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Fisheries, Ecosystems and Piracy: A Case Study of Somalia

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FISHERIES, ECOSYSTEMS AND PIRACY: A CASE STUDY OF SOMALIA

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Abstract: It has been argued that a possible root cause of Somali piracy is the (illegal) overfishing that has been taking place in the country's waters, which has deprived local fishers of their livelihoods, and which may be considered as another form of 'piracy'. In this paper, we explore the origins of this argument using both historical and ecosystem justice frameworks. We demonstrate in this contribution that this claim has some wings to it and that further research is needed to verify if this claim, as we suspect, is empirically valid.

Introduction

Piracy is not a modern phenomenon. The Act of robbing ships dates back over 2000 years to Ancient Greece, when it was recognized that the valuable cargo carried by ships could lead to huge being made from successful pirate raids. Roman ships were attacked for their cargoes of grain and olive oil (Murphy 2007). Between the 16th and 19th centuries, Governments licensed pirates known as 'privateers' and issued them with 'letters of marque' to attack and plunder enemy country ships, the spoils of which were shared with the pirates. The United States Constitution of 1787 specifically authorized Congress to issue 'letters of marque'. From the 13th century, Wokou pirates based in Japan began operations in East Asia that were to last for 300 years. With the growth in global trade, the struggle against piracy was a constant concern of merchant countries with lots of profit at stake. Organized piracy was formally ended in the 19th century when the majority of maritime nations signed the Declaration of Paris in 1856.

'Privateering' was outlawed and navies of each country were used to enforce this law. This resulted in the virtual disappearance of piracy by 1990.

Piracy worldwide has however made a comeback since the 1990s and remains an important issue today with estimated losses from the act at around $13-$16 billion per year concentrated in the waters between the Red Sea and the Indian Ocean, off the Somali Coast, the Strait of Malacca and Singapore (Burnett, 2002 and Dillion, 2000).

Table 1 shows the geographical distribution of locations in the world with the most incidents of piracy between 2003 and 2007. Indonesia recorded the most pirate incidents over this period with a high of 121 pirate attacks in 2003, declining gradually to 43 incidents by 2007. Generally, Table 1 reveals that pirate attacks in Southeast Asia have been on the decline while pirate attacks in Africa (particularly Nigeria, Tanzania and Somalia) are on the increase.

Table 1. Locations with most incidents of piracy 2003-2007.

Location	Year				
	2003	2004	2005	2006	2007
Indonesia	121	94	79	50	43
Malacca straits	28	38	12	11	7
Malaysia	5	9	3	10	9
Bangladesh	58	17	21	47	15
India	27	15	15	5	11
Nigeria	39	28	16	12	42
Gulf of Aden/Red Sea	18	8	10	10	13
Somalia	21	10	45	20	44
Tanzania	5	2	7	9	11

Source: International Maritime Bureau (2007).

However, by 2008 pirate attacks in Africa (dominated by Somalia) surpassed every other region in the world (Figure 1).
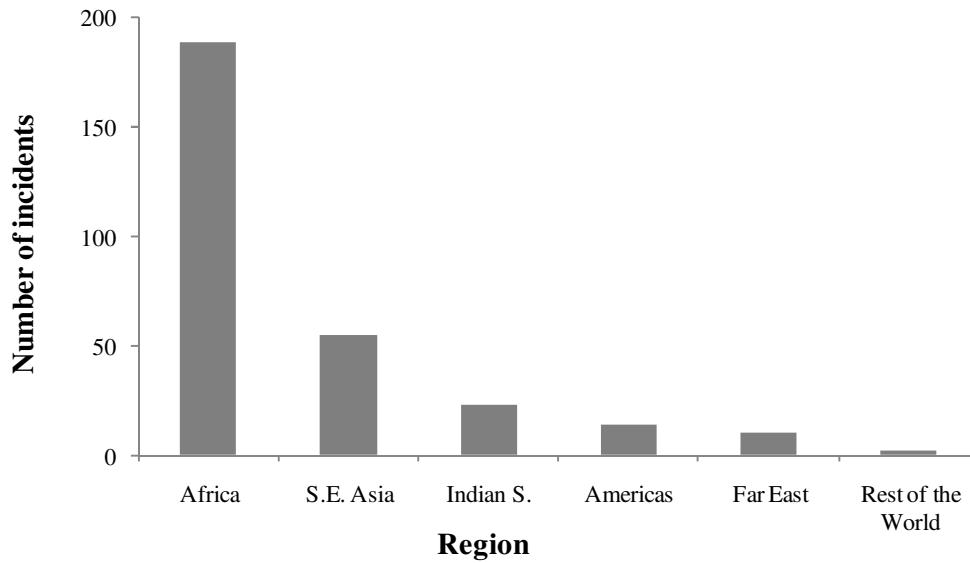
Figure 1. Pirate incidents by region of the world (Indian S. refers to Indian Subcontinent). Source: IMB (2009).

Causes of Piracy

Various factors have been identified as possible causes for piracy. We briefly discuss a number of these:

Opportunity- Favorable Geography

Piracy is likely to occur where pirates have the most opportunity to attack ships. A longer coast line provides more opportunity to pirates with more ships and more places from which to launch attacks. Also, the more ports engaged in maritime trade in a country, the more targets are available for pirates to attack as ships necessarily slow down as they enter port areas. Straits, bays, estuaries and achipelagos, where vessels are forced to move close to shore for navigational reasons provide easier targets for pirates. Murphy (2007) explains that this is why piracy has historically occurred in the narrow seas close to the Caribbean, the Mediterranean, the English Channel, the South China Sea, Souteast Asia, the Bay of Bengal, Somalia and Tanzania.

Legal and Jurisdictional Opportunities

Pirates may also take advantage of the existing international piracy laws which leave room for a lot of confusion and makes enforcement difficult. The international law of the sea defines piracy as:

- *Any illegal act of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or private aircraft, and directed:*

  (i)   on the high seas, against another ship or aircraft, or against persons or property on board such a ship or aircraft;

  (ii)   against a ship, aircraft, persons or property in a place outside the jurisdiction of any state

- *any act of voluntary participation in the operation of a ship or of an aircraft with the knowledge of facts making it a pirate ship or aircraft;*

Technically, therefore an act of piracy can only occur on the high seas and not within the territorial waters of a state. When these same acts occur within a state's territorial waters they are classified as "armed robbery". Pirates can take advantage of this definition by sailing from the high seas to the territorial waters of countries which are not able to effectively guard their coasts. They are usually safe because most states are unwilling to permit external navies within their territorial waters.

Furthermore, the restriction of the definition of piracy to acts "committed for private ends" excludes politically motivated acts or those committed by insurgents (Patretto, 2008). The law of the sea does not also adequately address what to do with persons committing acts of piracy who have been detained at sea. Operationally, detention of pirates on a warship indefinitely significantly impairs the ability of the ship to carry out its other missions.

Cultural Acceptability

Piracy in many societies (especially in Southeast Asia) has deep historical roots and is more accepted as a result. Murphy (2007) provides an example of the Tauseg communities of the Sulu archipelago that stretches between the southern Philippines and Borno where piracy was very respectable and encouraged amongst the men.

Poverty and the Promise of Reward

It has been argued that piracy is the result of poverty, social exclusion and relative deprivation (Frecon, 2005, and Burnett, 2002). The neoclassical rational choice literature on conflict (e.g. Grossman (1991) Hirschleifer (1995) Collier and Hoeffler (2004), assume that protagonists in a conflict are rational utility maximizing agents driven by the power to maximize power or windfall gains from victory. Collier and Hoeffler (2004) test the causes of civil conflict and find that "greed theory" (ability to finance a rebellion) considerably outperforms "grievance theory" (ethnic and religious divisions, political repression and inequality). If the payoff for conflict outweighs the calculated risk, war is chosen. Hirschleifer (1995) argues that the poor have a comparative advantage in violence because the opportunity cost of insurgency for young males in poor countries where there are few alternative opportunities for gainful employment is low. Vaag (1995) also argues that piracy is more likely after an economic depression or war, when many are unable to find work. The pirate, like any other criminal, will weigh the risks against the rewards of his/her actions. Gray et al (1991) that "For most, piracy is a low risk, high-paying job when compared to other lines of work they qualify for"

Absence of Private Property Rights over the Oceans

Leeson (2009) argues that the absence of ownership over the high seas means that no one has had much interest in preventing activities such as piracy which destroy the value of the oceans – "an oceanic tragedy of the commons". Private ownership of the oceans would imply that the owners would invest the requisite resources to maximize its value and this would mean a suppression of piracy. Consistent with the neoclassical school, he notes that pirates are essentially rational economic actors who respond to costs and benefits and we can therefore expect to see an increase in piracy when the benefits exceed the costs and vice-versa.

End of the Cold War

Liss (2003) has also argued that the end of the Cold War meant that there was less interest by the superpowers in maintaining a maritime military presence in many areas and this along with technological advances in the areas of weaponry, communications and fast attack boats and the intensification of global trade have encouraged piracy. These developments increase the reward while reducing the risk for pirates.

Conflict and Institutional Breakdown in Weak and Failed States

A "failed" state is characterized by loss of physical control of its territory or the monopoly on the legitimate use of force; erosion of legitimate authority to make collective decisions; an inability to provide reasonable public services; and an inability to interact with other states as a full member of the international community (The Fund for Peace)

The characteristics of a 'failing' or 'weak' state include a central government so weak or ineffective state that has little practical control over much of its territory. Other characteristics are non-provision of public services; widespread corruption and criminality; refugees and involuntary movements of populations; and sharp economic decline Rice (2003).

The territory of a state does not stop at its shores. It includes an Exclusive Economic Zone (EEZ) reaching territorial waters (up to 12 miles from the coast) and to 200 nautical miles from the coastline. A weak or failed state is unable to protect those waters. Police and military forces have to be well trained and equipped. Piracy has historically tended to thrive in weak coastal states where police and the military are understaffed as well as badly equipped and therefore unable to secure the coasts (Pettreto, 2008, Teiter, 2001). In weak or failing states formal government structures are weak, corruption is rife, the state is unable to deliver public services, the rule of law is limited, and informal systems of governance are most influential. This environment is very agreeable with pirates

Furthermore, for piracy to thrive, shores and anchorages have to be accessible to the pirates where they can seek refuge, refit, unload cargo, and conduct ransom negotiations. Well guarded

ports with strong security would rather be avoided by pirates. The more underpaid or unpaid executive authorities are, the more they would be likely to connive with pirates. In this regard, Sorenson (2008) argues that access to the state is also essential for the pirate. Capturing a ship is not the difficult part of the operation for pirates but maintaining control, to the extent that the loot can be discharged or ransom obtained is the most difficult part and in this regard a weak or compliant state is important. Piracy not only requires weak law but lax law enforcement.

The critical factor, amongst all the causes of piracy discussed thus far (e.g geography, poverty, opportunity, unemployment, etc.) is a weak state with weak institutions that allow piracy to flourish. This is because there are many countries with favorable geography and poverty for example where piracy has not arisen. Murphy (2007) agrees, and makes the point that "In *the end it is states individually and collectively that determine whether piracy flourishes or fails"*.

Is a failed or weak state a necessary and sufficient condition for piracy to emerge? Nincic (2008) explores the link between state failure and piracy.   The correlation between the *Foreign Policy and Fund for Peace* 'Failed State Index' (FSI) and pirate attacks suggests that "there does seem to be a relationship" and this is even more pronounced in the case of Africa[1]. Countries with FSIs above 90 are considered "highly failed", while those with FSIs between 60 and 90 are "moderately at risk", "failing" or "weak". The vast majority of pirate attacks in Africa (83% in 2007) have occurred in highly failed states and 100 percent of all pirate attacks in Africa occurred in either "highly failed" or "moderately failed states" (Table 2). The failed state indicator therefore appears to be a necessary condition for maritime piracy.

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[1] Seven out of the top ten Failed States in the FSI rankings are from sub-Saharan Africa. Somalia is top of the list for 2008 and 2009.

Table 2. Failed State Index (FSI) and pirate attacks in Africa 2005-2007.

Piracy related event	2005	2006	2007
Total number of pirate attacks in littoral African countries listed in FSI	62	50	83
Percent of littoral countries in Africa listed in FSI experiencing pirate attacks	41	46	36
Percent of African pirate attacks occurring in most at risk littoral countries (FSI > 90)	74	62	83
Percent of African pirate attacks occurring in moderate risk littoral countries (FSI 60 - 90)	26	38	17

Source: Ninic (2008).

However, in 2007 for example, 35.5% of all highly or moderately failed states in littoral Africa listed on the FSI experienced at least one pirate attack, which demonstrates that the state failure, while necessary, is not a sufficient condition for maritime piracy.

What conditions would be sufficient? On area that has as yet not been explored in the literature is the issue of the threat to the livelihood of coastal fishing communities when a state is failing or has failed. Would a lack of fishing opportunities as a result of conflict, rebellion or environmental degradation turn fishermen into pirates? How does conflict, state failure or a breakdown of state institutions affect fishing? Hendrix and Glaser (2009) examine the impact of civil war on marine fisheries. They note that the evidence from civil conflicts in places like Sri Lanka, Lebanon, and Liberia indicates that civil war has a strong negative effect on marine fish catch. Theoretically, they suggest a number of explanations for this observation. First, civil war crowds out the investment of time and energy in productive activities towards violent or security-seeking activities. Fishers (almost exclusively men) are targets by both the state and insurgents for recruitment (Caroll James (2008), Stuhdler (2008)). Second, civil war, to the extent that it has a maritime component can decrease fisheries exploitation as result of the limitations placed on human activities during conflict: "a war-zone refugium". The conflict may result in a displacement of the coastal fishing population as happened in Sierra Leone Thorpe et al (2009). Third, counterinsurgency strategy may result in a deliberate destruction of fishing related physical and human capital (e.g. Sri Lanka vs Liberation Tigers of Tamil Eelam (LTTE)) as well as the blockade of ports. Fourth, the breakdown in state institutions and the diversion of military capacity towards land-based insurgents may result in illegal, unreported and unregulated (IUU) fishing. All these factors will result in a decline fish catches.

**Illegal, Unreported and Unregulated (IUU) Fishing and Piracy**

The inability of weak or failed states to protect their territorial waters turns their waters into an open access fishery for all intents and purposes. In an open access fishery, the use of marine resources is not subject to any controls, and no well-defined property rights (individual, communal or state) are in existence and/or enforced. Because fishers are free to harvest the resource at any time, and because they know that anyone can harvest the resource at will, individual fishers will, it is argued, conclude that if they allow some fish to escape today there may not be the opportunity to catch that fish tomorrow. This kind of thinking pushes economic agents into 'mining' the ecosystem for fish that command a price in the marketplace - the infamous "race for the fish" (Gordon, 1954). This leads to the degradation of the ecosystem.

To the extent that the absence of 'ecosystem justice' threatens the livelihoods and survival of coastal communities, one can expect a response from the communities in terms of appeals to the state or to the international community (Sumaila and Bawumia, 2000). Coastal fishing communities in democracies with strong institutions can ultimately react (not with their spears or guns but with their thumbs) at the ballot box through voting against incumbent Governments, In failed or weak states, the coastal communities may take the law into their own hands by forming vigilante coastguards.

One of the missing links in the literature that connects state failure to piracy is the question of how the breakdown in state institutions results in piracy. What are the transmission mechanisms? One answer may lie in a combination of IUU fishing and the threat to ecosystem and their impact on the livelihoods of fishing communities. Today, one of the most severe problems affecting world fisheries is illegal fishing. Illegal fishing and the destruction of the ecosystem in threatening the livelihoods of fishers, can in the context of a failed or weak state, result in ship piracy.

THE CASE OF SOMALIA

By 2008, efforts to reduce piracy saw significant declines in reported attacks across the world except in Africa where piracy has been on the rise and Somali piracy accounted for 111 of the 189 incidents reported. Piracy in the Gulf of Aden and Indian Ocean off the Somali Coast reached unprecedented levels in 2008, with the number of attacks increasing 152 percent from 2007. Somali pirates hijacked 42 vessels in 2008, taking 815 hostages International Maritime Bureau (2009). The IMB defines piracy as "an act of boarding or attempting to board any ship with the intent to commit theft or any other crime and with the intent or capability to use force in the furtherance of that act" IMB (2005). Its data is based on this definition.
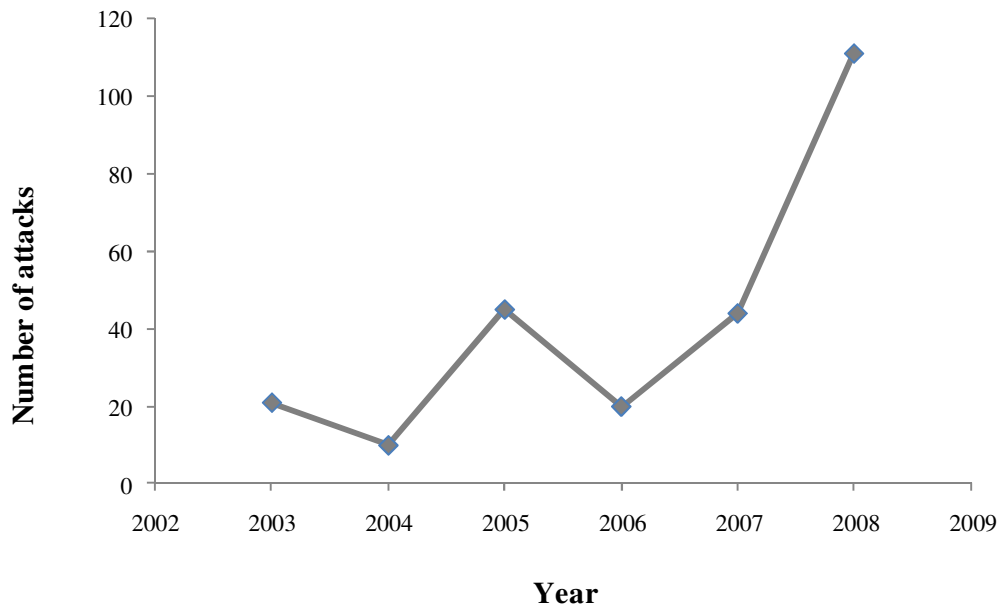
Figure 2. Actual and attempted pirate attacks in Somalia. Source: IMB (2009).

The Somali piracy attacks have not only increased in numbers but also in sophistication. Towards the end of 2008 Somali, pirates hijacked two ships carrying important cargo, the *MIV Faina* (an Ukranian vessel loaded with Soviet era tanks and ammunition) and the *MIV Sirius Star* (a massive Saudi oil tanker laden with a billon dollars worth of crude oil. Lennox (2008) notes that these high profile attacks showed that the pirates have a wide network of spies in ports to alert them of promising targets. "They have been trained in and thought seriously about tactics

required to take hostage vessels that are multiple stories their height". They also have skilled negotiators, spokesmen, financiers, and an extensive money laundering network. The *MIV Sirus* was released after a ransom of $3.5 million was paid in used notes. On April 8, 2009, Somali pirates seized the U.S. flagged vessel *MV Maersk Alabama* (which was contracted by the World Food Programme to deliver USAID food assistance to Somalia) and held its 20 member crew hostage until U.S. Special Forces mounted a successful rescue operation on April 11, 2009 (Lennox, 2008).

The average pirate attack is launched by a cell of 10 armed pirates typically divided into three skiffs powered by 40-50 horsepower outboard engines. Coordinated attacks involving three to five boats are used to distract, unsettle and attack targeted vessels until one gang is able to board. The pirates are kitted with grappling hooks, aluminum ladders, rocket-propelled grenades, satellite phones, global positioning systems, knives, rifles and fishing lines. Vessels are fired upon, compelled to slow down, boarded by the pirates and sailed to anchorage off a friendly local town while ransom negotiations take place. Pirates rarely harm their hostages. In this regard, Somali piracy is different from piracy in the Straits of Malacca or Nigeria where ships are boarded to take the vessel or its contents. Somali pirates are in the business purely for the ransom money. The average ransom is estimated to be between $500,000 and $2 million. According to Murphy (2007), the aim of Somali pirates is to exploit the difference between the marginal value placed on human life in Somalia and its value in the outside world.

Somali pirates operating in the Gulf of Aden or the Indian Ocean accounted for nearly 60.0 percent of worldwide piracy in the first quarter of 2009 and between January and May 2009, pirate hijackings surpassed the total for 2008 (IMB, 2009). As at the end of May 2009, the IMB reported that 300 hostages on 18 hijacked vessels were in Somali captivity.

The pirates are in groups of poor and unemployed young men (late teens to early 30s), battle-hardened clan-based militia, and fishermen who are forcibly recruited for their navigational skills (Gilpin, 2009).

CAUSES OF PIRACY IN SOMALIA

Conflict Institutional Breakdown

Somalia, attained independence in 1960 with the coming together of two former British and Italian protectorates to form the Republic of Somalia. Aden Abdullah Osman was elected as the first president. The first peaceful transfer of power took place in 1967 when Abdi Rashid Ali Sharmarke beat Abdullah Osman in the 1967 presidential elections[2]. The new President was assassinated in the same year and before a successor could be found, Major General Siad Barre staged a coup d'état. He declared Somalia a socialist state in 1970.

There was an attempted coup on the government of Siad Barre in 1978 following a lost war with Ethiopia in 1977. Siad Barre crushed the coup plotters but felt more insecure. This led to the overt reliance on his relatives and members of his clan (Darood-Mareehan) in appointments to many key positions. In doing this, Siad Barre antagonized the other clans and his government lost all claims to being a government of national unity. Siyad Barre was overthrown in 1991 and Mogadishu was captured by the United Somali Congress (USC), dominated by the Hawiye clan family. They could not present a common front, however, and civil war broke out in Mogadishu between General Farah Aideed and Ali Mahdi. The former British protectorate of Somaliland (in the north-western region, which is dominated by the Isaaq clan) declared independence from the rest of Somalia in May 1991. In 1998 Local authorities in north-eastern region set up the semi-autonomous Puntland State of Somalia. Puntland is itself wracked by civil strife and has been since 1991.[3]

Menkhaus (2007) that in the course of 16 years of state collapse, Somalia has endured 14 failed reconciliation conferences. Governments that have been installed after some of these peace and reconciliation conferences have failed because they have tended to be clan-based and lacked national legitimacy. This was the case for the Transitional National Government (TNG) established in 2000, after peace talks in Djibouti, which was dominated by the Mogadishu-based clans, especially the Hawiye/Haber Gedir/Ayr sub clan. The Mogadishi-based clans are supported by the Arab world, anti-Ethiopian, more overtly Islamist, and embraces the concept of

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[2] Somalia History (see http://www.infoplease.com/ipa/A0107979.html. Accessed on January 25, 2010).
[3] Ibid.

a nationalist central Somali state. They are opposed by clans under the umbrella of the Somali Reconciliation and Rehablitation Council (SRRC), who are dominated by the Darood clan-family, backed by Ethiopia, are anti-islamist, and federalist[4].

The TNG failed and in its place the Transitional Federal Government (TFG) was established with U.N. backing in 2004, dominated by the SRRC and lineages of the Darood clan. The TFG basically repeated the mistakes of the TNG and did not form a true government of national unity and therefore failed to gain the support of the Mogadishu Group.

In June 2006, the Coalition of Islamists (ICU) led by Sharif Sheik Ahmed, after a four month battle with TFG forces, seized control of Mogadishu. Fearful of Al Qa'ida gaining a foothold in Somalia, the United States backed the Ethiopian Government to oust the ICU in December of 2006 and the TFG was reinstalled. The presence of Ethiopian troops in Mogadishu irked the local population to no end an insurgency of clan militias and Islamist fighters took up arms against unpopular Ethiopian troops in 2007, resulting in the displacement of some 300,000 Somalis. Under a U.N. brokered peace plan, Ethiopian forces withdrew from Somalia in January 2009. In the same month, Sharif Sheik Ahmed, the former leader of the Islamic Courts Union, which was kicked out by Ethiopian forces in December 2006, was elected President of Somalia under the TFG.

A U.N. Expert Group on Somalia (2008) notes that despite the formation of the TFG, Somalia still does not have an effective central Government, which controls the entire country. Instead, it has at least three administrations with divergent objectives: i) the TFG which aims to be a national government; ii) Government of Somaliland, which aims to be the Government of an Independent Somaliland; and iii) Government of Puntland which aims to be the government of the semi-autonomous region of Puntland. By all accounts Somalia is a failed state, maintaining the number one position in the Failed State Index (FSI) for the last two years.

The role of the weak state in supporting piracy is underscored by the fact piracy was not known in Somalia during the Siad Barre and earlier regimes. Siad Barre's government, for example, maintained a maritime force to protect Somalia's enormously rich fisheries resources and restrict

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[4] Ibid.

the tendency toward piracy and maritime crime. But when the Siad Barre regime collapsed in 1991, the door to instability was opened Weir (2009). Furthermore, during Somalia's civil war, the only period during which piracy appears to have been stemmed in Somalia was during the six-month rule of the Islamic Courts Union in 2006 and this indicates that a functioning government is capable of controlling piracy (Middleton, 2008).

Opportunity - Geography

A major global trade route - the Red Sea/Suez Canal - one of the busiest in the world, and the vital link for Persian Oil trade with Europe, passes adjacent to the Horn of Africa. All merchant vessels transiting between the Mediterranean and the Indian Ocean will pass by Somalia, Sudan Eritrea and Djibouti (Nincic, 2008). 95 percent of all Far East trade to Europe and some 50 percent of the world's oil transit these waters.

Somalia has the longest straight-line coastline in Africa. It comprises almost the entire African coast of the Gulf of Aden and a long stretch of the Indian Ocean, with many safe harbours for hijacked ships, most hijacked ships are taken to harbours in Puntland, while sSome of the coastal villages used by the pirates include Eyl, Bossaso, El-hur, Harardheere and Hobyo.

Poverty versus Potential Reward

The reward for piracy is relatively high. Ransoms collected by Somali pirates in 2008 are estimated to be in the region of $50-$130 million (Gilpin, 2009). This figure is very significant in the context of the Somali economy which earns less than $100 million annually from its main exports of livestock (Middleton, 20080. Somali pirates are in the business purely for ransom money, with the average ransom estimated to be between US $500,000-$2 million Lennox (2008) The ransom monies are also estimated to exceed Somaliland's and Puntland's annual government income of ten million dollars by three to four times. Gilpin (2009) estimates that the annual income per pirate (after accounting for the costs of financing the operation and the

financier's share) is some $15000 in the country with a per capita income of $291 (2007 UN Estimate). These levels of income are a major attraction for many young men.

Revenues from pirate ransoms are spread across different sectors and are visibly noticeable in places like Garowe in Puntland where new large homes have been constructed, more expensive four wheel drives are appearing on the streets and the price of marriage dowry is getting more expensive UN Expert Group (2008). The fact that so many people in northeastern and central Somalia benefit from the ransom monies creates a serious disincentive for political leaders to address the problem. This is especially the case in Puntland, which has been described as "a pirate version of a narco-state" (Middleton, 2008).

It is also argued that given the economic injection piracy gives to Puntland and the integration of pirates into the Puntland society, pirates are also exercising political influence and this explains the inability of the Puntland militia to challenge the pirates (Sorenson, 2008).

ILLEGAL FSHING AND PIRACY IN SOMALIA

Fishing in Somalia

Fitzgerald (2002) reports that unlike other areas of coastal Africa, important fishing ports failed to develop along the Somali Coast. This is attributed to the centuries old aversion to fish eating by Somalis, who are largely a pastoralist people.

However, Somalia has a long history of fishing along the coast which can be traced to the Bajuni and Amarari. They are fishers, sailors and merchants derived from a mixture of coastal populations. Their ancestors included Arab or Persian settlers and seafaring peoples of India and the East Indies who established settlements along the Somali coast more than 1000 years ago. Both the Bajuni and Amrari inhabit small fishing communities in and near Baraawe, Mogadishu, Merca and the inland town of Adgooye on the Shabelle River (Federal Research Division, 2004).

In modern times, the fishing sector in Somalia received government attention during the 1974-75 droughts, which devastated the pastoral economy. The drought resulted in government incentives

to nomad families to settle permanently in fishing cooperatives. 15000 such nomads were resettled in a number of cooperatives in 1975 (Haakonsen, 1979, Fitzgerald, 2002). The fishing cooperatives were not successful, but there nonetheless remained local fishing communities whose livelihoods were very dependent on catching fish.

Following the 2004 tsunami, the World Bank announced two grants from the Japan Social Development Fund to support the needs of Somalia. The World Bank Country Director for Somalia, Kenya and Eritrea noted that *"As you might recall, the tsunami devastated the northeastern part of Somalia, resulting in 78 people being killed and 211 missing. At the same time, the tsunami exacerbated an already precarious situation, given already existing environmental degradation, drought and periodic floods. **The fishing industry, which provided livelihoods to much of the coastal community, was particularly hard hit"** (**emphasis ours**)*[5]**.**

The country's small fishing sector revolves around the catch and canning of tuna and mackerel in the north. Sharks are often caught and sold dried by artisanal inshore fishers. In southern Somalia choice fish and shellfish are processed for export.[6]

Data on Somali Fisheries

The data on Somali fisheries is scanty and generally unreliable, with wide divergences in various reports. Fishing remained a largely unexploited sector, contributing less than 1 percent of GDP in 1990.[7]

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[5] Pers. comm. by Colin Bruce, World Bank Country Director at Signing Ceremony of grants to help Somalia cope with effects of tsunami. World Bank Conference Room. Kenya. November 16, 2005.
[6] Encyclopedia Britannica (see http://www.britannica.com/EBchecked/topic/553877/Somalia/37726/Agriculture-forestry-and-fishing. Accessed on January 25, 2010).
[7] Somalia Fishing (see http://www.photius.com/countries/somalia/economy/somalia_economy_fishing.html. Accessed on January 25, 2010).

Muses and Taco (1999) report, the estimated actual annual domestic catches to be about 2000 tonnes of fish, 450 tonnes of lobster, 100 tonnes of shark and 20 tonnes of shrimp. The market for all fin fish is consumed locally, while shrimp and lobster are exported to United Arab Emirates (UAE).

FAO data (1950-2006) reports that Somali marine landings increased from 6,000 tonnes in 1950 to 29,000 tonnes by 1994 before declining to 27,300 tonnes by 2001. Between 2002 and 2006, the FAO, in the absence of reports from Somalia, fixed at 29,800 tonnes. The *Sea Arounnd Us* project (www.seaaroundus.org), by assigning ex vessel prices to reported catches (Sumaila et al., 2007), estimates the landed value of these catches in real 2000 US$ to be US$6 million in 1950, increasing to US$32 million by 2002, with no change since then.
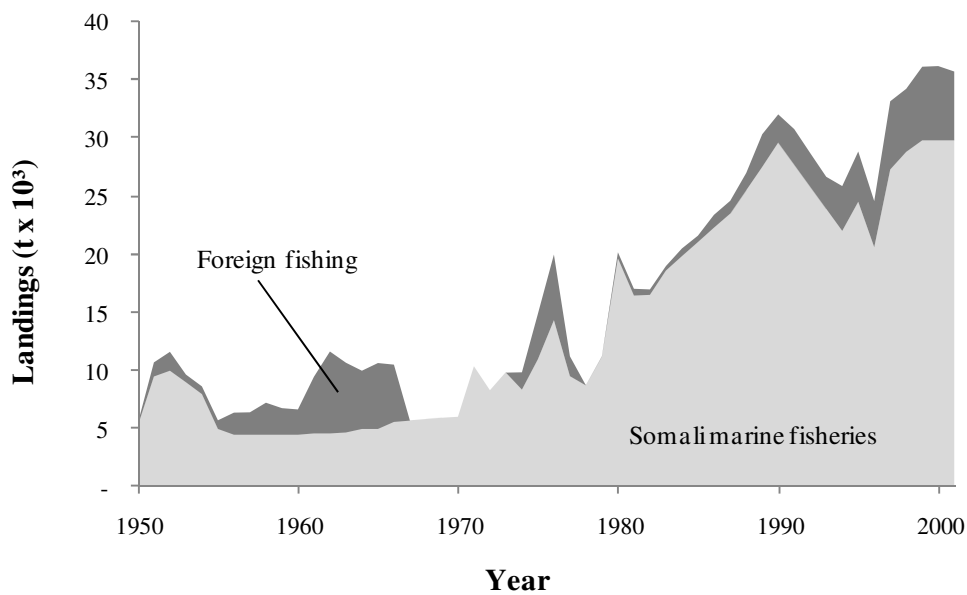
Figure 3. Landings of Somali marine fisheries and additional landings by foreign fishing (likely strongly underestimated, see text) as reported by FAO and projected using the *Sea Around Us* (www.seaaroundus.org) catch allocation model (Watson *et al*. 2004).
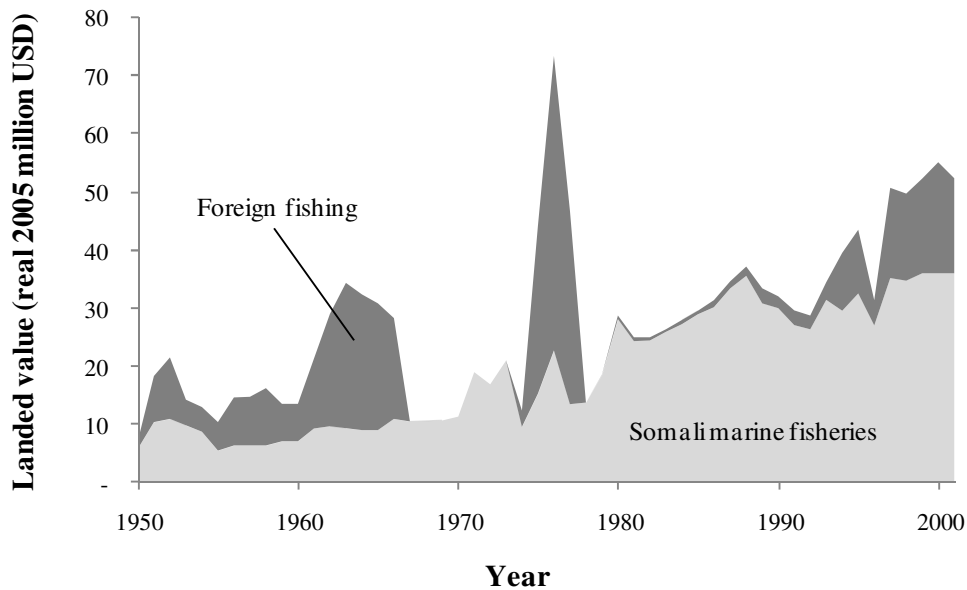
Figure 4. Landed value of Somali marine fisheries and additional landed value by foreign fishing (likely strongly underestimated, see text) as reported by FAO and projected using the *Sea Around Us* (www.seaaroundus.org) catch allocation model (Watson *et al*. 2004).

Illegal Unreported and Unregulated Fishing in Somalia

As a result of the nutrient-rich water upwelling from the depths of the northern Indian Ocean, the coast of Somalia has some of the most productive fish stocks in the world. Somalia's waters are home to abundant and diverse marine resources including whales, whale sharks, dugongs, dolphin, tuna, shrimps, and lobsters Coffen-Smout (2009).

The collapse of the Siad Barre government in 1991 and the ensuing civil war meant that there was/is no central government to protect Somalia's marine and fisheries resources. A United Nations naval taskforce associated with UN peacekeeping operations (UNOSOM I and II) patrolled the Somali waters between 1991 and 1995 but when the UN left Somalia in 1995, there was no central body or institution to undertake this role (Weir, 2009). The situation ashore was even worse with the collapse of the country's government, economy and infrastructure amidst a civil war.

With no government in place, Somalia's rich fish waters provided a juicy target for foreign commercial fishing vessels (Gelchu and Pauly, 2007). Foreign vessels from France, Spain, Korea, Greece, Britain, Ukraine, China, Taiwan, Yemen, Saudi Arabia, Russia, India, Egypt, Pakistan, Japan, Belize, with many of them flying flags of convenience to evade EU and other regulations (Coffen-Smout, 2009, Waldo, 2009),   The High Seas Task Force (HSTF, 2006) reports that there were 800 such vessels engaged in illegal fishing at one time in 2005. It is estimated that more than $450 million worth of tuna, shrimp, lobster and other sea life is being taken away from Somali waters by vast foreign trawlers (Waldo, 2009). These Illegal, Unreported and Unregulated (IUU) fishing vessels put unsustainable pressure on fish stocks and destroy the wider marine ecosystem because they do not abide by rules that restrict harvesting of juveniles, gear modification, closed spawning grounds, etc.

Figure 5 is a global map of IUU fishing in 2004, and the intensity of illegal fishing off the coast of Somalia is very noticeable – an indicate that the intensity of reported pirate attacks along the same coast may not be a coincidence.
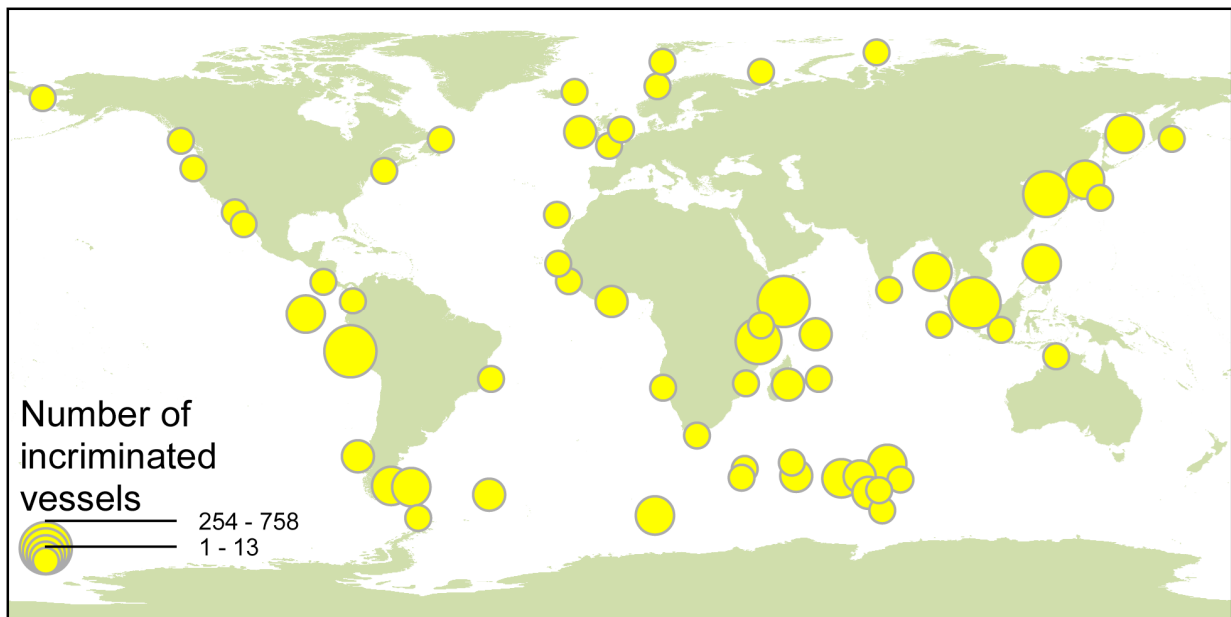

Figure 5. Number of incriminated vessels for fishing illegally between 1980 and 2003. Source: Sumaila *et al*. (2006).

These foreign IUU fishing vessels were not only taking advantage of the situation to fish illegally in Somali waters, but also there was dumping of toxic and hazardous waste - including nuclear material, and lead-(.Mofokena and Mussa, (2009) and Gelchau and Pauly (2006)). It is reported that after the 2004 tsunami, hundreds of dumped and leaking barrels were washed up on shore and people began to suffer from radiation sickness, resulting in more than 300 deaths (UNICEF, 2006). Perpetrators include an Italian firm (Progresso) and Swiss firm (Achair Partners) who the UNEP found following an investigation that they were set up specifically as fictitious companies by larger industrial firms to dispose of hazardous waste. Muses and Taco (1999) report that it became common place for thousands of tonnes of fish and other marine animals are washed to the shore dead.

There was therefore a different kind of piracy and criminal activity taking place in Somali waters by foreign vessels in the form of robbing the Somali people of their livelihoods, marine resources, ecosystem and health. There was injustice from an ecosystem perspective.

Somali Response to IUU Fishing Vessels and Toxic Dumping

Even though fishing accounts for less than one percent of GDP in Somalia, it was the lifeblood of the Somali coastal communities. (Waldo, 2009) The severe droughts of 1974 and 1986 destroyed the livestock of large groups of nomads who were subsequently resettled along the villages on the Somali coast. The ongoing civil war also made farming and the pastoral way of life dangerous. As far back as 1991, illegal fishing trawlers competing with local fishers within Somali waters with sometimes disastrous consequences for the local fishers who had their nets destroyed, boats crushed or lost their lives (Waldo, 2009)

Somali fishers, local authorities, civil society organizations and international institutions made a number of attempts to draw international attention to their plight with no positive feedback. Basically, it appeared that no one was interested in or wanted to get involved in Somalia. Table 3 highlights some of these complaints.

Table 3. Somali complaints about IUU fishing vessels and toxic dumping.

Date	Complaint
Sep-91	Somali Salvation Democratic Front- SSDF- (administering northeastern regions) issues press statement warning all IUU fishing vessels to stay out of Somali waters.
Apr-92	SSDF writes to Italian foreign minister drawing his attention to illegal Italian fishing activities.
Sep-95	Leaders of all Somali political factions and two major NGOs jointly write to to UN Secretary General B.B. Ghali with copies to EU, OAU, OIC, Arab League detailing IUU and toxic dumping activities in Somali waters and requesting UN intervention to protect the water ways.
Jan-98	UNDP resident representative in Somalia expresses apprehension about the danger posed to Somali marine resources and environment by foreign vessels.
2005	UNEP Desk report indicates that waste dumping has been occurring on Somali beaches since the 1990s and was made official through a contract signed in 1992 between Swiss and Italian shipping firms and Elmi Osman, a Somali militia leader.
1998-2006	Different Somali leaders and ministers have similarly complained to the international community on the same issues.
2008	UN. Special Envoy to Somalia decries the prevalence of IUU fishing and toxic dumping in Somali Waters.

Source: Based on information from Waldo (2009).

In response to the non-response from the international community, Somali fishers formed themselves into bands of local "coast guards" to ostensibly protect their livelihoods and Somalia's marine resources. They would board the foreign vessels and demand compensation for fish caught (Weir, 2009)[8]. Somali piracy therefore evolved initially as an effort by local fishers to protect Somali marine resources and ecosystem. The IUU fishing vessels in response armed themselves and bargained with the local war lords for "fishing licenses" which were also illegal under international war (as the clans had no legal authority to issue them) (Weir, 2009).

However, the local militias found fishing license revenue very lucrative and it was not long before other groups (non-fishers) joined in to get their share of the juicy foreign fishing vessel pie. Just as the IUU fishing vessels saw Somali waters as juicy, so did the Somali's see the foreign fishing vessels. The problem has gotten more serious and any ship (fishing or not) is now fair game. Poverty, lack of employment and the volatile political and security situation has

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[8] Ibid.

brought in more pirates, including many who cannot swim and therefore rely on local fishermen. For many young males, piracy has become the only avenue for survival (Gilpin, 2009).

Dealing with Somali Piracy

Using International Naval Forces

Thus far, the international response to the problem of rising piracy off the coast of Somalia has focused on the deployment of naval forces in one guise or another to ensure the safe passage of ships and deter piracy. Over 30 naval vessels from more than a dozen countries have been deployed.[9]

In this regard, the United Nations has sought to provide the international maritime forces the legal backing to combat piracy off the coast of Somalia. United Nations Resolution 1816, passed in June 2008, authorizes states in cooperation with and prior notification of the TFG to *"enter the territorial waters of Somalia for the purpose of repressing acts of piracy and armed robbery at sea,….use within territorial waters of Somalia, in a manner consistent with action permitted under the high seas with respect to piracy under relevant international law, all necessary means to repress acts of piracy and armed robbery"* This resolution was extended for twelve months in December 2008 (Resolution 1846). (UN Experts Group (2008)).

Resolution 1851, passed in December 2008 extends 1846 by authorizing states and regional organizations, at the request of the TFG to "*undertake all necessary measures that are appropriate in Somalia for the purpose of suppressing acts of piracy and armed robbery at sea*"

Based on Resolution 1851, a Contact Group on Piracy off the Coast of Somalia (CGPCS), made up of 24 Governments and five regional and international organizations was formed in and held its first meeting in January 2009 (Ploch et al, 2009). In January 2009, the U.S. Naval Forces Central Command established the Combined Task Force 151 (CTF-151) to conduct anti-piracy operations off the Gulf of Aden and the Somali coast.

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[9] These countries include Australia, Canada, China, Denmark, France, Germany, Greece, India, Iran, Italy, Japan, South Korea, The Netherlands, Pakistan, Portugal, Saudi Arabia, Russia, Singapore, Spain, Sweden, Turkey, United Kingdom, and the United States.

Notwithstanding all these efforts at naval deployment, piracy off the coast of Somalia in 2009 (as was noted earlier) is proceeding at a higher rate than in 2008, with hijackings by the end of the June 2009 surpassing the total for 2008. Sorenson (2008), for example, has argued that so long as the expected profits from piracy exceed the costs, piracy is likely to continue. Naval deployments may result in a temporary reduction in the acts of piracy, but the pirates will soon adapt and change their tactics. The naval deployments are also very expensive[10] and size of the Somalian EEZ, many more ships will be needed to provide an effective deterrence than the numbers currently deployed.

Political Solution on Land

It has been argued that Somali piracy is a symptom of an underlying problem on land (the problem of a failed state or weak government). Fashioning out a political solution and the subsequent institution of a functioning state with is key to bringing back law and order as well as providing the basis for the pursuit of coherent policies throughout Somalia to deal with the problems of poverty and unemployment as well as the criminal gangs. Indeed it is difficult to envisage how alternative employment opportunities can be created without a stable and well functioning government. The experience with the government of the Islamic Courts Union in 2006 as well as the government of Somaliland which were quite successful in stopping piracy in their areas of influence buttresses the case for backing a government in Somalia that would eliminate piracy through law enforcement. While this appears to be the most viable solution it also appears to be the most intractable as Somalians have been in search of such a legitimate government since 1991 with very little success.

Other Proposals

Menkhaus (2009) discusses various other options in dealing with the piracy problem. These include; living with piracy as an unavoidable nuisance; arming the cargo ships; taking the war to

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[10] The EU's Atlanta Naval Force is estimated to cost some $450 million a year.

the pirates onshore; attacking the financiers of piracy; stopping the payment of ransom; naval patrols; backing a government that would eliminate piracy through law enforcement. He notes however that all of these options have shortcomings and may not work well. The most viable option, he argues is that of backing a government that would eliminate piracy through law enforcement.

Gilpin (2009) suggests a number of strategies including the application of 'smart power' (diplomacy with force); development assistance; engaging civil society and isolating criminals; and bolstering Somalia's neighbours to police and prosecute piracy effectively. Many other analysts have offered proposals along these lines (e.g. Middleton (2008)).

However, one missing and related solution to the issue of Somali piracy that has not been systematically addressed is the issue of ecosystem justice. It is interesting to note that none of the UN resolutions to combat piracy in Somalia authorizes the various naval powers to deal with the problem of illegal fishing or dumping of toxic waste off the Somali coast. This is either an oversight or can be interpreted as a green light for IUU fishing and toxic waste dumping. Dealing with IUU fishing and toxic waste dumping must be part of any long term solution to piracy in Somalia.

Conclusion

Piracy is not a modern phenomenon and dates back to ancient Greece. After appearing to die down by the 1990s there has been a resurgence of pirate incidents recently with increasing pirate attacks in Africa (off the coasts of Somalia, Tanzania and Nigeria). The explanations for piracy have included factors like poverty, unemployment, opportunity, geography, culture, conflict and a breakdown of state institutions. In this paper we focus on the link between state failure, fishing and piracy, noting that state failure or weakness while necessary is not sufficient for the emergence of maritime piracy. We examine the implications of IUU fishing on global marine resources and how it links to the concept of ecosystem justice. IUU fishing in threatening ecosystem justice may elicit a response by fishermen in the form of piracy. Nigeria, Tanzania and Somali particularly have issues with IUU fishing. We argue that the origin of piracy in

Somalia is a result of a combination of state failure, IUU fishing, toxic waste dumping and its impact on the ecosystem. The civil war in Somalia has resulted in a failure of government and government institutions (including the coast guard to protect Somali waters). This has resulted in Somali waters being turned into an open access fishery with no ability to enforce its property rights. Fishermen filled the vacuum of the absence of a coast guard and took fishing vessels hostage for ransom. They have since been joined by other actors who have found this a lucrative enterprise in the context of extreme poverty, high unemployment, and favorable geography.

Resolving the problem of piracy therefore requires a multifaceted approach, including (i) the establishment of a viable Somali state with the rule of law, and (ii) action taken to prevent illegal fishing and toxic waste dumping to provide support for the local fishing industry.

Further Research

Against this background, a number of areas need further investigation. First we need to reconstruct fisheries catches for Somalia given the unreliability of the existing data. Second, we need to test a number of hypotheses on the linkages between fisheries and piracy; e.g. has the civil war resulted in a reduction in the fish catch? Has illegal fishing resulted in a reduction in the fish catch? Are pirates recruited among ex-fishers? Third, we need to understand the relationships between the institutional and socio-economic context, IUU fishing and piracy through a field based comparative analysis of fisheries (case studies). Fourth, it would be interesting to deconstruct representations of armed piracy and IUU fishing in Somalia in local, regional and international media and understand the institutional processes and outcomes of anti-piracy interventions.

Acknowledgements

References

Burnett, J.S. (2002) Dangerous waters: modern piracy and terror on the high seas. Dutton, New York.

Caroll, J. (2008) What the pirates say. Boston Globe, November 24.

Coffen-Smout, Scott. Pirates, Warloards and Rogue Fishing Vessels in Somalia's Unruly Seas (see
        http://www.chebucto.ns.ca/~ar120/somalia.html. Accessed on January 25, 2010).

Collier, Paul and Anke Hoeffler (2004) Greed and Grievance in Civil War. Oxford Economic Papers 5, 563-595

Dillion, D.R. (2000) Piracy in Asia: a growing barrier to maritime trade. Backgrounder 1379. Heritage Foundation.
        www.heritage.org

Federal Research Division (2004) Somalia a Country Study (see
        http://books.google.ca/books?id=Yv74WDpVrVgC&printsec=frontcover#v=onepage&q=&f=false.
        Accessed on January 25, 2010.

Fitzgerald, N. (2002) Somalia: issues, history and bibliography. Nova Science Publishers. New York.

Foreign Policy and Fund for Peace (2005), Failed States Index, Foreign Policy, 149, 56-65.

Frecon, E. (2005) Piracy in the Malacca Straits: notes from the field. IIAS Newsletter 36.

Gelchu, A., and D.Pauly (2007) Growth and distribution of part-based fishing effort within countries' EEZ from
        1970 to 1995. Fisheries Centre Research Reports 15: 99.

Gilpin, R. (2009) Counting the costs of Somali piracy. Working Paper for the U.S. Institute of Peace, Washington
        DC, June 22.

Gordon, S. (1954) The economic theory of a common property resource: the fishery. Journal of Political Economy
        62:124-42.

Gray, J., Monday, M. and G. Stubblefield (1999) Maritime terror: protecting yourself, your vessel and your crew
        against piracy. Paladin Press, January. Harris, M. (1998). Lament for an ocean. The collapse of the Atlantic
        cod fishery: a true crime story. McClelland and Stewart, Toronto, April 11.

Grossman, H.I. (1991). A general equilibrium model of insurrections. American Economic Review, 81, 912-21

Haakonsen, J. (1979). Survey of the fishing cooperatives for resettled nomads in Somalia. A report presented to the
        Minister of Fisheries, Somali Democratic Republic and the Food and Agriculture Organization of the
        United Nations, Rome and Mogadishu, January 1979 (Reprinted in October 1980).

Hansen, S. (2008) 'Piracy in the greater Gulf of Aden: Myths, Misconception and Remedies', NIBR Report
        2009:29, Oslo: Norwegian Institute for Urban and Regional Research (NIBR). ISBN: 978-82-7071-810-8

Hendrix, C. and S. Glaser (2009) Beating fishhooks into spears? Civil conflict, crowding-out effects and marine
        fisheries, 1951-2004. Paper presented at the Texas Triangle International Relations Conference, Houston,
        Texas, January 31.

High Seas Task Force (2006) Closing the net: stopping illegal fishing on the high seas. Governments of Australia, Canada, Chile, Namibia, New Zealand, and the United Kingdom, WWF, International Union for Conservation and Nature, and the Earth Institute at Columbia University.

Hirschleifer, J. (1995). Theorizing about conflict. *In* K. Hartley and T. Sandler (eds), Handbook of Defense Economics, Vol. 1, Elsevier Science Amsterdam, 165-89

International Maritime Bureau (2005) Piracy and Armed Robbery Against Ships. Annual Report 2005. London United Kingdom

International Maritime Bureau (2007) Piracy and Armed Robbery Against Ships. Annual Report 2007. London United Kingdom

International Maritime Bureau (2009) Piracy and Armed Robbery Against Ships: Special Report, 2009. London, United Kingdom

Leeson, P. (2009) The invisible hook: the hidden economics of pirates. Princeton University Press; 1st edition, April 20.

Lennox, P. (2008) Contemporary piracy off the Horn of Africa. Canadian Defence and Foreign Affairs Institute. Calgary, December.

Liss, C. (2003) Maritime piracy in Southeast Asia. Southeastern Asian Affairs 52-68.

Menkhaus, K. (2007) The crisis in Somalia: tragedy in five acts. African Affairs 106:357-390.

Menkhaus, K. (2009) The Seven ways to stop piracy. Foreign Policy, April (see http://www.foreignpolicy.com/story/cms.php?story_id=4872. Accessed on January 25, 2010).

Middleton, R. (2008) Piracy in Somalia: threatening global trade, feeding local wars. Chatham House Briefing paper, October 2008 (see http://www.chathamhouse.org.uk/publications/papers/view/-/id/665/. Accessed on January 25, 2010).

Mofokena, N. and S. Mussa (2009) The Somali pirates. Trans Africa Forum, Policy Brief, July, Washington DC.

Murphy, M. (2007) Contemporary piracy and maritime terrorism Adelphi Papers 388.

Muses, G. H. and Tako, M. H. (1999) Illegal fishing and dumping hazardous wastes threaten the development of Somali fisheries and the marine environments. *In* Tropical Aquaculture and Fisheries Conference, 99 held on 7th-9th September, Park Royal Hotel, Terengganu. Malaysia (see http://www.mbali.info/doc236.htm. Accessed on October 14, 2009).

Nincic, D. (2008) State failure and the re-emergence of maritime piracy. Presented at the 49th Annual Convention of the International Studies Association, March 26-29, San Francisco, CA.

Patretto, K. (2008) Weak states offshore: piracy in modern times. Discussion paper for East African Human Security Forum, March 2008.

Ploch, L., Blanchard C., O'Rourke, R., Mason, C., King, R. (2009 Piracy Off the Horn of Africa. Congressional Research Service. Washington. September 2009.

Remarks by Colin Bruce, World Bank Country Director at Signing Ceremony of grants to help Somalia cope with effects of tsunami. World Bank Conference Room. Kenya. November 16, 2005.

Rice, S.E. (2003) The new national security strategy: focus on failed states. Brookings Policy Brief Series 116. www.brookings.edu

Sorenson, K. (2008) State failure on the high seas- reviewing the Somali piracy. Swedish Defence Research Agency. FOI Somalia Papers Report 3, November.

Stuhldreher, K. (2008) To turn the tide on piracy, bring justice to its fisheries Christian Science Monitor, November 19.

Sumaila, R. and M. Bawumia (2000) Ecosystem justice and the market place. *In* Just fish: ethics and Canadian marine fisheries. Edited by Coward, H., Omner, R., and T. Pitcher. Institute of Social and Economic Research, Memorial University of Newfoundland (ICER), St. John's, Newfoundland.

Sumaila, U.R, Alder, J., and Keith, H. (2006) Global scope and economics of illegal fishing. Marine Policy, 30(6): 696-703.

Sumaila, U.R., Marsden, D., Watson, R., and Pauly, D. (2007) Global ex-vessel fish price database: construction and applications Journal of Bioeconomics, 9, 39-51.

Teitler, G. (2001) Piracy in South East Asia: a historical comparison. University of Amsterdam and the Royal Netherlands Naval College.

Thorpe, A., Whitmarsh, D., Baio, A., Kemokai, M. and T. Libbie (2009) Fisheries and failing states: the case of Sierra Leone. Marine Policy 33:393-400.

U.N. (2008) Final report. Expert Group on Piracy off the Somali Coast, November.

United Nations (1982). UN Convention on the Law of the Sea. December 1982

UNICEF (2006) Rebuilding Schools and Communities in Tsunami Affected Somalia (see http://www.unicef.org/infobycountry/index_37332.html. Accessed on January 25, 2010).

Vagg, J. (1995) Rough seas? Contemporary piracy in Southeast Asia. British Journal of Criminology 35: 63-80.

Waldo, M. A. (2009) The two piracies in Somalia: Why the world ignores the other? Sandi Consulting and Associates (see http://wardheernews.com/Articles_09/Jan/Waldo/08_The_two_piracies_in_Somalia.html. Accessed on January 25, 2010).

Watson, R., Kitchingman, A., Gelchu, A., and D. Pauly. (2004) Mapping global fisheries: sharpening our focus. Fish and Fisheries 5:168-177.

Weir, G. (2009) Fish family and profit: piracy and the Horn of Africa. Naval War College Review.