THE PROSPECTS FOR ENDING PIRACY AT SEA

Leila L. Goedhals-Gerber*, Heinrich W. Freiboth**

Abstract

Since the earliest days of maritime trade, piracy has been a great cause of concern for the maritime community. During recent years it has evolved into a highly lucrative "profession", which serves as a financial outcome to people in some of the poorest regions of the world, including Somalia, while disrupting important international supply chains at a great cost to trade. This paper investigates the geography of modern maritime piracy and the common socio-economic circumstances that underlie the causes of Somali piracy. Key findings include the fact that maritime piracy in the Gulf of Aden has recently declined as a result of coordinated international efforts, but remains a serious threat with cost implications for the maritime transport industry and world trade. The paper concludes by identifying the need in Somalia to change the incentive structure that promotes piracy as an alternative to legal pursuits. This can be achieved by restoring a central authority in the country, creating a stable and safe social environment, and re-establishing formal economic and financial systems.

Keywords: Piracy, International Supply Chains, Maritime Transport Industry

* Department of Logistics, Stellenbosch University, Private Bag X1 Matieland 7602,
Tel: 021 808 2252
Cell: 0833984320
E-mail: leila@sun.ac.za
** Department of Logistics, Stellenbosch University, Private Bag X1 Matieland 7602,
Tel: 021 808 9491,
Cell: 0722830767
E-mail: hwf@sun.ac.za

Introduction

Piracy at sea has been a scourge that adds substantially to the costs of maritime trade since shipping originated, but despite the combined efforts of the international community of developed nations and their mighty navies, its eradication in modern times has not been achieved. In recent years, measures to combat piracy have consumed more resources than ever before and the question arises of whether policing waters infested with pirates and with ships armed for combat will really achieve a solution. In common with other crime motivated by poverty, resort to piracy as one means of re-distributing wealth to the communities of poor countries can perhaps be avoided by pre-emptive social measures initiated by the wealthy developed nations.

During 2013, nine suspected attempts at piracy, as defined in article 101 of the United Nations Law of the Sea (UNCLOS) 1982, occurred in the shipping lanes between Yemen and Somalia, as against 51 actual hijackings and 130 attempts in 2009. This decline in piracy is undoubtedly the outcome of three main factors. Firstly, patrols in that area by up to 20 warships from different nations at any time; secondly, surveillance of the bases of the pirates by drones

belonging to the United States; and finally, management practices by the shipping industry, including the hiring of armed guards by ship captains at great cost during the part of the voyage when their ships are at most risk to interception. Boarding by pirates is also prevented by fast steaming, despite the higher consumption of fuel.

Although the measures have succeeded in significantly reducing piracy in those shipping lanes, the social and economic reasons underlying the business of the pirates remain. With the inevitable reduction in the expense of the security that the international community is willing to afford and the increasing reluctance of ship operators to bear the costs of armed guards and fast steaming, piracy will surely resume unless other solutions can be found.

The study begins with a detailed literature review discussing the definition of maritime piracy, an outline of the international law on piracy and the legal uncertainties surrounding it, the main geographic areas where piracy occurs, and the socio-economic circumstances leading to maritime piracy in Somalia. It then follows with an in-depth discussion of the costs to the shipping industry and the economic consequences for international trade, as well as the main security measures taken by the international

community in response to piracy. The paper concludes with a discussion of permanent solutions.

Literature Review

Definition of piracy at sea

There are numerous definitions in literature that describe the act of piracy. The International Maritime Bureau (IMB) defines piracy as "the act of boarding any vessel with intent to commit theft or any other crime, and with an intent or capacity to use force in furtherance of that act". Piracy is defined by the Oxford Dictionary (2014) as "the practice of attacking and robbing ships at sea" and it is defined by Gard (2013) as "robbery or illegal violence at sea". However, the definition most often referred to when studying piracy and its economic impact, is that of article 101 of UNCLOS, 1982:

(a) "any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:

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

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

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

(c) any act of inciting or of intentionally facilitating an act described in subparagraph (a) or (b)".

However, there may be cases of acts of violence motivated by personal enrichment as well as for political and ideological reasons (United Nations Office of Legal Affairs Division for Ocean Affairs and the Law of the Sea (DOALOS). Nevertheless, UNCLOS, 1982, can be regarded as the key international convention for the repression of piracy at a global level (Fouche, 2006: 63).

International law on piracy

Under International and South African law "piracy" is restricted to the high seas. Violent criminal attacks on vessels within a State's territorial waters are regarded as armed robbery by the International Maritime Organisation. Although they are legally classified as different acts, armed robbery at sea has the same negative effect on national interests as piracy - both are a criminal acts and illegal.

Article 38(1) of the Statute of the International Court of Justice describes the sources of international law, which might be relevant to piracy, as:

- international conventions, referring to treaties, which are viewed as a primary source
- international customs, which have been evidenced as a general practice accepted as law;

- the general principles of law recognized by cultured nations; and
- historical judicial decisions and the teachings of the most highly qualified publicists, as auxiliary means for the determination of rules of law.

The rules relating to entering into treaty agreements and the stipulations in respect of termination and interpretation of treaties are governed by the Vienna Convention on the Law of Treaties of 1969.

The following are a few examples of relevant sources of international law:

United Nations Convention on the Law of the Sea: The United Nations Convention on the Law of the Sea (UNCLOS, 1982) was adopted on the 10th of December 1982. UNCLOS serves as the basis upon which the jurisdiction, liberties and rights of states at sea are built.

The first important limitation imposed by UNCLOS is that a criminal act upon a ship is only regarded as piracy if it occurs on the high seas. The majority of the criminal acts that would qualify as piracy if they had been committed on the high seas occur within territorial waters where only the coastal states may exercise jurisdiction. If a signatory state to UNCLOS enacts a national law criminalizing acts of piracy committed within its territorial jurisdiction it would be acting in contradiction to the convention (Staniland, 2004).

The second UNCLOS limitation in terms of the definition of piracy is the "two- ship" concept requiring the act to be committed with the intention of private gain by the private crew of a private ship. Thus, an attack by a person travelling on the 'victim' vessel and a politically motivated attack are not regarded as piracy.

Convention for the Safety of Life at Sea: The International Convention for the Safety of Life at Sea (SOLAS) concerns safety at sea and the threat of accidents caused by unsafe ships and unsafe ship operations (Meija & Mukherjee, 2004:317). Guidelines relating to the protection of ships against terrorist threats and sabotage were introduced by The International Chamber of Shipping (ICS) including an Automatic Identification System (AIS) enabling the identification of ships at sea. Chapter V of SOLAS (Safety of Navigation) required ships to install AIS by the end of December 2004 (Williams, 2004:349).

In December, 2002, SOLAS was amended to enable the adoption of the International Ship and Port Facility Security (ISPS) code. The ISPS code, which came into effect on the 1st of July 2004 (Meija & Mukherjee, 2004:317), contains detailed security related requirements for governments, port authorities and shipping companies in a mandatory section, together with a set of guidelines about how to meet those requirements in a second non-mandatory section (Fouche, 2006: 75). The objective of the ISPS code is to identify security threats and take preventive

measures to avoid and mitigate their effects on ships or port facilities used for international trade. These amendments to SOLAS were intended to improve maritime security and hence also to prevent incidents of piracy (Mukundan, 2004a: 311).

Geography of modern piracy

There are four regions in which shipping is most vulnerable to modern piracy.

Piracy has a long history in the Caribbean region, comprising an abundance of small islands with hidden coves from which the passing Spanish and Portuguese galleons carrying gold and silver to Europe were attacked. The same geographic features that aided these early pirates are still being used today, but the focus has shifted to the cargo ships and tankers that pass through the Panama Canal as well as to the cruise ship industry that has been established in the Caribbean.

The Malaccan Straits between Indonesia and Malaysia is a narrow 800km long passage that serves as one of the busiest waterways in the world (Bateman, 2010). It is part of the major sea route connecting Eastern Asia to Western Asia, Africa, and Europe that is used by thousands of ships carrying 40% of the world's trade. The high number of ships carrying valuable cargo and their close proximity to land in the waterway are easy targets for pirates from

bases in the many small islands with sheltered coves in which to hide.

The Gulf of Guinea has become an important area for oil exploration and production during recent times, leading to a substantial influx of investment in the region. However, the industry has not alleviated the poverty endured by most of the population, but has created opportunities for pirates to share in the wealth it generates. Attacks have been mostly on oil tankers along the coasts of Guinea, Benin, Nigeria and Cameroon.

The fourth important region in which modern piracy occurs is the Gulf of Aden. Somalia's strategic location on the Gulf within striking distance of the busy East-West sea-lane between Europe and the Far East has been the base for piracy costing traders and the shipping industry millions of USD. As their techniques have evolved, the pirates' activities have extended further into the Indian Ocean, with attacks reported as far away as India in the East and Mozambique in the South, covering a vast stretch of ocean and making the problem more difficult to confront (International Chamber of Commerce, 2011). This region will form the basis of the discussion in the rest of this paper.

The latest statistics show that globally, piracy is most prevalent in Asia and Africa. Figure 1 depicts a detailed breakdown of the affected regions.

Figure 1. Total incidents as per region of the world January-December 2013
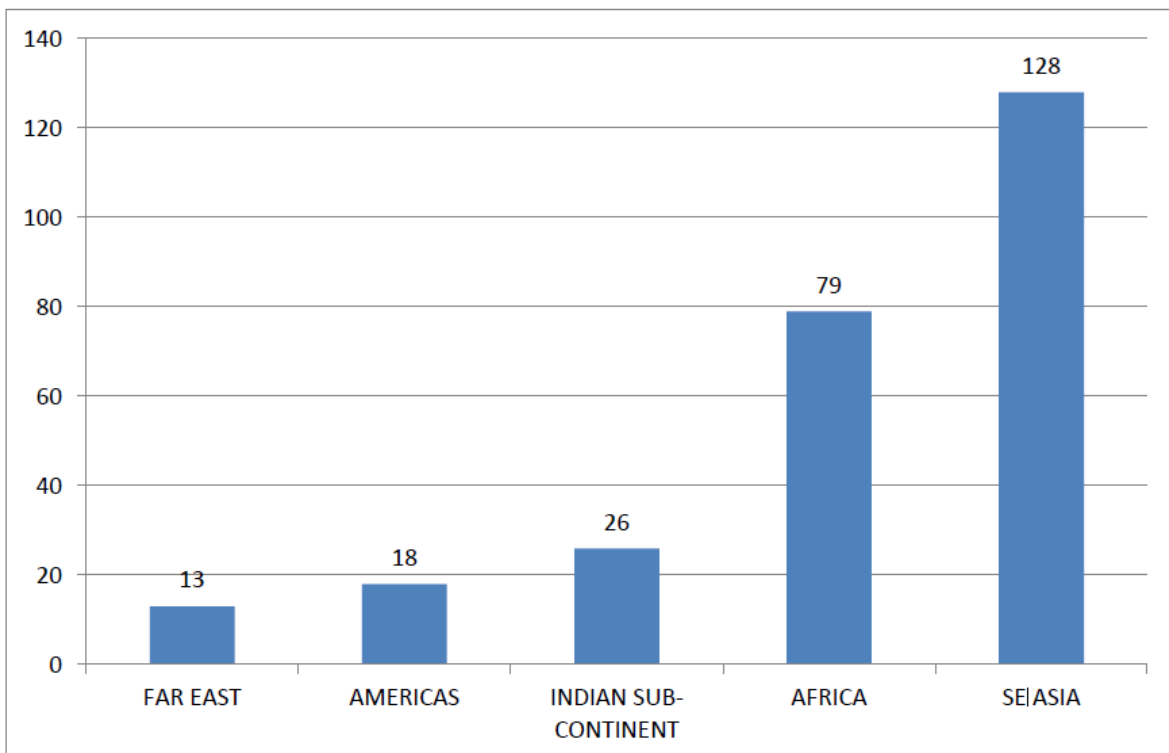
Source: ICC International Maritime Bureau 2014

Socio-economic circumstances leading to piracy based in Somalia

Somalia is one of the poorest countries in the world with an estimated per capita gross domestic product (GDP) of between $284 per year (UNDP 2012) to $600 per year (African Development Bank Group 2013). Extreme poverty is prevalent throughout the country, with 73% of the population surviving on less than $2 a day (at purchasing power parity) (UNDP 2012). The civil war has left the country without a formal economy and damaged and out-dated infrastructure, making it difficult to induce foreign investment into the region. Despite the collapse of formal markets, the informal sector has been growing steadily and has helped to counter the economic deterioration reflected in the decline of the official GDP. The main drivers of the informal economy are in agriculture, telecommunications and transport, bolstered by remittances from the growing number of refugees that have fled the country. These accounted for 71.4% of the gross national product (UNDP 2012).

Somalia is not abundant in natural resources and with a share of approximately 65% of GDP, agricultural activity is the largest economic sector in the country. The area has a volatile climate that includes extreme droughts and flooding, often destroying herds of cattle and disrupting food supplies. Together with unsustainable farming practices such as overgrazing of pastures and the lack of regulation of the agricultural resources, the country is prone to periods of famine and disease. Without an effective way to spread relief from foreign aid organizations because of logistical problems resulting from the internal wars, the conditions in the country have escalated into a humanitarian crisis, with the death toll estimated as high as 260 000 people for the period of October 2010 to April 2012 (United Nations, 2013).

Fishing has been the traditional occupation along the coast of Somalia for several centuries. The coastal regions saw heavy fighting during the civil war leaving the local fisherman without their main source of food and income. With a defunct navy and no way to control the coastline, the Somali territorial waters have been vulnerable to poaching by foreign fishing vessels. These vessels are technologically far more advanced than the boats used by the local fishing fleet and through bottom trawling and huge catches, the sea life has largely been destroyed and will struggle to regenerate (Kraska, 2010).

Even worse for the local maritime ecosystem than the illegal poaching is the dumping of toxic wastes that took place during the 1990's. The 2004 Indian Ocean earthquake and tsunami that devastated the Indian and South Asian coast also caused extensive damage along the Somali coastline, killing 176 people and destroying fishermen's' houses and their boats (Plaut, 2005), while strong waves washed up barrels of the toxic industrial and nuclear waste that had been illegally dumped in Somali waters. The main perpetrators of the dumping seem to have been European firms that found the unguarded Somali coastal waters to be a cheaper alternative than the European waste disposal centres and dumped anything from radioactive nuclear waste to industrial, medical, and toxic chemicals. This resulted in several outbreaks of disease and radioactive-related illnesses in the areas where the waste washed ashore. So far, the damage that the waste has done to the environment and the sea life along the East African coast remains unknown (Clayton, 2005).

In literature, a large portion of researchers identify the main cause of piracy to be linked to the economic situation of the affected regions (Hansen 2009; Jablonski and Oliver 2012). Furthermore, Jablonski and Oliver (2012) suggest that the possible income from piracy is higher than the income from working in a different field. Globally, piracy is most prevalent in Asia and Africa (as explained previously). This supports the fact that piracy is triggered by economic instability in a country, as stable regions have far fewer recorded incidents. Consequently, it can be concluded that socio-economic conditions in Somalia have been a great driver of the piracy based along its coast.

Extreme poverty, famine, and the collapse of markets has left local fishing communities with very few alternative forms of income to sustain their livelihood, than to resort to maritime banditry. Fishermen have banded together as pirates and patrol Somalia's territorial waters to prey on passing ships for their new source of income. The hi-jacking, looting and ransoming of ships and the kidnapping of crew have turned out to be lucrative business attracting more and more people desperate for survival.

Research Method and Design

The main aim of this article is to ascertain whether the security measures that have been implemented by the international community have eliminated the threat of maritime piracy off the coast of Somalia.

Secondary questions that are investigated include:

- What is the legal definition and international legislation surrounding maritime piracy?
- Which geographical regions are affected by modern maritime piracy?
- What are the socio-economic circumstances leading to piracy off the coast of Somalia?
- What is the cost to shipping and consequences for international trade?
- Are the security measures taken by the international community in response to piracy effective, and is it a sustainable solution?

In order to answer the research questions an exploratory, qualitative research approach was

followed. This included a manual content analysis of secondary data on maritime piracy. Sources that were analysed include academic articles, popular articles, trade literature, and published statistics from government and research organizations.

Discussion

Costs to shipping and consequences for international trade of piracy based in Somalia

Ship operators trading between Asia and Europe have two choices of route: either the preferred shorter route past the Horn of Africa and through the Suez Canal, or the longer route around the Cape of Good Hope. According to Fu *et al* (2010) piracy is an important variable taken into account when making the decision.

Choosing to pass through the Gulf of Aden and the Suez Canal (Route A) saves both voyage time and fuel, which are the main variables in shipping costs, as opposed to sailing around Africa (Route B). A VLCC will reduce its voyage time by 74% when taking Route A instead of Route B from the Persian Gulf to Rotterdam, while a container ship's voyage time between Singapore and Rotterdam is reduced by 44% (Marlow, 2010). That amounts to a saving in voyage time of approximately two weeks, offsetting the charges for using the Suez Canal. However, the logistical and financial advantages of using Route A come with the risk of an attack by pirates and the costs of preventative measure.

Operating a large modern ship is capital-intensive: January 2014 average spot rates for the charter of a VLCC were $39 100 per day, while a 4500 TEU container vessel costs $8 000 per day on average to operate (RS Platou, 2014). With an average hostage duration of 316 days during ransom negotiations, charter costs heap up, while the ship remains unproductive. Additional costs are incurred when hiring a security contractor to handle the ransom negotiations and the physical delivery of the payment. Finally, there is still the actual ransom fee to be paid, with the average amount reaching $5 million in 2010 (Oceans Beyond Piracy, 2011). Insurance policies exist that cover the risk of pirate attacks, but rates have increased significantly and have reached $20 000 for single voyage cover through the Gulf of Aden. The same policy averaged only $500 in 2007 (Kraska & Wilson, 2008).

If the ship operator chooses Route B, it will save the potential costs resulting from the loss of a ship to pirates as well as the charges for passage through the Suez Canal, but the longer voyage will add two weeks of steaming and double the delivery time for cargo. The increase in distance of steaming will consume approximately 750 extra tonnes of fuel and raise crew costs and other voyage variables commensurately (International Maritime

Organisation, 2011). Longer periods at sea also require more expensive insurance cover, while the voyage around the Cape of Good Hope is accompanied by a high risk of damage to ships because of the freak waves that result from the co-incidence of currents and winds.

Kraska and Wilson (2008:43) estimate that maritime piracy results in annual losses of $13-$15 billion for shipping companies. As any increase in international shipping costs are eventually borne by cargo owners and so raise prices and reduce trade, the ultimate effect is detrimental to the world's economy. Although it can be argued that the resort to piracy is merely an attempt by those driven by dire poverty to improve their socio-economic circumstances or, more broadly, to redistribute income from rich to poor nations by force, neither the economic costs of successful piracy nor the economic costs of combating piracy are worth the outcome. The economic costs of piracy to trading nations far exceeds the proceeds of the pirates, while the costs of combating piracy through naval patrols, drone attacks, on board equipment and the employment of armed guards surely exceeds the expense of buying-off would-be pirates and obviously could be better spent by improving the impoverished circumstances of the communities that spawn piracy. No doubt, complex economic analysis is needed to determine the true consequences of modern piracy for the world's economy, but the result would be misleading if account is not taken of the international cost of allowing the root causes of piracy to continue. If, for example, the reverse multiplier effect of a slight decline in trade between the EU, as the world's largest market, and its trading partners is taken into account, it is evident that the indirect consequences of piracy warrant investment by the wealthy countries in a socio-economic solution.

The local Somali economy has been severely damaged by two decades of civil war and famine. Piracy has turned out to be a highly lucrative alternative to legitimate jobs, with pirates earning up to 17 times as much as the average Somali citizen (Kraska, 2010). Piracy has evolved a market of its own, with stock exchanges in the local towns where ordinary people can "invest" in a pirate squad in return for a cut of the profits. It has led to a large inflow of foreign cash to the coastal communities as the ransom is divided between the clan-elders, financiers, land-based security squads and the pirate crews. The money is usually laundered through legitimate business enterprises in Somalia or the neighbouring countries – especially in the more stable Kenya.

Apart from the positive impact on the Somali economy, the remainder of the region is worse-off as a result of reduced marine traffic. Piracy has rendered the coastal waters unsafe and East Africa is losing in excess of $1 billion per year in trade. Countries along the East African coast are also incurring losses

because of reduced fishing activity. Island holiday destinations including those in the Seychelles and Maldives have lost out on tourist income as operators of cruise ships have become reluctant to visit the region. The diversion of ships around the Cape of Good Hope has resulted in a reduction in traffic through the Suez Canal and Egypt is losing revenue in excess of $500 million per year (Oceans Beyond Piracy, 2011).

The disruption of shipping is not sustainable as even the monetary cost to trading nations far exceeds the monetary benefits to the local Somali economy. A more stable economic alternative to the regional economy based on the earnings of pirates is imperative if an enduring solution to the ransoming of ships and crews as the primary industry in Somalia is to be found.

Security measures taken by the international community in response to piracy

The International Maritime Organization (IMO) launched its action plan to deal with piracy on 21 July 2011. That includes a review of the current IMO guidelines for preventative, evasive and defensive measures to combat piracy, as well as promotion of related issues and the raising of awareness of the risk of interception (International Maritime Organisation, 2011).

The concern about piracy internationally is clear from co-operation and coordination among naval and other forces of several countries in the West Indian Ocean region and the Gulf of Aden to escort ships carrying humanitarian aid to Somalia and to protect vulnerable shipping (International Maritime Organisation 2014a). However, the sea area in which the pirates now operate is substantial, which makes effective monitoring of ship movements and patrolling difficult, particularly when the resources available are limited. According to the IMO, more permanent resources in the form of naval vessels and aircraft, are needed to win the battle against piracy (International Maritime Organisation 2014a), but as contended in this paper, policing at increasing cost is unlikely to succeed without eliminating the socio-economic need to resort to piracy.

In the attempt to prevent piracy, ship operators have implemented various measures. Ships are now fitted with razor wire and electric fences while non-lethal weapons such as high-pressure water hoses, sound guns and other technical innovations are also employed. While many ship operators have remained wary of employing private security companies to guard their ships, those that have done so seem to have found the cost justified.

As governments have begun to understand the dangers of piracy to the shipping on which they are dependent, they have started to implement their own measures. NATO, the EU and India and Russia all have warships on patrol in the Indian Ocean. The area is also patrolled by maritime patrol aircraft which can warn vessels when pirates are operating, while the United States has used drones to locate (and presumably destroy) the bases of pirates. The Kenyan army's invasion of Somalia has also deprived the pirates of many launching points (The Telegraph 2014).

The involvement of international navies has contributed to the implementation of maritime regulation off the East African coast and provides an integral monitoring service that protects cargo ships as they pass through the vulnerable corridors. Vessels have been adapted to make it more difficult for pirates to board the vessels. Pirates usually attack in smaller, much faster vessels thus preventing cargo ships from retreating. Furthermore, new systems have been developed that provide defence mechanisms to protect ships from attackers. Some of these mechanisms include sound canons, which induce excruciating discomfort and irreversible hearing damage, laser cannons, pepper dispensing projectiles, and light cannons, which induce temporary blindness (Somali Pirate Clampdown 2014)

Ultimately, the measures adopted have led to the decrease in piracy off the Somali coast. According to the International Maritime Bureau there were only nine hijackings during 2013, which is a great improvement over the number of incidents during 2008 and 2009. In addition to these preventative measures, the central Somali government is slowly stabilizing administration and implementing regulation, which is also contributing to the decrease in the number of piracy incidents (Somali Pirate Clampdown 2014).

Despite the success, these measures are only short-term solutions aimed at containing the problem, instead of addressing the root cause of Somali piracy. According to Chalk (2010), this is the fundamental weakness of the current anti-piracy initiatives. He further argues that the size of the monitored area and the number of vessels that transit through it requires a fleet of patrol ships far greater than what has currently been made available, of which the financial expense would not be sustainable in the long run. At the end of the day, the only long term solution will involve addressing the socio-economic problems in Somalia, as identified previously in this paper.

Long term solutions to piracy off the coast of Somalia

When a country has no central government and no formal economic sector, and continuous warring, famine, and extreme poverty have existed for more than 20 years, it can be expected that the incentive structure found in a normal functioning society will change. Participating in a life threatening activity such as piracy is then not considered more dangerous than seeking work from home, as the risk of being

killed at sea is no greater than the risk of being killed in crossfire or dying of hunger at home. Piracy also carries a much higher financial payoff, with the average pirate earning $10 000 per year as opposed to the per capita income of $600 for the average Somali worker (Carney, 2009). Apart from the personal enrichment of the pirates, others also benefit when the pirates return, and distribute foreign ransom money locally.

Changing the incentive structure and creating sustainable alternatives to piracy-based economies along the East African coast, are the only real solutions that will avoid the escalation of piracy in the long term. Relying on the international outlawing of piracy through conventions and combating it with force can at best provide a temporary solution and probably compel perpetrators of piracy to shift their trade to other illegal activities such as smuggling emigrants, drug trading or terrorism. A comprehensive solution will thus comprise the achievement of local goals and the fulfillment of global responsibilities.

There are three key local goals, which are interdependent. The first is to restore central authority. As the current transitional government has had little success in restoring central authority, it not recognized by all the clans in Somalia. Only a government that proportionately represents all the major clans in the country is likely to be acknowledged. Some success has been achieved in the two autonomous northern regions where the majority of the population traces its lineage to two different clans – the Issaq in the northwest and the Darood in the northeast. By following that model, the creation of similar autonomous regions for the largest clans in the southern region can possibly lead to better cohesion between the different population groups (Hesse, 2010).

The second goal is to create a stable and safe social environment. That will be possible only through some form of central authority to enforce the law through punishment, which is vital in order to change the incentive structure. Once a legitimate legal system enforcing punishment for transgression is in place, illegal activities, including piracy should decrease, provided, however, Somalis have an alternative set of legal options from which to choose. That alternative constitutes the third goal.

When central authority and social order have been restored, work can begin on reestablishing an economic and financial system in Somalia. Foreign investment is crucial to the achievement of that goal and will be forthcoming only when the country is deemed politically stable enough to justify the risks. Job creation will follow and illegal industry should decrease.

These three goals can only be achieved with the help of the global community. Piracy is a global problem that indirectly affects all countries through increased costs of end products or through the negative impact on trade. It is thus in every country's best interest to help find a solution. A comprehensive global solution must necessarily include certain short and long term goals. The immediate goal for the international community should be to establish peace and order in the Gulf of Aden, making it safe for ships to travel in that area without the threat of piracy. A coalition force consisting of naval forces from various countries is presently patrolling the area and escorting convoys of ships through the danger zone. This has had limited success due to the complex nature of the international law governing piracy - a dilemma that naval powers face when capturing and holding pirates. Releasing them to the Somali authorities is not presently an effective option, as the collapse of the central government has left no authority to deal with the piracy. Extraditing the pirates to foreign states involves logistical, financial and legal problems (Kraska & Wilson, 2008). Deciding which country should prosecute the pirates is another difficult issue, as the ships, cargo and crew involved in an incident are likely to originate from different countries. The need to establish a universal legal framework is thus crucial in order to combat piracy in international waters.

Raising awareness about the economic consequences of piracy will help to motivate international response. Better coordination between states should enable more efficient ways to be found of conducting anti-piracy operations than merely the measures taken by operators to protect their ships. The international nature of shipping also requires agreement on the emergency measures to take care of injured victims and witnesses to the criminal actions. Lessons learnt from the combatting of piracy in different regions should also be used to devise the most effective short team measures.

Conclusion

Maritime piracy in the Gulf of Aden has recently declined as a result of coordinated international efforts, but remains a serious threat with cost implications for the maritime transport industry and world trade. This paper has described the geography of piracy and the common socio-economic circumstances that underlie the motivation for Somali piracy. The international law on piracy is briefly outlined and the legal uncertainties are mentioned. Statistics of piracy are given with reference to major incidents. Costs to the shipping industry were quoted and the economic consequences for international trade explained. The main security measures taken are examined and found to be unsustainable in its current form. The paper concludes with a discussion of the long term solutions in Somalia, which include three goals: restoring central authority in the country, creating a stable and safe social environment, and reestablishing formal economic and financial systems.

The main objective in Somalia should be to change the incentive structure that promotes piracy as an alternative to legal pursuits. That can be achieved only through combined efforts involving all the stakeholders – the local as well as the global community. The developed world must guide and facilitate the process, as Somalia is unable to achieve the goals on its own.

Acknowledgements

Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

Mr Heinrich W. Freiboth conducted the research as part of his Honours degree and Dr Leila L Goedhals-Gerber acted as his supervisor.

References

1. African Development Bank Group. 2013. Somalia Cuntry Brief 2013-2015 [Online]. Available: http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/2013-2015%20-%20Somalia%20-%20Country%20Brief.pdf [2014, February 27].
2. Bateman, S. 2010. Maritime piracy in the Indo-Pacific region – ship vulnerability issues, Maritime Policy & Management, 37:7, 737-751.
3. Carney, S. 2009. *Cuttthroat Capitalism: An Economic Analysis of the Somali Pirate Business Model*[Online]. Available: http://www.wired.com/politics/security/magazine/17-07/ff_somali_pirates [2011, September 13].
4. Chalk, P. 2010. Piracy Off the Horn of Africa. *Brown Journal of World Affairs , 16* (2), 89-108.
5. Clayton, J. 2005. *Somalia's secret dumps of toxic waste washed ashore by tsunami* [Online]. Avilable: http://www.timesonline.co.uk/tol/news/world/article418665.ece [2011, september 14].
6. Gard. 2013. PIRACY – Robbery or Illegal Violence at Sea [Online]. Available: http://www.gard.no/ikbViewer/page/preventing-losses/article?p_document_id=20651204 [2014, February 8].
7. Hansen, S.J. 2009. *Piracy in the greater Gulf of Aden: Myths, misconception and remedies*. Unpublished thesis. Oslo: Norwegian Institute for Urbanand Regional Research.
8. Hesse, B. J. 2010. Lessons in successful Somali governance. *Journal of Contemporary African Studies , 28* (1), 71-83.
9. Fouche, H. 2006. *Policing Piracy and Armed Robbery against Ships in South Africa's Territorial Waters and Contiguous Zone*. Thesis submitted for the degree D. Tech in Policing, at the Tshwane University of Technology.
10. ICC International Maritime Bureau. 2014. *Piracy and Armed Robbery Against Ships - Report for the Period of 1 January - 31 December 2013.*
11. International Chamber of Commerce. 2011. *Piracy Prone Areas and Warnings.* International Chamber of Commerce, Commercial Crime Services.
12. International Maritime Bureau, Piracy and armed robbery against ships: a special report, London: International Chamber of Commerce, 1997, 2.
13. International Maritime Organisation. (2011). *Reports On Acts of Piracy and Armed Robbery Against Ships: Annual report 2010.* International Maritime Organisation. London: International Maritime Organisation.
14. International Maritime Orgaisation. 2014a. *Piracy and armed robbery against ships* [Online]. Available: http://www.imo.org/OurWork/Security/PiracyArmedRobbery/Pages/Default.aspx [2014, February 21].
15. International Maritime Orgaisation. 2014b. *Piracy reports (annual) 1996 – 2012* [Online]. Available: http://www.imo.org/KnowledgeCentre/ShipsAndShippingFactsAndFigures/Statisticalresources/Piracy/Pages/Piracy-reports-(annual)-1996-2012.aspx [2014, February 21].
16. Jablonski, R.S. & Oliver, S. 2012. The Political Economy of Plunder: Economic Opportunity and Modern Piracy. *Journal of Conflict Resolution*, 682-708.
17. Kraska, J. 2010. Freakanomics of Maritime Piracy . *Brown Journal of World Affairs , 16* (2), 109-119.
18. Kraska, J., & Wilson, B. 2008. Fighting Pirates: The Pen and the Sword. *World Policy Journal , 25* (4), 41-52.
19. Marlow, P. B. 2010. Maritime Security: an update of key issues. *Maritime Policy & Management, 37* (7), 667-676.
20. Meija, M. & Mukherjee, P.K. 2004. Selected issues of law and ergonomics in maritime security. Journal of International Maritime Law, 10(4) August – September: 301-325.
21. Oceans Beyond Piracy. 2011. *The material cost of piracy* [Online]. Available: http://www.saveourseafarers.com/the-material-cost-of-piracy.html [2011, Setember 14].
22. Oxford Dictionary. 2014. *Piracy* [Online]. Available: http://www.oxforddictionaries.com/definition/english/piracy [2014, February 17].
23. Plaut, M. 2005. *Tsunami: Somalia's slow recovery* [Online]. Available: http://news.bbc.co.uk/2/hi/africa/4560246.stm [2011, September 14].
24. Somali Pirate Clampdown [Online]. 2014. Available: http://www.icc-ccs.org/news/904-somali-pirate-clampdown-caused-drop-in-global-piracy-imb-reveals [2014, July 2].
25. Spiegel. 2011. *Hostage Oversupply in Somalia?* [Online]. Avialable: http://www.spiegel.de/international/world/0,1518,749507,00.html [2011, September 14].
26. Staniland, H. 2004.Admiralty law. *Annual Survey of South African Law*, 724-732
27. The Telegraph. 2014. *Repelling pirate attacks: The measures to protect a ship* [Online]. Available: http://www.telegraph.co.uk/sponsored/culture/captain-phillips-film/10367534/security-against-pirate-attacks.html [2014, February 21].

28. United Nations Convention on the Law of the Sea. 10 December 1982. *Definition of Piracy* [Online]. Available: http://www.un.org/depts/los/convention_agreements/texts/unclos/UNCLOS-TOC.htm [2014, February 12].

29. UNDP. 2012. Somalia Human Development Report 2012 [Online]. Available: http://www.undp.org/content/dam/undp/library/corporate/HDR/Arab%20States/HDR-Somalia-2012-E.pdf [2014, February 27].

30. United Nations. (2013). *Somalia famine killed nearly 260,000 people, half of them children – reports UN*. Retrieved February 27, 2014, from https://www.un.org/apps/news//story.asp?NewsID=44811&Cr=somalia&Cr1=

31. Williams, R. 2004. The effect of maritime violence on contracts of carriage by sea. *Journal of international maritime law*, 10(4) August – September: 349.