

Investigating Piracy from the Perspective of International Regulations and its Impact on Trade and Transportation

AmirNezam Barati¹, Arya Shafaghat Rodsari², Abutaleb Motalebi³

1. Assistant Professor of Law, Law of the Sea and Maritime Policy Research Center, Imam Khomeini Maritime Science University, Mazandaran, Iran, (Corresponding Author), Email: nezambaratigmail.com

2. Assistant Professor, Faculty of Navigation, Imam Khomeini Maritime Science University, Mazandaran, Iran, Email: aryaroodsari48@gmail.com

3. Associate Professor of Maritime Educational Administrative, Faculty of Navigation, Imam Khomeini Maritime Science University, Email: abu.m56@yahoo.com

ARTICLE INFO

Article History:

Received: 14 Mar 2023

Accepted: 13 Dec 2023

Available online: 20 Dec 2023

Keywords:

Maritime Terrorism, Piracy, Security, International Regulations, Trade ,Transport

ABSTRACT

More than 90% of the world's trade is done by merchant ship lines and their security is very important. Piracy is term used to describe violent acts carried out by terrorists and pirates at sea. Intelligence analysts, law enforcement officials, and policymakers have become increasingly concerned about the possibility of future maritime pirate's attacks. This study uses an analytical–descriptive approach to analyze the Study of Piracy from the Perspective of International Regulations and Their Impact on Trade and Transport. The findings of this study show that Piracy is one of the most important threats to international trade and maritime transport security. The maritime environment possesses some unique characteristics, including the extraterritoriality of the high seas and poor or inconsistent security measures that apply in ships and coastal areas and facilities could make them attractive to pirate operations in many parts of the world. Therefore, to have an efficient and effective fight against piracy based on the rule of law, the most important international sources to study the challenges against piracy are the 1982 United Nations Convention on the Law of the Sea, the Security Council Approvals, and IMO regulations. Although the approval of national laws of countries can bring transparency and efficiency in the fight against the phenomenon of piracy. Finally, Regional cooperation among States has an important role to play in solving the problem of piracy against ships.

1. Introduction

Maritime terrorism and Piracy are worldwide problems. The security situation became worse in the sea off Somalia, The Gulf of Aden, and the wider Western Indian Ocean from 2010 to 2011 and the increasing number of attacks in the Gulf of Guinea by pirates have been the major problems for merchant shipping lines. The threat situation caused by piracy off the coast of Somalia and in the Indian Ocean will remain particularly tense in the foreseeable future; in the field of maritime

terrorism in general we still have to be prepared for worldwide terror attacks (Peter Roell, 2013, p. 1).

Intelligence analysts, law enforcement officials, and policymakers have become increasingly concerned about the possibility of future maritime terrorist attacks. Since August 2008 approximately 50% of attacks were successful, but in 2011 the average of pirate success attacks has been reduced to 20%. The figures for the first six months of 2011(187 attacks leading to 22 hijacks) indicate that 80% of attacks were being defeated, largely by

proper application of BMP3 (Best Management Practice) and the active presence of navies. Since August 2008 approximately 50% of attacks were successful, but in 2011 the average of pirate's success attacks has been reduced to 20%, and in 2022 it reduced to 115 cases. The figures for the first six months of 2011(187 attacks leading to 22 hijacks) indicate that 80% of attacks were being defeated, largely by proper application of BMP3 (Best Management Practice) and active presence of navies.

According to statistics in 2011 there were 22 ships and 464 seafarers were held by pirate attacks, this shows a significant reduction, but indicates that the situation is far from acceptable. In this article, piracy and maritime terrorism are examined from the perspective of international regulations and their impact on trade and maritime transport, and the questions mentioned below are answered:

What Kinds of regulations cover Maritime Terrorism and Piracy?

What are the most important threats from piracy and maritime terrorism to trade especially commercial shipping lines and tankers?

2. The consideration of Piracy according to the United Nations Convention on the Law of the Sea

1.2. Definition of piracy and theoretical basis

Piracy is the “seizure of a vessel for private gain, or a related crime (Evan K. Gruetter, 2019, p. 2).”³ And it “is the violation of the peace or security of a vessel, whether a boat, ship, or aircraft, for the personal gain of those who” commit piracy (Stephen Michael Sheppard, 2012).⁴ “The law of nations has long defined piracy as the boarding or attempt to take a vessel for the profit of the pirates, as well as murder, theft, or other crimes associated with the endeavors of the pirates, including the plunder⁵ of goods ashore.” (Stephen Michael Sheppard, 2012) ⁶ Black’s law dictionary broadly defines piracy as “robbery, kidnapping, or other criminal violence committed at sea,” a “similar crime committed aboard a plane or other vehicle,” or a “hijacking (Bryan A. Garner, 2019).”⁷ And a “pirate is a seaman, robber who attacks, seizes or destroys any ship at high seas and sometimes even

harbors at the shore (Pirates,Who are pirates? What is piracy?, 2023).”

The most important source to study piracy is The United Nations Convention on the Law of the Sea (UNCLOS) signed on 10 December 1982. The UNCLOS was adopted in 1982. It lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources (IMO, n.d.). Articles 100 to 107 of this Convention express repression of piracy in detail. Iran has been an active participant in the entire sessions of the Third United Nations Conference on the Law of the Sea 1982 (UNCLOS). Iran signed the Convention in the same year, but it has not ratified it, primarily due to their opposition to the "innocent passage" provisions of UNCLOS that allow warships freedom of navigation (UN Closdebate, 2022). I.R.I governments signed the UNCLOS but the parliament did not ratify it. Because this convention accepted the innocent passage of warships and military submarines from the territorial sea and the special condition of Hormoz Strait the convention considered it as an international strait (Amir Nezam Barati, 2022, p. 130). Piracy, in contradistinction, according to article 101 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) is defined as:

“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;

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;

Any act inciting or intentionally facilitating an act described in subparagraph (a) or (b).”The UNCLOS definition of piracy developed into international law and the International Maritime Organization (IMO) ⁸ recognized and accepted this definition. Thus, according to international law, any illegal acts of violence and detention that are committed within the State’s territorial waters

are not defined as piracy. However, according to the IMB, nearly all illegal acts in Southeast Asia occur within territorial waters and thus would not fall under the definition of piracy. Technically, if an attack occurs within the territorial jurisdiction of a state, the event is only classified as piracy if that nation's penal code criminalizes it as such. Moreover, the IMO defines any unlawful act of violence or detention or any act of depredation at anchor, off ports, or when underway through a coastal State's territorial waters as armed robbery against ships.

In order to overcome the distinctions between high seas and territorial waters, the IMB defines piracy as:

“An act of boarding (or attempted boarding) with the intent to commit theft or any other crime and with the intent or capability to use force in furtherance of that act.”

Established by the International Chamber of Commerce (ICC) in 1981, the International Maritime Bureau (IMB) came into existence with the backing of the IMO, the world's foremost agency for exchanging and collecting information on maritime crime. However, according to the IMO, it is estimated that piracy incidents are likely under-reported by a factor of two (meaning, they assume that for each attack that was announced, there were two additional attacks that were not announced). Moreover, it is likely that the statistics are subject to distortion as many smaller attacks go unreported. This mainly stems from two factors:

The increase in insurance premiums often outweighs the value of the claim for smaller attacks, and reporting a piracy attack is often time-consuming and can lead to a delay of several days. Keeping in mind the running sunk costs of an idle ship (up to \$25,000 per day), in many, especially smaller cases, it is cheaper not to report the incident. While this wider definition allows the IMB to produce a more comprehensive picture of maritime crime, its definition is not recognized by international law.

2.2. Duty of countries to cooperate in the repression of piracy

According to Article 100 of (UNCLOS), “All States shall cooperate to the fullest possible extent in the repression of piracy on the high seas or in any other place outside the jurisdiction of any State. It means maritime diplomacy.

3.2. Seizure of a pirate ship or aircraft (Article 105)

On the high seas, or in any other place outside the jurisdiction of any State, every State may seize a pirate ship or aircraft or a ship or aircraft taken by piracy and under the control of piracy.

4.2. Liability for seizure without adequate grounds

Where the seizure of a ship on suspicion of piracy has been effected without adequate grounds, the State making the seizure is responsible to the State that possessed the nationality of the ship for any loss or damage caused by the seizure. 7.1. Ships and aircraft which are entitled to seize on account of piracy. According to Article 107 of (UNCLOS) a seizure on account of piracy may be carried out only by warships or military aircraft, or other ships or aircraft clearly marked and identifiable as being on government.

5.2. The United Nations Security Council Resolution against Piracy

In 2008, the United Nations Security Council enacted Resolution 1851 which allows states to use “all necessary means to repress acts of piracy and armed robbery” off the coast of Somalia. The United Nations Security Council Resolution against Piracy. This means the use of Navy and using deadly force, if necessary and within the scope of international law, is an acceptable anti-piracy measure. Thus, use of force is not limited to acts of terrorism alone; and it can be used as a countermeasure against piracy as well.

The United Nations Security Council, in its numerous resolutions issued on the basis of the seventh chapter of the Charter and on the occasion of the recent crisis on the coast of Somalia and the Gulf of Aden, has resorted to various legal solutions to deal with piracy and armed banditry in this region. These solutions include applying legal tools to regulate the behaviour of governments when fighting pirates in this region (United Nations Security Council, 2008).

3. The impact of piracy on international trade and transportation

Overall, the empirical analysis reveals that piracy negatively affects trade along several dimensions. Exporting firms reduce the frequency of shipments by vessel and switch transportation modes from ship to plane, although the average size of remaining shipments increases.

Pirate incidents such as boarding, hijacking, or firing upon the vessels of shipping companies, not only damage the crews, ships, or cargo but also cause route diversions, delays, and additional costs in international maritime trade.

Piracy is one of the hot topics that imposes additional costs on international trade and requires urgent action by the international community for a solution. Incidents of piracy, such as the boarding, hijacking, or shooting of shipping companies, not only cause damage to crews, ships, or cargo, but also cause diversions, delays, and additional costs in international maritime trade. Therefore, both the direct and indirect cost of piracy to the industry and its impact on international trade cannot be ignored. Studies show that piracy imposes significant costs on the global economy. On the other hand, pirate activities lead not only to economic affairs but also to humanitarian affairs. Therefore, international regulations and agreements should be established to solve legal issues related to piracy. Above all, the roots of the problem must be addressed and the factors that cause and facilitate piracy must be well understood (Nusret SOĞANCILAR, 2021, p. 39). Charts 1 and 2 show the number of pirate attacks against shipping lines from 2000 to 2022.

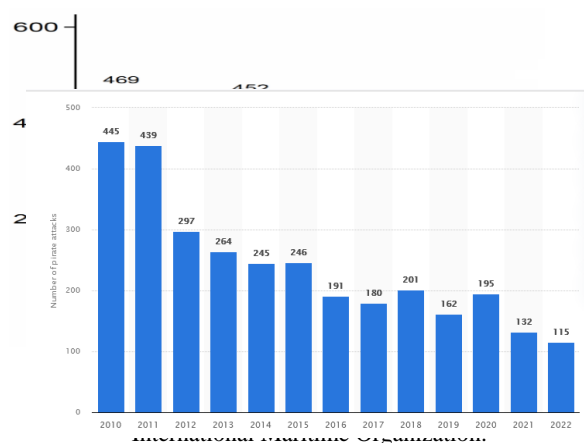


Figure 2: Statistics of pirate attacks from 2010 to 2022 (Statista, 2022)

4. Maritime terrorism

There seems to be a growing perception that there is a link between piracy and (maritime) terrorism. However, while there are certainly links and similarities between the two phenomena, there are also significant differences between them, just as

the interests and goals of pirates and terrorists are different and often even incompatible. Below is a detailed analysis of maritime terrorism based on available sources:

1.4. Maritime Terrorism Definition:

Just as there is no authoritative definition of terrorism as such, ‘maritime terrorism’ is hard to define. What distinguishes it from piracy is mainly its aim, piracy being undertaken with the animus furandi referred to above, i.e. for selfish reasons, whereas terrorism is best understood as one among several forms of armed rebellion for the sake of some higher cause. Moreover, terrorism is a strategy or tactic that an actor may choose, either fully and permanently or, much more frequently, partly and periodically, either alternating between or combining non-violent political struggle with guerrilla war and/or terrorism.

There seems to be a growing perception that there is a link between piracy and (maritime) terrorism. However, while there are certainly links and similarities between the two phenomena, there are also significant differences between them, just as the interests and goals of pirates and terrorists are different and often even incompatible.

2.4. The Danger of Maritime Terrorism-Piracy Nexus

Recent suggestions that a nexus may be forming between pirates and terrorists. Some within the international community suppose that terrorists will collude with pirates to learn the Sailing and “tricks of the trade” for operating at sea. If this happens it will be dangerous for the stability of the world.

3.4. Consequences of Maritime Terrorism

Maritime terrorism can have dangerous consequences for humanity, which can briefly include human consequences, economic consequences of property damage, economic and intangible consequences of responding to terrorism, increased security costs are some types of consequences of maritime terrorism in summary.

Since 2008 where approximately 3700 of attacks have done by pirates to I.R.I. And foreigner ships

and I.R.I strategic navy ejected these attacks. Because of proper application of Best Management Practice and active presence Iran Navy

Since 2008, there have been a significant number of attacks by pirates on the I.R.I. Foreign ships and I.R.I.'s strategic navy repelled these attacks. Due to the correct application of Best Management Practice and the active presence.

3.4. Maritime Terrorism and Insurgency

The impression seems to be gaining ground that there is a nexus between piracy and (maritime) terrorism. However, while there are certainly both links and similarities between the two phenomena, there are also significant differences between them, just as the interests and objectives of pirates and terrorists are different and often even incompatible.

4.4. Maritime Terrorism-Piracy differences

As is the case with many other threats facing the international community, what defines piracy and terrorism often lies in the eye of the beholder. How one state perceives these threats may be vastly different from how another state perceives them. This lack of definitional consensus has significant implications and impedes sound policy development. Although maritime terrorism and piracy are two distinct phenomena that exist for different reasons, many of their characteristics tend to overlap (Brookes 2009,). This overlap has led to misperceptions about these concepts and the dangers they pose to the expansive and largely ungoverned maritime domain. Thus, it is important for us to gain a better understanding and appreciation for these maritime threats and the challenges they pose to the policymakers and seafarers who must contend with them.

Maritime terrorism and piracy are two distinct phenomena that are separated from one another.

The motivation for piracy is based on economic factors. However, the motivation for maritime terrorist actions is based on illegal political factors.

5.4. Protection against Maritime Terrorism

Some of the measures to suppress or combat piracy would also be suitable against maritime terrorists and vice versa. For instance, Task Force 150¹, which is fighting piracy off the Somali coast, is part of Operation Enduring Freedom Horn of Africa (OEF-HOA) which is mainly devoted to the struggle against terrorism. What makes it relevant for the struggle against piracy and maritime terrorism are the provisions for the search and seizure of ships and the term 'non-state actors of proliferation.' As of November 2008, a total of 93 states had thus acceded to the initiative.

5. An overview of the joint cooperation of countries in the fight against piracy and Maritime Terrorism

This section of the paper provides an overview of the potential for developing multilateral maritime cooperation in the Persian Gulf, the Oman Sea, and the Indian Ocean based on regional cooperation to reduce piracy. Therefore, the fight against maritime piracy and terrorism can become an ideal topic for expanding regional cooperation in the future.

Indian Ocean Naval Symposium can face maritime piracy and terrorism with a fundamental challenge if joint cooperation is institutionalized from a behavioral, normative, structural and behavioral point of view and in an efficient and effective manner.

Hence, the groundwork for an anti-piracy regime in the Persian Gulf states, the Omani Sea, has been made possible by the establishment of IONS, and a regional approach to piracy may be a prelude to further cooperation on other issues, such as

¹ Countries presently contributing to CTF-150 include Australia, Canada, Denmark, France, Pakistan, Japan, Germany, the United Kingdom and the United States. Other nations that have participated include Italy, India, Malaysia, Netherlands, New Zealand, Portugal, Singapore, Spain, Thailand and Turkey. The Islamic Republic of Iran was not a member of this coalition and

fought as an independent navy in the fight against pirates and armed groups that jeopardized maritime security, and clashed with pirates in several operations. Finally, these clashes led to the release of the sailors whose ships were captured by armed pirates.

maritime cooperation and counter-terrorism efforts.

Based on the existing experiences, a real anti-piracy and maritime terrorism coalition in the Persian Gulf, the Oman Sea, and the Indian Ocean, in which all the maritime countries of the region are members, can institutionalize maritime security and can be an introduction to the expansion of maritime cooperation in the development of marine industries and sciences also.

According to UN regulations all the naval forces of the countries can participate in fight against pirates and terrorism in the sea according to international law. Of course, it is important to mention that the naval forces cooperate in the fight against piracy and maritime terrorism in terms of information exchange, which in this case can be attributed to the cooperation of the naval forces in the Indian Ocean Naval Symposium (IONS). In this regard, the International Maritime Security Coordination Centre has been established in the port city of Chabahar. According to the decision made in the 7th edition of the Indian Ocean Naval Symposium (IONS) which was hosted by France, this center launched for the Indian Ocean rim countries enabling them to exchange information for establishing maritime security. The center will be launched for the first time in the region and the regional states can dispatch their representatives to Chabahar Port (Khanzadi, Hossain, 2021).

6. Conclusion

Considering that more than 90% of goods are transported by sea and merchant ship lines, security in transportation of goods, crude oil and gas is of fundamental importance. According to the available statistics, 3420 attacks have been made on commercial ships and oil tankers from 2000 to 2009 (2000, 469, 2001, 358, 2002, 312, 2003, 452, 2004, 330, 2005, 265, 2006, 246, 2007, 278, 2008, 303, 2009, 407) and 3130 from 2010 to 2021 (2010, 445, 2011, 439, 2012, 297, 2013, 264, 2014, 245, 2015, 246, 2016, 191, 2017,

180, 2018, 201, 2019, 162, 2020, 195, 2021, 132 and, 2022, 115). Calculations and analysis of maritime security risks through piracy based on recorded statistics from 2000 to 2022 show that 6,550 attacks on shipping lines of various types have taken place.

At the moment the most important danger for the export of oil and goods of are maritime terrorism and piracy and the most important strait for the export of goods are Strait of Hormuz, Strait of Malacca, Bab-el-Mandeb and Suez Canal. Therefore, the security of international straits and different maritime zones is of strategic importance for international trade and economic stability of the world.

The fight against piracy and maritime terrorism will continue to be successful only if navies and maritime countries adopt the strategy of a "comprehensive approach.

The most important act that the IMO, international society, and security organizations should do is stop the unifying of maritime terrorism and piracy. The maritime environment possesses some unique characteristics that, in principle, could make it attractive to terrorist operations, including the extraterritoriality of the high seas and poor or inconsistent security measures that apply in coastal areas, and facilities in many parts of the world. Finally, it can be concluded that the identification of the main interests of the international community by governments and international institutions such as the United Nations and the International Maritime Organization and other international institutions such as the Indian Ocean Naval Symposium can be the basis of joint anti-piracy measures and be anti-terrorism.

7. Resource

1-Vincent Stamer, Shuyao Yang, Alexander Sandkamp . (2022, Jan 24). The rum is gone! The impact of maritime piracy on trade and transport. Retrieved from [cepr.org:https://cepr.org/voxeu/columns/rum-gone-impact-maritime-piracy-trade-and-transport](https://cepr.org/voxeu/columns/rum-gone-impact-maritime-piracy-trade-and-transport)

- 2- The United Nations Security Council (2008) enacted Resolution 1851.
- 3- The United Nations Convention on the Law of the Sea (1982), available at http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf
- 4- Eric Shea Nelson, Maritime Terrorism and Piracy: Existing and Potential Threats, Global Security Studies, winter 2012 Volume 3, Issue, Diplomacy Department, Norwich University.
- 5- Chalk, P. (2009). Maritime piracy: reasons, dangers, and solutions. Rand Corp: Santa Monica CA.
- 6- “Radicalization of Piracy”, Journal of Energy Security, December 14, 2010, (accessed June 12, 2019). (n.d.).
- 7-Abhijit Singh. (2019). Maritime terrorism in Asia: An assessment. ORF Online Paper. Retrieved 2023, from <https://www.orfonline.org/research/maritime-terrorism-in-asia-an-assessment-56581/>
- 8-Amir Nezam Barati. (2018). Maritime Terrorism and Piracy. The 20th Marine Industry Conference. Kish: Iranian Association of Naval Architecture and Marine Engineering.
- 9-Amir Nezam Barati. (2022). The study of Iran's accession to the 1982 UN Convention on the Law of the Sea based on the SWOT framework. . International Journal of Maritime Policy, 2(5), 129-144. doi: 10.22034/irlsmp.2022.140706, 129-144.
- 10-donya-e-eqtesad. (2012, April 8 , Sunday). Rescue of the Chinese ship by the Iranian Navy. donya-e-eqtesad, pp. <https://donya-eeqtesad.com/%D8%A8%D8%AE%D8%B4->
- 11-IMO. (n.d.). United Nations Convention on the Law of the Sea. Retrieved November 25, 2022, from International Maritime Organization: <https://www.imo.org/en/ourwork/legal/pages/unit-ednationsconventiononthelawofthesea.aspx>
- 12-Irani, Shahram. (2022, November 22). Navy Commander: We escort all Iranian ships in the world. Retrieved from [Didbaniran.ir:https://www.didbaniran.ir/%D8%A8%D8%AE%D8%B4-%D8%B3%DB%8C%D8%A7%D8%B3%DB%8C-3/143834-](https://www.didbaniran.ir/%D8%A8%D8%AE%D8%B4-%D8%B3%DB%8C%D8%A7%D8%B3%DB%8C-3/143834-)
- 13-Irani, Shahram. (2023). The first national conference of maritime civilization on the path of progress. The first national conference of maritime civilization on the path of progress. Chabahar: The first national conference of maritime civilization on the path of progress.
- 14-Khanzadi, Hossain. (2021, July 11). Comdr: Regional maritime security center to be launched in Chabahar. Retrieved from IrnaEnglish: <https://en.irna.ir/news/84399784/Comdr-Regional-maritime-security-center-to-be-launched-in-Chabahar>
- 15-Khanzadi, Hossein . (2021, June 29). The coordination center for international maritime security cooperation was opened in Chabahar. Retrieved from Irna.ir: <https://www.irna.ir/news/84387352/%D9%85%D8%B1%DA%A9%D8%B2->
- 16-Nusret SOĞANCILAR. (2021). Maritime piracy and its impacts on international trade. Journal of Politics Economy and Management, Volume: 4 Issue: 1, 38 - 48, 28.06.2021.
- 17-Peter Chalk. (2008). , “The Maritime Dimension of International Security: Terrorism, Piracy, and Challenges for the United States”, RAND Monograph. Retrieved from <http://www.jstor.org/stable/10.7249/mg697af.1>
- 18-Peter Roell. (2013). Combating Piracy and Maritime Terrorism –A Common Challenge for Europe and Asia April 2013. Public university in Zürich, Switzerland, available at:https://www.files.ethz.ch/isn/163375/223_Roell.pdf, 1-13.

- 19-REUTERS. (2012, April 7). Iranian navy frees Chinese ship hijacked by pirates. Retrieved from REUTERS: <https://www.reuters.com/article/us-china-hijack-idUSBRE8350H120120406>
- 20-Sayyari, Habibollah . (2016, October 17). Iran Navy foils pirate attacks on vessels in Gulf of Aden. Retrieved from Presstv:<https://www.presstv.ir/Detail/2016/10/17/489482/Iran-Navy-Gulf-of-Aden-Alvand-Bushehr-pirates>
- 21-Statista. (2022, January). Number of pirate attacks against ships worldwide from 2010 to 2021 . Retrieved from Statista: <https://www.statista.com/statistics/266292/number-of-pirate-attacks-worldwide-since-2006/>
- 22-Title 22 of the United States Code, Section 2656f(d). (2023).
- 23-UN Closdebate. (2022). Iran has been an active participant in the entire sessions of the Third United Nations Conference on the Law of the Sea. Retrieved from unclosdebate:<https://www.unclosdebate.org/keywords/iran>
- 24-United Nations Security Council. (2008). Paragraph 5 of Resolution 1851 approved in 2008. United Nations Security Council.
- 25-Bryan A. Garner. (2019). Piracy, Black's Law Dictionary (11th ed).
- 26-Evan K. Gruetter. (2019). Piracy, a Crime of Universal Jurisdiction: A Perspective into the History of United States Piracy Jurisprudence, its English Common Law Roots, and Relationship with the Law of Nations. 1-37. doi:<http://dx.doi.org/10.2139/ssrn.3818633>
- 27-Pirates, Who are pirates? What is piracy? (2023). Retrieved from thewayofthepirates: <http://www.thewayofthepirates.com/types-of-pirates/pirates/>
- 28-Stephen Michael Sheppard. (2012). The Wolters Kluwer Bouvie Law Dictionary Desk Edition .
- 29-Chan, K.S., & Laffargue, J. P. (2020). Is piracy sustainable? Canadian Journal of Economics/Revue canadienne d'économique 53(1), 321-340.