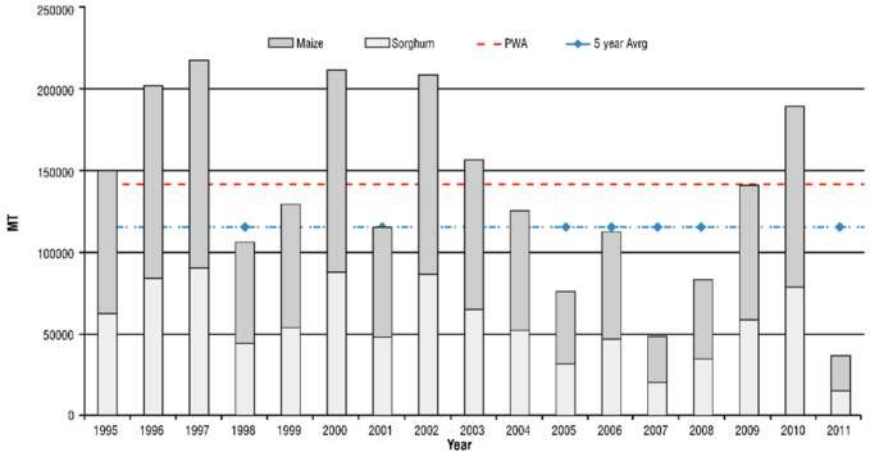
to busy anchorages, busy shipping lanes and chokepoints, where sear traffic is channeled, and ships slow down (Bueger, 2013; Coggins, 2012; Hastings, 2009; Jablonski & Oliver, 2013). All these elements have been proposed as convincing explanations for trends in pirate activity.

Tracing back piracy to its economic motives is sound: The business model that characterized piracy in Somalia is an articulated scheme uniting rudimentary equipment to careful logistics and business planning happening inland. Somali pirates do not act out of ideology or with a terrorist motive. They are instead driven by profit (or, broadly speaking, material necessity) at all stages of the business hierarchy. The following sections explore the drought and its effect on the opportunity cost to engage in piracy, sharing the same "Rational Choice Theory" type of assumptions that justified the aforementioned studies.

The Drought of 2010

Drought events usually develop gradually and unnoticed, causing tremendous effects on agriculture and the environment. For example, the drought that affected Somalia starting with the failure of rainfall during the Deyr season of 2010 led the United Nations to declare a famine only on the 20th of July 2011. This drought is said to have been the worst in 60 years, and its scope went beyond Somalia, affecting neighboring countries of Djibouti, Kenya and Ethiopia. Because of La Niña, eastern-pacific waters at equatorial latitudes were cooler than normal during 2010, and winds that are supposed to bring moisture in east Africa were reduced. Consequently, rainfall failed.

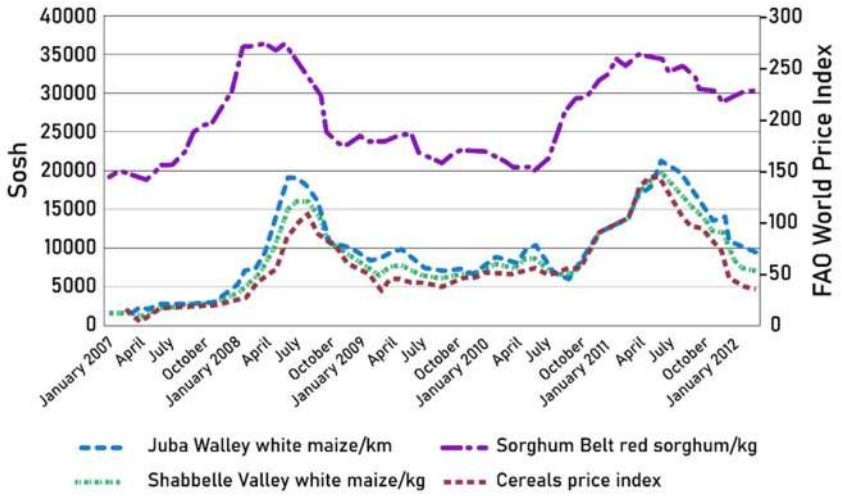
Figure 2:
Maize and Sorghum Gu' harvest, south central Somalia.1995–2011.



Source: FSNAU, 2011 (PWA = Post-War Average, Five-Year Average = 2006–2010)

The severity of the drought can be inferred by looking at the yield of the main crops cultivated in the country: maize and sorghum. Figure 2 shows the maize and sorghum harvest in Southern Somalia for the years between 1995 and 2011 in metric tons, and compares it to the Post-War average as well as the average of the period 2006-2010. The contrast is glaring, as the 2011 harvest is approximately one quarter of the previous year. Besides reduced crop yields, the drought also increased animal mortality rates and food prices (Fredriksen, 2016). Local food availability became an issue and livestock sales, one of the most common sources of income, decreased. Rural areas throughout the country's south were also stripped of a significant wage-labor opportunity because of the decline in agricultural production. Somalia's heavy dependence on food import, jointly with a global increase in the price of food, meant that the failure of local agricultural production was particularly troubling.

Figure 3:
FAO Cereal World Price Index, price trends for Somalia, and exchange rate: 2007–11.



Source: FAO, 2012; FSNAU, 2012.

Figure 3 depicts the price of basic food grains in different locations in Somalia. Food prices started increasing with the onset of the drought and peaked around June and July, approximately when the famine was declared. The increase in food prices was due to the failure of the Deyr harvest but also reflected the trend affecting global prices. The loss of animal life and declining rural labor opportunities inside Somalia contributed to a sharp decline in rural incomes at the time when the price of food was rising, to the detriment of several identifiable groups in southern Somalia. Agro-pastoralists and agriculturalists lost their ability to access adequate nutrition.

Underlying and Complicating Factors

Some long-term factors affecting Somalia defined the context in which the drought took place and shaped the magnitude of its consequences.

Somalis had to confront the drought of 2010 at a stage where their livelihoods and coping strategies were already eroded over the previous decades, making extreme climatic hazards particularly impactful.

Traditionally, livelihood strategies in the horn of Africa have enabled pastoralists to work around a single drought with relative success, and the absence of rain was problematic after the second consecutive year (Ellis & Swift, 1988). In 2011, populations affected by the drought started to resort to extreme coping strategies already after a single year of failed harvest (FSNAU, 2011). Malnutrition was on the rise, and abnormal population migrations were taking place. The Somali population was already very insecure and vulnerable, but this vulnerability had been previously masked by aid. As of late 2010, when the drought set in, there were already 1.46 million of Internally Displaced Individuals inside Somalia; the greatest share of this figure was in southern Somalia (UNHCR, 2010). Prolonged separation from long-term residences is an obstacle to livelihood investment (Jaspars & Maxwell, 2008). By constantly being on the move, displaced individuals lose access to their homes and lands and are prone to face additional expenses, often forcing them into selling or leaving their productive assets behind. Additionally, displacement cuts access to social services, especially health, sanitation and education.

That being said, access to social services in Somalia was already difficult before the drought. The long collapsed government left a power vacuum and decreased security. Basic services generally publicly provided, such as healthcare, education, agricultural extension and veterinary services, were either provided by private actors or through humanitarian aid. By 2010 the country's infrastructure was mainly a shadow of the past; therefore, humanitarian support could not reach the whole population (Bradbury & Healy, 2010).

The vulnerability of internally displaced individuals was highlighted during the famine, where camps for internally displaced people in southern Somalia registered the highest mortality rates (FSNAU, 2011). The most productive parts of Juba, Bakool and Shabelle in terms of agriculture and grazing suffered high malnutrition and high mortality rates following the drought. These same lands were subject to the expulsion of marginalized individuals off the most productive agricultural lands late during the Siad Barre regime. Some of the dispossessed became refugees, while others became tenants on what previously were their own lands in order to work (Little, 2008).

Farmers with access to land had to deal with a riverine infrastructure that fell into ruin or was looted over the years. During the eight years preceding the famine of 2011, only one year registered an annual grain production exceeding the post-war average (The dashed line in Fig. 2). The shifting control of lands, mostly due to clan politics, was also an issue for pastoralists. As some rangelands became inaccessible to certain groups, they had to rely for longer on marginal land, thus degrading rangelands and water resources (FSNAU, 2011). This resulted in herdsmen experiencing a general decline in the size of their herds over the years preceding the drought. Income from herds and farming, as well as labor opportunities associated with these activities, diminished. Some groups fell back on the production of charcoal. Entrepreneurs in Kismayo hired a large number of laborers leaving agro-pastoralism to cut timber and produce charcoal to export it to the Arabian Peninsula, deforesting large areas in the process.

In a nutshell, the events that unfolded during the late 2010 and early 2011 would have caused hardship even for a country that was not in a state of decade-long crisis as Somalia, but would not have resulted in a catastrophe as it turned out for Somalia. The supplementary vulnerability caused by the aforementioned underlying factors amplified the impact of

the drought and the steepness of the price rises, setting the stage for a famine.

Beyond these proximate and underlying causes, a number of factors complicated the proper response to the famine. The key word to sum up these complications is conflict. The conflict has run rampant in southern Somalia for years. It was a conflict with a regional dimension that saw Ethiopia siding with the Transitional Federal Government (TFG) while Eritrea was backing the Islamic Court Union (ICU) and later, reportedly, al-Shabaab; as well as a global dimension corresponding with the global war on terror. The impact of conflict on famine has been under the lens of academic research for a long time (Macrae & Zwi, 1992). Yet, Somalia in 2011 offers new insights because of the complexity of its multi-level conflict as well as its use of counter-insurgency legislation (Pantuliano et al., 2011).

By 2010, insecurity turned Somalia into the most dangerous place worldwide for humanitarian aid workers to operate, with foreign workers being particularly at risk. The humanitarian space in Somalia was rather inaccessible following the ascension of al-Shabaab in southern Somalia. It was no coincidence that, within southern Somalia, the tighter and more consistent was al-Shabaab's grip, the harsher the famine turned out to be for the local population.

In February of 2008, the United States' Office of Foreign Asset Control (OFAC) inserted al-Shabaab in the list of foreign terrorist organizations, forbidding any form of relationship with or material support to the Somali Islamic organization. This created a risky environment for humanitarian aid agencies to operate, as any material help destined to local Somalis could be captured by al-Shabaab without the possibility to prevent it. It was impossible to operate on territories managed by al-Shabaab without them forcefully levying taxes or diverting aid to themselves, thanks to

their territorial control. This exposed aid agencies to possible fines from the United States, thus making it easier to bail out of Somalia instead of operating on such a fine line.

In November 2009, USAID cut off food aid to southern Somalia, citing OFAC compliance, while January 2010 saw the departure of the WFP from the region, citing the inability to meet humanitarian, security and donor obligations. After the famine was declared on the 20th of July 2011, aid agencies started to return thanks to special licenses granted by OFAC, amidst general confusion about sanctions against humanitarian organizations in al-Shabaab areas. Al-Shabaab's response in August was to restrict the operations of aid agencies inside its territory on the ground that the introduction of aid inside the economy disrupted local markets because it represented a source of unfair competition for local farmers. A few months later, other humanitarian organizations that managed to stay on the territory amidst all challenges were also forced to leave. In January, the International Committee of the Red Cross (ICRC) suspended its food aid operations accusing al-Shabaab of blocking food deliveries. Al-Shabaab's response was to close down ICRC food aid operations two weeks later. The same fate happened to Save the Children.

The policies of al-Shabaab created an irreparable rupture between local authorities and donors, obstructing efforts to mitigate the impact of the drought. The tight grip over southern Somalia restricted the operations of humanitarian agencies (Menkhaus, 2012), but also hindered Somalia's coping strategies through limitations on human movement and high taxation (Majid & McDowell, 2012). Abnormal population movement is a defining feature of famines. It is especially so in a country like Somalia that follows typical patterns of nomadic transhumance. The life of many Somalis is characterized by pastoralism and therefore sees constant movement that is not necessarily stress related. Anyhow, following the failed Deyr rains in late 2010, abnormally large numbers of people began

moving in early 2011 as a reaction to the drought and their lost livelihoods. The flow of migrants stopped in March, expecting the Gu rains to begin in late April, but started again with even greater magnitude in June, after the Gu' rains also failed. The Deyr rains of 2011 inverted the trend, with many refugees returning home in late August and early September, even though out-migration did not stop during the same period. With the rains came resurging demand for labor in rural areas, and more returns were evident during October. This movement was partly voluntary and partly forced by al-Shabaab, which wanted people to return home in advance of the rains. The humanitarian response, which is already complicated by limited access in normal times, was further hindered by a population on the move for different reasons.

Data and Analysis

For the purpose of this analysis, I will use data on pirate attacks from the International Maritime Bureau alongside data on food prices in some of Somalia's major coastal marketplaces from FAO.

The International Maritime Bureau is a specialized department of the International Chamber of Commerce headquartered in Paris. It monitors maritime trade, protects vessels out in the ocean and fights crimes related to maritime trade. The Bureau hosts a reporting center for piracy incidents and gathers extensive information on pirate attacks worldwide.

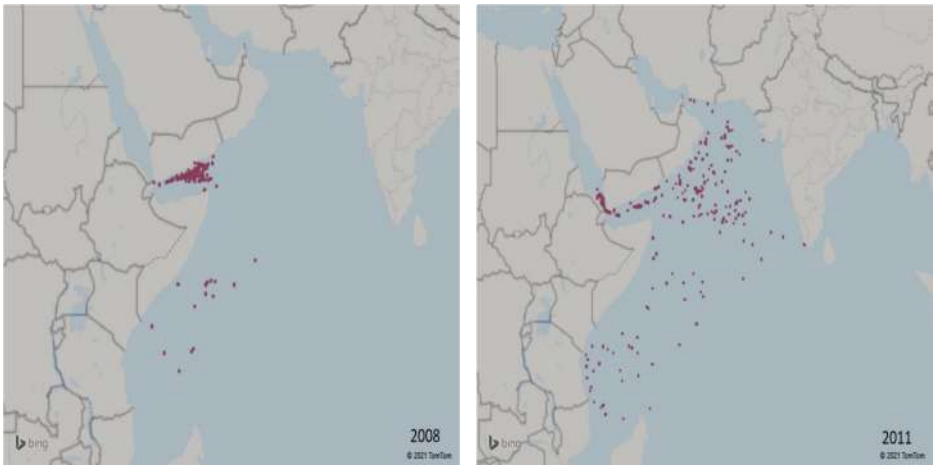
The data used in this study come from the yearly IMB reports of the years 2008 to 2012. The reports contain the date and geographical coordinates (latitude and longitude) for both actual and attempted pirate attacks each year worldwide, the name and nationality of the ship that got attacked, details of the attack, such as the level of violence used, and a description of each event. The report is divided by geographical areas (e.g. Americas, Far East, Europe) with an exception for Africa, whose pirate attacks are

divided between those attributed to Somali pirates (whose reach goes from the Gulf of Aden to the coast of Mozambique) and those who are not.

Additional data on food prices for local Somali markets come from the Food and Agriculture Organization. FAO runs a Food Price Monitoring and Analysis (FPMA) tool with data on the domestic and international prices of common food items such as cereals and milk worldwide. Data from Somalia are gathered starting from the mid-nineties and are publicly available. I have analyzed monthly data on the prices of Red Sorghum and White Maize (The region's two most popular cereals) in the local markets of Marka and Mogadishu, both situated in drought-affected areas.

The level of precision granted by the coordinates of all pirate attacks allows for a complete mapping of the phenomenon. The following graphs represent the location at sea of all actual and attempted pirate attacks from 2008 to 2011.

Figure(s) 4 and 5.
2D Maps of Pirate attacks, Years 2008 and 2011

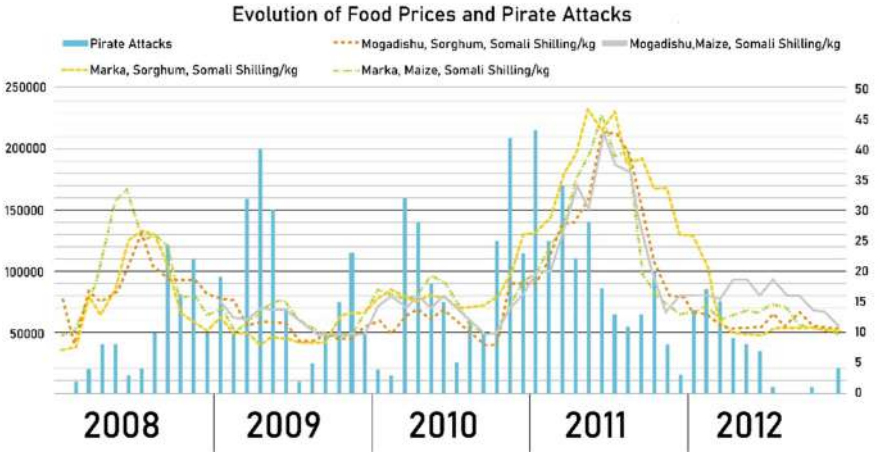


Source: IMB.

The juxtaposition of pirate attack coordinates onto a 2D map gives an idea of the extent of the phenomenon. The year 2011 calls for attention not only in terms of the sheer number of pirate attacks carried out but also in the way they spread over the Indian Ocean. We can find instances of attacks being carried out as far as off the coast of Mozambique or India, a testimony to the resourcefulness of the pirates and their ability to adapt their strategy to target further vessels.

The most interesting findings came by looking at the correlation between food prices and pirate attacks over the months, as represented by the figure below.

Figure 6:
Cereal prices and monthly pirate attacks.



Source: IMB and FAO.

The graph in figure 6 represents the monthly variation of maize (green and grey) and sorghum (red and yellow) prices, as well as the number of pirate attacks for each month (blue columns). Both pirate attacks and food prices peak around the end of 2010 and the beginning of 2011, following the timing of the drought. There is a lag of a few months between the two

peaks, as every combination of food prices in the two different locations peaks later than pirate attacks.

The original hypothesis guiding this research is that the drought starting in late 2010 and then continuing throughout 2011 was the cause of extensive distress for the local population in the form of loss of employment and increased food prices (Maystadt & Ecker, 2014). The combination of food and job insecurity would then have decreased the opportunity cost to engage into criminal activities such as piracy, therefore bringing about the highest number of pirate attacks to date.

If we look at Figure 6, we can observe how pirate activity and cereal prices both peaked around the time of the drought, signaling that the general period was rather tumultuous in Somalia. However, the specific timing of the two peaks in relation with one another is somewhat puzzling. If we abide by the hypothesis that the chain of causation starts with the drought and leads to the peak in pirate attacks, then we would expect food prices to peak before pirate attacks, for they are framed as a strategy to cope with the negative consequences of the drought. However, the data show the opposite. The peak in pirate attacks precedes that of food prices by approximately six months.

One way to justify this is by introducing the idea of expectations. While the famine only happened in 2011, observers from NGOs operating in the country at the time claimed how it could have long been predicted, pointing to signs foretelling the rain failure (Salama et al., 2012; Maxwell, 2016). In this respect, we could justify the earlier increase in pirate attacks as a preemptive coping strategy. In other words, young Somalis would have been anticipating the adverse effect of the drought on food prices and occupation and insured themselves against the occurrence by anticipating their reaction. This possible explanation is purely

speculative and is likely to be an overstretch. There is no example in the academic literature of a surge in specific crimes as a consequence of expectations about future economic shocks.

Another possible reason that could explain the pirate attacks' peak preceding that of food prices is a geographical one: The drought hit the north and the south of Somalia asymmetrically. While the southern regions were severely hit, the north was largely unaffected by the phenomenon. The data on pirate attacks used for this study are an aggregate measure of pirate activity from Somalia. A localized peak of pirate operations based in the south could have been overshadowed by a greater decrease in pirate operations in the north. No data source accounts for the land location from where the pirate attack was launched; they only account for the location at sea where the attack occurred. Furthermore, the ability of Somali pirates to cover extremely long distances (reaching Mozambique and India) to carry out their operations makes it impossible to deduce where an attack was launched or assign ownership of an attack to a southern or a northern area by proxying it with the reported location at sea. This explanation is very hard to support, albeit not completely ruled out.

To sum up, there is little evidence backing up the idea that the peak in pirate attacks observed in 2011 is partially explainable by the drought through the observed increase in food prices. More rigorous econometric hypothesis testing could be run in the future to clarify this point further and possibly explore other ways in which the drought could be linked to criminal activity at sea. A study of this type could have interesting implications outside the specific Somali case, as extreme climate events are on the rise worldwide due to climate change (Mal et al., 2018) and understanding their adverse effect gives us a more thorough comprehension of the phenomenon.

A Review of the Proposed Solutions to the Problem of Somali Pirates

Following the peak of the pirate activity analyzed in this article, a number of scholars and international commentators started speculating on how to solve the riddle of piracy in Somalia. I will now present and briefly review some of the proposed solutions.

One possible idea was that of providing Somalia with a coastguard. No estimate was hoping that the Transitional Federal Government would have had the capacity to operate coastguard facilities effectively; therefore, some speculated that a possible course of action was to involve the UN or the African Union to create a coastguard and then entrust it to Somalia. These types of policies have upfront costs as well as costs that need to be managed over time: Training and equipping the personnel is only the first step of the eventual creation of a Somali coastguard. After its inception, salaries must be paid and operational costs continuously faced. There are multiple accounts of TFG militias behaving like bandits and extracting money from citizens or defecting in favor of the ranks of al-Shabaab because the TFG could not guarantee a monthly salary. Should a similar situation have happened for the coastguard, it would have been likely for defectors to replenish the pirates' ranks because of their expertise in the field. This policy option ended up not being the chosen one.

Another option suggested by the shipping industry was to coordinate and pay no ransoms. By removing the reward, the whole process would stop, at least in theory. Yet, it is not so simple. Somali pirates have proven to be eager to adapt to a great extent in order to carry out their businesses. The complete stop of ransom payments could have simply been met by a change in tactics on the pirates' side, starting to value cargo more than the crew, as happened in Indonesia (Murphy, 2013). Besides the cargo, pirates could have also shifted their interest in favor of the ships themselves, capturing and re-registering them as phantom ships to be

reused. Additionally, a critical aspect of this potential solution is that not paying ransom could result in loss of life. No shipping company would want to be the first to refuse to pay when the consequences could be so costly. A lesser version of this tactic would be to coordinate negotiations among shipping agencies so as to be able to negotiate lower ransoms overall. This concerted effort was not achieved.

A third option was that of organizing all shipping on an agreed safe lane into the Gulf of Aden and patrolling the area via coalition warships or aircrafts. This approach was double-edged because it would have gathered all ships into predictable paths and made life easier for pirates should the international patrolling presence have been too light. This solution was clearly more practical but, at the same time, only partial. Somali pirates did not only operate in the Gulf of Aden but went as far as Tanzania's waters. Moreover, this policy would have forced constant vigilance on the patrollers' side. It was an option capable of bringing about a decrease in pirate incidents, but it was incomplete.

Lastly, a very popular option for its simplicity was simply deploying a large multinational naval force in the Gulf of Aden as well as along the Somali coast with the specific purpose of combating piracy. Combined navy taskforces were already present in the region because of the world of terror, and combating piracy was already becoming an ancillary concern.

In the end, the international community ended up responding to piracy by mixing these last two proposals. That is, they increased military presence from the Gulf of Aden to the Indian Ocean and escorted commercial ships along a straight line that was easier to watch over. Of course, private shipping companies also took their countermeasures: Ships started using barbed wires and acoustic devices for protection, and many also contracted private militias to stay onboard during the trip. The presence of armed security onboard is still common today.

Conclusion

Starting from 2013, the phenomenon of Somali pirates plummeted until it became practically invisible to the international community and world trade. The number of attacks from 2015 to 2020 is as low as 8. This welcomed figure is insignificant if compared to the 358 attacks of the five prior years. We could say that the international community has won its battle against piracy in the region, and maritime commerce has indeed become safer since 2011. International commentators and stakeholders attribute the decrease in piracy off Somalia's coast to a successful global collaboration and the efforts of regional organizations such as the Contact Group on Piracy off the Coast of Somalia. Global collaboration mainly meant increased institutional presence in the Gulf of Aden and the creation of safe corridors where commercial ships were meant to transit. International naval forces such as the European Union Naval Force, the Combined Maritime Forces or South Africa's Operation Copper seemed to have been essential in disrupting pirate activities.

Additionally, with the help of the international community, the Somali government has taken actual steps to rebuild and empower its law enforcement institutions for the last decade. Hence since 2015, they have been extending their influence in the areas where pirates were stationed which led to the shrinking of the free space in which the pirates was operating; and this further deterred the piracy logistics on land and curtailed their maritime operations.

Yet, this victory is a fundamentally unsatisfactory one. Piracy is a problem at sea with deep roots reaching inland. The most incisive war one could stage against piracy is one that happens on dry land. The results achieved by the international community come from their counter-piracy efforts, but the root causes of piracy are not fully addressed yet. These fundamental causes are the lack of employment opportunities (especially

in Somalia's coastal communities) and the lack of solid and effective institutions capable of governing maritime dynamics. Pirate groups and their behavior should be understood within the broader context of the country they operate in. The critical conditions of the previous years have simply allowed the aforementioned root causes to heighten and erupt the way the international community witnessed.

Prolonged civil war, political instability and absence of national accord in Somalia have created a zero-sum political struggle for power and resources, leaving poverty largely unaddressed. The emergence of sustainable and inclusive development through economic alternatives to illegal activities has not happened so far, and life inside the country remains harsh. As a consequence, piracy has not disappeared but merely gone dormant, as Somalia remains a potential host of further pirate enterprises in the future.

A 2018 report produced by the Center for Military Studies of the University of Copenhagen revealed that, while some pirates have in fact been captured by the authorities and are serving time in jail, they represent a minority. The greater part of pirate networks is still around, and the enterprises' kingpins did not disappear simply because of their inactivity (Jacobsen, 2018). These criminal networks are, in fact, solely attracted to revenue, whether it comes from piracy or other activities. After the international community took the matter seriously and worked to put a halt to piracy off the Somali coast, these criminal groups simply switched to other profitable activities. Patrol navies stationed near Somalia deter pirates, but they do not get involved in other illegal activities at sea.

For this reason, those previously designated as pirates may now be involved in other lucrative criminal networks, operating in the absence of effective authorities in Somalia and making profits by other means.

Neighboring countries such as Yemen provide ungoverned spaces for criminal networks to further adapt and expand their operations. There is no guarantee that once the international community fully shifts its attention away from Somali waters, criminal networks will not return to their old piracy business.

A potential line for future research interested in security in the horn of Africa and Somalia would be to map and comprehend how the criminal activity has evolved after the decline of piracy. In the meantime, we can safely assess that the conditions for a long-term solution to piracy are unmet. As long as Somalia won't have the capacity to handle security without international support, the root causes that allowed criminal networks to come into being will not be addressed. Building this kind of capacity in Somalia means continuing rebuilding of the country and its economy effectively, of course, with the backing of international support. This is a herculean task in light of the country's conflict and political instability. Until the institutions of the Somali state and its economy are properly rebuilt, the threat of resurgence in piracy hovers on the horizon.

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