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Maritime Security under the Lens: Evaluating its effectiveness in Deterring Piracy and Armed Robbery at Sea

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Abstract: Piracy is a significant threat in maritime zones, severely disrupting navigation and exerting a detrimental impact on global trade and commerce. This research critical examines the effectiveness of current maritime security measures, arrangements, and regulatory frameworks specifically designed to combat piracy and armed robbery at sea by exploring a range of strategies employed by both individual nations and international bodies, to counter the persistent maritime threat of armed robbery. Current research identifies key gaps and limitations within these existing measures of maritime securities, offering valuable insights into their practical efficacy and highlighting areas where improvements are necessary. The study evaluates the capacity of the existing frameworks by utilizing qualitative research methodology to theoretically address and prescribe effective mitigation strategies to deter piracy and armed robbery in today's complex maritime environments, thereby contributing to the ongoing discourse on strengthening and enhancing global maritime security.

Keywords: maritime security; piracy; armed robbery; international law; counter-piracy measures

1. Introduction

Maritime security is a specialized field dedicated to the strategic protection of ships and vessels from various internal and external threats and attacks. Ensuring effective maritime security requires more than the efforts of security officials alone; it necessitates a collaborative approach involving all relevant stakeholders to combat piracy and armed robbery effectively (Chapsos 2016).

Maritime security is a comprehensive field within maritime law that aims to ensure the safety of commercial ships and establish order in maritime navigational routes and ports. It involves protecting civilians, trade, and commerce across the vast expanses of the ocean. However, pirates are increasingly exploiting this vastness, frequently targeting commercial vessels, which undermine the fundamental principles of maritime security. Soğancilar (2021) indicated that maritime security encompasses the protection of vessels against threats such as terrorism, piracy, robbery, illegal trafficking of goods and people, illegal fishing, and pollution. The increasing incidence of illegal violence at sea poses a significant threat to global economic development, demanding effective countermeasures. Piracy Reporting Center (PRC) of International Maritime Bureau (IMB), indicates that in the year of 2008, there were 293 reported incidents of piracy and armed robbery against ships worldwide, with 49 vessels hijacked and 889 crew members taken hostage (Mukundan 2024). Klein (2011) observes that statistical data for 2008-2009 by IMB indicated a doubling of such incidents, highlighting the urgent need to address the root causes of maritime violence and assess the effectiveness of existing regulatory measures.

In the context of rapidly growing global trade, economies, and populations, maintaining a long-term, cost-effective, efficient, environmentally sustainable, safe, and secure maritime transport system is crucial. Addressing these challenges requires robust regulatory support and effective cooperation across political, economic, legal, diplomatic, and military spheres. Faiyaz et al. (2023) suggested, strong collaboration among diverse public and private stakeholders, along with a thorough understanding the existing anti-piracy policies, effective response to piracy demands a robust international legal regime, along with enhanced international cooperation, and comprehensive multilateral initiatives are indispensable for dealing with increased attempts of piracy against vessels. Contemporary pirates are more agile and technologically sophisticated, outpacing the current maritime security measures. The sophistication of maritime security protocols, unfortunately, lags behind the advancements made by pirates. To effectively counter this growing threat, maritime security protocols must be updated and enhanced. This research paper will conduct a systematic cause-and-effect analysis of contemporary maritime security laws, protocols, and practices emphasizing on the primary question of this research that is "How effective are contemporary maritime security laws, protocols, and practices in countering the evolving threat of maritime piracy, and

what measures can be implemented to enhance and standardize these frameworks?". Furthermore, this paper will assess the effectiveness of the regional maritime security frameworks alongside proposing recommendations to standardize and strengthen these frameworks to combat the rising challenge of maritime piracy committed against commercial vessels at sea.

This research aims to identify the major obstacles to combating sea piracy and armed robbery. It will evaluate whether current international protocols, conventions, and regulatory frameworks are adequate or not to counter the existing maritime threats of piracy along with proposing recommendations to enhance mechanisms for combating these maritime threats.

2. Methodology

We used doctrinal research approach, analyzing primary and secondary data from literature and observation creating a solid foundation of theories by expanding relevant case studies, legal frameworks, statutes, and international maritime regulations. Research materials were gathered from online databases on the subjects of maritime laws, treaties, books, journals, articles, reports, and relevant internet resources. Key international instruments such as the United Nations Convention on the Law of the Sea (UNCLOS)[1], Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA)[2], International Ship and Port Facility Security Code (ISPS Code)[3], Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP)[4], and Djibouti Code of Conduct[5] were primarily analyzed. Technical aspects of maritime security, including the ship reporting systems such as, The Global Maritime Distress and Safety System (GMDSS)[6], Long-range identification and tracking (LRIT)[7], The Automated Manifest System (AMS)[8], and Vessel monitoring system (VMS)[9] were referred for justifying its credibility to reduce piracy attempts at sea.

2.1 Contemporary Maritime Security Laws and Practices

Maritime security is a concept grounded in international law. It's closely linked to naval powers, regional customs, and customary law (Klein 2011). Maritime security framework includes diplomacy, intelligence, military, and technological norms of individual states aimed at ensuring maritime safety. According to Dua (2024) maritime security laws aim to eliminate threats like piracy, armed robbery, Illegal, unreported, and unregulated or IUU fishing, smuggling, and human trafficking. These laws also protect coastal facilities, ports, and maritime economies. These laws aim to safeguard maritime routes from both conventional and unconventional threats. Customary and international laws are crucial for suppressing maritime piracy and armed robbery. On the contrary, naval strategies and policies are crucial for ensuring maritime safety on the high seas. The persistent threats of piracy and armed robbery require strong enforcement of maritime security laws.

Maritime law enforcement is part of a complex system involving domestic, regional, and international aspects National courts have primary jurisdiction over piracy cases, interpreting them based on national laws and regulations[10]. Interpreting such cases involves guidance from international laws, conventions, bilateral agreements, and multilateral treaties (Caffrey 2017). Maritime security is primarily governed by domestic laws and regulations. While international laws and customs may not directly apply to individual cases of piracy encounters, they offer valuable guidance. National courts have exclusive jurisdiction in piracy cases, but naval fleet policies are crucial for operational prevention.

3. Regional Counter-piracy Mechanisms

3.1 China's Global Maritime Strategy against Piracy

China's maritime economy being a pillar of 21st century, thrives on extensive foreign trade and globalization through impressive maritime trading. So, protecting maritime routes within Chinese waters always remains the country's top priority. China's Maritime Code (1993)[11] and Maritime Traffic Safety Law (1983)[12] form backbone of the country's legal framework for ensuring maritime safety in the South China Sea. These laws, alongside with the help of strong law enforcement agencies, combat piracy and armed robbery in that region.

The South China Sea is one of the most economically and strategically significant maritime routes for China. A substantial portion of China's oil and energy trade is regulated through the Straits of Malacca. Due to this strategic importance, maintaining maritime security in the Straits of Malacca is a top priority for China (Anonymous 2023).

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1   Available online: https://www.unodc.org/westandcentralafrica/en/maritime-crime-and-piracy.html (accessed on 15 September 2024)
2   Available online: https://www.imo.org/en/About/Conventions/Pages/SUA-Treaties.aspx (accessed on 15 September 2024)
3   Available online: https://www.imo.org/en/OurWork/Security/Pages/SOLAS-XI-2%20ISPS%20Code.aspx(accessed on 15 September 2024)
4   Available online: https://www.recaap.org/(accessed on 15 September 2024)
5   Available online: https://dcoc.org/(accessed on 15 September 2024)
6   Available online: https://www.fcc.gov/wireless/bureau-divisions/mobility-division/maritime-mobile/ship-radio-stations/global-maritime(accessed on 15 September 2024)
7   Available online: https://www.imo.org/en/OurWork/Safety/Pages/LRIT.aspx(accessed on 15 September 2024)
8   Available online: https://www.flexport.com/glossary/automated-manifest-system/ (accessed on 15 September 2024)
9   https://trackwellfims.com/fisheries-management-systems/vms/?sn-vms&gad_source=1&gclid=Cj0KCQjw7Py4BhCbARIsAMMx-_J5pVKypEY98CTOwVZgm39mFMwi892qvTWb1w9SxBwBH2wu0xuozcwaAgkYEALw_wcB (accessed on 15 September 2024)
10 Available online: https://www.unodc.org/copak/index.html (accessed on 15 September 2024)
11 Available online:https://faolex.fao.org/docs/pdf/chn12095.pdf   (accessed on 15 September 2024)
12 Available online:http://www.asianlii.org/cn/legis/cen/laws/mtsl239/ v

Under the Criminal Law of the People's Republic of China, the country has acceded to international treaties that fall under its jurisdiction.[13] Within this framework, China possesses universal jurisdiction to try international crimes such as piracy and armed robbery of vessels. In terms of prosecution and arrest, Chinese courts can impose severe penalties on sea pirates convicted of crimes like murder or robbery. Extradition, (Wu et al. 2024) refers that China has bilateral extradition agreements with 57 countries, enabling it to extradite or exchange pirates with their counterparts.

Considering legislative enactments focusing on maritime security dominance, China's maritime safety laws, including the Maritime Traffic Safety Law 1983[14], the Law on the Territorial Sea and Contiguous Zone, and the 1998 Law on the Exclusive Economic Zone (EEZ) and Continental Shelf, empower Chinese agencies to conduct hot pursuits beyond traditional waters.

China possesses five maritime law enforcement agencies such as the Maritime Section of the Public Security Bureau, the Maritime Command of the Border Security Force, Border Defense, Chinese Maritime Surveillance, and the Chinese Coast Guard. They investigate crimes, inspect vessels, and aid distressed ships. Suspicious vessels are transferred to the Public Security Department for prosecution by Chinese courts (Xu 2013).

Additionally, considering participation in international law China, a ReCAAP signatory in Asia, collaborates closely with Indonesia and Malaysia to protect the Strait of Malacca. Joint patrols with littoral states to enhance maritime security[15]. China's maritime response to piracy prevention is characterized by several strengths. China's anti-piracy strategy prioritizes international cooperation, legal deterrence, and robust maritime enforcement. Its well-equipped agencies have sufficient resources to combat piracy effectively (Kax and Bal 2012).

Despite its strengths, China's maritime piracy prevention framework has notable weaknesses (O'Rourke 2011). First, Chinese criminal laws lack substantive clarification of maritime crimes, although the statutory law identifies maritime crimes, those lacks characterization, making it difficult for enforcement agencies to criminalize pirates effectively. Second, effective jurisdiction must be established for pirate extradition. Maritime agencies need to be centralized to improve South China Sea enforcement. The region's complex geography and unresolved maritime disputes offer pirates opportunities to evade Chinese enforcement.

3.2 Malaysia's Global Maritime Strategy against Piracy

The Strait of Malacca, which flows past Malaysia, is a vital shipping route. Malaysia is committed to ensuring its safety. The country has invested heavily in navigational and security infrastructure to enhance maritime safety and security in that region (Nordin and Leong 2020). The international community has urged Malaysia to enhance security in the Sea Lines of Communication or SLOC, especially given the high frequency of pirate and robbery incidents within its territorial waters. To counter these threats, Malaysian maritime agencies, in cooperation with neighboring states, conduct joint patrols through MALSINDO, a trilateral force established in 2004 to combat piracy in the region.

Malaysia's maritime security comprises of various agencies that enforce federal law at sea. These agencies, authorized by the Malaysian Maritime Enforcement Agency Act 2004 or MMEA Act 2004,[16] investigate offenses and make arrests within the Malaysia Maritime Zone (MMZ). China use helicopters, vessels, and speedboats to apprehend maritime criminals loitering in sea.

Malaysian law equates pirates with robbers, imposing the same penalties on both. Criminal courts in Malaysia sentence sea pirates for robbery and theft, just as they would land-based criminals. Khobragade et al. (2021) found that the High Court has jurisdiction to try pirates captured at sea by Malaysian Maritime Enforcement Agency or MMEA officers exercising hot pursuit. For instance, in the 2011, Indonesian pirates attacked a vessel in the Strait of Malacca. The MMEA apprehended them, and they were convicted of gang robbery under Malaysian law[17].

Malaysia's maritime enforcement against piracy and armed robbery is strong. Its laws effectively punish pirates, the MMEA has a good record of countering piracy, Malaysia updates its laws regularly, and it works with neighboring countries to protect the Strait of Malacca.

Malaysia's maritime piracy prevention, while strong in some areas, faces several challenges (Rahman 2023). First, its primary law, the MMEA Act, lacks comprehensive coverage. Second, financial and technical constraints hinder the MMEA's ability to capture pirates. Third, reluctance to pursue pirates across borders and complex maritime boundaries in the region create safe havens for Indonesian pirates. Finally, enhanced international collaboration is essential to fully implement Malaysia's piracy prevention commitments.

3.3 India and Bangladesh's Maritime Strategy to Combat Piracy

India and Bangladesh lack streamlined legal enforcement mechanisms for ensuring maritime security and suppressing piracy, as seen in Malaysia. India has been drafting a bill since 2019 dedicated to piracy prevention and penalties in Indian territorial waters (Bose and Chaudhury 2024). This legislation, known as the "Anti-Maritime Piracy Bill," is still awaiting parliamentary approval in India[18].

3.4 Contemporary Piracy in Nigeria and the Gulf of Guinea

Piracy in the Gulf of Guinea remains a major threat to shipping. Nigeria, with its Niger Delta, is a central hub for criminal piracy activities[19]. Maritime security in the Gulf of Guinea is plagued by a variety of crimes, including piracy, illegal fishing,

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13   Available online: https://sherloc.unodc.org/cld/uploads/res/document/chn/1987/criminal-law-of-the-peoples-republic-of-china_html/China_Criminal_Code_Full_text.pdf (accessed on 15 September 2024)

14   Supra

15   Supra

16   Available online: https://faolex.fao.org/docs/pdf/mal47517.pdf (accessed on 15 September 2024)

17   Supra

18   Available online: https://prsindia.org/billtrack/the-anti-maritime-piracy-bill-2019 (accessed on 15 September 2024)

19   Available online: https://amaniafrica-et.org/maritime-piracy-in-the-gulf-of-guinea/(accessed on 15 September 2024)

kidnapping for ransom, drug trafficking, and oil bunkering. While piracy often dominates the conversation, kidnapping for ransom is especially prevalent (Luchet 2021). Pirates in the Gulf of Guinea are usually heavily armed and violently steal oil from cargo ships who commit kidnapping for ransom (KER) particularly around the Niger Delta.

The Gulf of Guinea and Nigeria are now global piracy hotspots, with most maritime kidnappings occurring there. Piracy remains a threat due to political and economic instability, despite recent progress against Somali pirates[20]. As attacks increase, insurance premiums may soar or disappear, hindering Nigerian oil exports and driving up global oil prices.

3.4.1 Nigeria's Regional Counter-Piracy Policy: Analysis of the Suppression of Piracy and Other Maritime Offences Act 2019

The Suppression of Piracy and Other Maritime Offences Bill, 2019, recently received President Muhammadu Buhari's assent after passing in the Senate and House of Representatives on April 9 and April 30, respectively.[21] The Act gives effect to the provisions of the UNCLOS 1982, and the SUA 1988, along with its protocols.

This law meets international standards and includes clear definitions of piracy and related maritime offenses, penalties for those convicted of maritime crimes, mandates for restitution and forfeiture of proceeds, and exclusive jurisdiction granted to the Nigerian Federal High Court. The law covers piracy, armed robbery, and other unlawful acts against ships, aircraft, and platforms in or above

Nigerian waters, international waters, or waters where Nigeria has maritime conventions. It applies to anyone involved in such acts, regardless of their location. For maritime-related offenses, Section 5(2) grants exclusive jurisdiction to the Federal High Court. Section 12 provides that anyone convicted of piracy, armed robbery at sea, or other unlawful acts under the law is liable to life imprisonment, a fine of N50,000,000.00, and restitution to the owner.

3.5 Japan's Maritime Strategy against Sea-Piracy

Japan has an effective maritime enforcement mechanism entrusted with the duty to ensure safety of navigation in Japanese waters. The Japan Coast Guard and Maritime Self-Defense Force are responsible for maritime safety and security, (Bradford 2018). According to the Yarin (2018), Japan is also a participant in the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) Information Sharing Centre (ISC) and contributes to regional anti-piracy efforts, including the MALSINDO initiative.

Japan's laws and practices protect life at sea, maintain safety, and detain maritime criminals. The Japan Coast Guard (JCG) investigates suspected criminals and can use force or firearms against pirates. The JCG can also stop ships for security. Japan Maritime Self-Defense Force or JMSDF protects life at sea and enforces maritime security. It operates under the Japanese Law on Punishment of and Measures against Acts of Piracy and can use strict measures against pirates under Article 5 of the act, Singapore Police Force (SPF) (2009). This Act also enables the JMSDF to protect foreign vessels navigating on the high seas. Both the JMSDF and JCG are members of the North Pacific Coast Guard Forum (NPCGF) and engage in joint patrolling with international navies[22].

Japan's maritime response to piracy prevention has several strengths. It has an organized legal framework, dedicated piracy laws with penalties, and assists neighboring countries in their counter-piracy efforts. The JMSDF and JCG have powers to suppress piracy in Japanese waters. The JMSDF has cooperated with U.S.-led CTF 150 and 151 in counter-piracy operations off Somalia and in the Gulf of Aden.

3.6 Australia's Global Maritime Strategy

Australia has a detailed legal framework for maritime security. The Maritime Powers Act 2013 covers all maritime law enforcement matters.[23] The Crimes at Sea Act 2000 ensures state-specific criminal codes apply in territorial waters.[24] The legal framework is a cooperative fusion of Commonwealth and state practices.[25]

The Commonwealth Crimes Act 1914 also governs piracy cases in Australia, where the Supreme Court of a state or territory within the Commonwealth would try pirates accordingly. The Australian Defense Forces or the Australian Federal Police capture pirate-controlled vessels in Australian waters. In rare cases, the Australian Federal Police seize pirate-controlled vessels on the high seas. In cases occurring within state territories, the Supreme Court of the respective state exercises jurisdiction, and penalties are imposed according to the state's penal laws.[26]

The Maritime Border Command (MBC) is Australia's primary maritime crime prevention agency. It conducts response, recovery, and violence suppression at sea. Australia's Piracy, Robbery, or Violence at Sea Plan (AUSPRVS) outlines operational policies for piracy prevention. The plan is implemented through active coordination among stakeholders. The MBC tracks pirates beyond state territories and uses sophisticated tracking systems and reporting protocols. These protocols determine which state

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[20]   Available online: https://commercial.allianz.com/news-and-insights/expert-risk-articles/shipping-safety-21-security-sanctions.html (accessed on 15 September 2024)

[21]   Available online: https://nimasa.gov.ng/wp-content/uploads/2022/12/Suppression-of-Piracy-and-Other-Maritime-Offences-Act-2019-01.pdf (accessed on 15 September 2024)

[22]   Available online: https://www.nbr.org/publication/japans-coast-guard-and-maritime-self-defense-force-cooperation-among-siblings/ (accessed on 15 September 2024)

[23]   Available online:https://classic.austlii.edu.au/au/legis/cth/consol_act/mpa2013191/ (accessed on 15 September 2024)

[24]   Available online: Canberra Crimes at Sea Act 2000 Compilation No. 8. (2000). https://faolex.fao.org/docs/pdf/aus22421.pdf (accessed on 15 September 2024)

[25]   Ibid

[26]   Available online: Crimes Act 1914. (2015). https://www8.austlii.edu.au/cgi-bin/viewdb/au/legis/cth/consol_act/ca191482/ (accessed on 15 September 2024)

should lead the investigation of piracy cases. The flag state of the vessel and the nationality of the alleged pirates determine the MBC's involvement (Laird 2020).

Among the strengths of Australia's maritime response are its organized response mechanisms and law enforcement structures. The enforcement agencies are well-organized and well-funded. Additionally, stakeholder coordination is an innovative tactic that promotes burden-sharing among private and public agencies, thereby enhancing Australia's maritime security policies. The MBC operates a real-time response mechanism supported by state-of-the-art technologies, and Australia's infrastructural and financial stability further bolsters its overall maritime security framework.

Despite these strengths, Australia lacks dedicated anti-piracy laws. For example, piracy cases often rely on state criminal and penal laws, leading to jurisdictional challenges and long adjudication processes between Commonwealth states. Additionally, the response mechanisms used by Australian maritime enforcers are complex, which can hinder efficient piracy suppression (Karim 2015).

4. Prevention of Maritime Piracy under International Law

4.1 UNCLOS (United Nations Convention on the Law of the Seas)

The United Nations Convention on the Law of the Seas 1982 or UNCLOS is the authoritative instrument governing the maritime domain. Many state parties have incorporated its maritime security provisions into their domestic laws. However, the definition of piracy given under article 101 in the convention needs further elaboration as UNCLOS only recognizes piracy on the high seas, meaning piracy within territorial waters is not classified as piracy under this convention.[27]

The UNCLOS framework is often ineffective in suppressing piracy. Its provisions are suggestive and depend on state practice. UNCLOS grants every state jurisdiction to seize, arrest, and punish pirates, but enforcement is up to state parties. UNCLOS defines pirates as individuals committing piracy and robbery for private ends. This excludes terrorists, separatists, and other radical entities using the sea to terrorize civilians. UNCLOS only recognizes piracy in the context of one belligerent ship attacking another. This definition excludes scenarios where pirate speedboats, launched from a mother ship, hijack larger commercial vessels. Article 100 of UNCLOS urges cooperation among state parties to prevent piracy. Article 102 of the said convention states that if piracy is perpetrated by warships, these warships will be treated as private vessels and will be criminally liable. A significant development within UNCLOS is the recognition of the original jurisdiction of states to try and prosecute pirates found in their territorial waters. UNCLOS grants all states universal jurisdiction to suppress and punish acts of piracy and armed robbery against vessels. Only warships or aircraft with identifiable governmental markings can arrest pirates. Articles 105 and 107 of UNCLOS provide these guidelines for coastal states to enforce these provisions and fulfill international commitments to maritime security and piracy suppression.

4.2 Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA) 1988

The SUA Convention is a multilateral treaty that criminalizes acts threatening maritime navigation safety established under the patronage of International Maritime Organization (IMO). The convention criminalizes forceful ship seizures, violence against crew, vandalism, illegal substance placement, navigational equipment destruction, injuries, killings, and actions endangering navigation.[28]

A fundamental aspect of the SUA Convention is its creation of an international obligation for state parties to prosecute and punish alleged perpetrators and to facilitate their extradition when necessary. However, a major flaw is that the convention's provisions do not apply to warships or other government ships engaged in non-commercial activities. This means that if a warship or government vessel masquerading as a pirate ship engages in piracy and robbery, the SUA Convention would not apply.

The SUA Convention urges states to create jurisdictional frameworks for piracy prevention. However, its implementation depends on state parties (Kraska 2017). A drawback is that the convention doesn't grant states the power to interdict or board suspected ships. The 2005 SUA Protocol supplements the 1988 Convention by aligning it with terrorism provisions and establishing cooperative agreements for combating acts that endanger navigation. Effective implementation requires more states to ratify these provisions and integrate them into their legal systems.[29]

The 2005 SUA Protocol allows boarding and interdiction of suspected ships only with the flag state's consent, which can delay anti-piracy efforts. The SUA and SUA Protocol categorizes various maritime offenses and prescribe procedures for safety and prevention, thereby securing navigation at sea.

4.3 International Ship and Port Facility Security (ISPS) Code

The ISPS Code is an international regulatory code under the International Maritime Organization or IMO Maritime Safety Committee. It applies to shipping companies, shipboard personnel, and port facilities to prevent situations that jeopardize safety. Unlike previous instruments, the ISPS Code safeguards ports involved in international trade (International Maritime Organization 2002).

To comply with ISPS security protocols, every shipping company must appoint a Company Security Officer (CSO) and a Ship Security Officer (SSO). The CSO is responsible for conducting a comprehensive Vessel Security Assessment of port facilities and creating a Ship Security Plan (SSP). Both the CSO and SSO are responsible for implementing the SSP as required by the ISPS Code. The SSO, in collaboration with port security, conducts regular inspections of ports and manages training sessions for ship crews and seafarers. The Vessel Security Assessment and Plan must include strict procedures for safeguarding sensitive ship information, assessing surveillance equipment, and detecting malfunctions through technical inspection.

ISPS regulations require commercial vessels to have a security alarm system. This system helps the crew send distress signals during pirate attacks and notify authorities ashore and nearby vessels via satellite communication and geotracking. All port facilities must implement this system.

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[27]   Available online: https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf (accessed on 15 September 2024)
[28]   Available online: https://www.imo.org/en/KnowledgeCentre/ConferencesMeetings/Pages/SUA.aspx (accessed on 15 September 2024)
[29]   Available online: https://www.cil.nus.edu.sg (accessed on 15 September 2024)

One of the key aspects of the ISPS Code is the incorporation of Maritime Security Levels (MARSEC), a communication protocol with three tiers of security, ranging from low to high-risk levels. Based on the risk level, authorities ashore can respond interactively (Anish 2019). The advantages of the ISPS Code, particularly in scenarios of heightened piracy, include the introduction of numerous security features that effectively minimize the impact of pirate attacks on the maritime shipping industry and ensure a secure work environment for port personnel[30].

The ISPS Code is time-consuming to implement. Not all ports comply with ISPS standards due to complex security protocols and costs. ISPS inspections and vessel security plans can disrupt cargo logistics and cause delays[31].

4.4 The Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia (ReCAAP) and Information Sharing Centre (ISC)

ReCAAP is a regional agreement among littoral states aimed at enforcing and enhancing cooperation to suppress maritime piracy and armed robbery within the territorial waters of member states.[32] Currently, 21 states are contracting parties to ReCAAP. Under the agreement, the Information Sharing Centre (ISC) has been established to report piracy incidents and developments worldwide to member states.

ReCAAP utilizes a decentralized Information Sharing System Networking (IFN) technology to exchange information among its member states. Through IFN, the ISC oversees piracy focal points and exchanges vital, timely, and accurate information on each incident. The ISC's efforts in information sharing help littoral states better enforce maritime security laws in the oceans. ReCAAP can leverage the sophisticated alarm system integrated into the IFN to interactively alert authorities near vessels affected by pirates. The ISC also provides weekly statistical reports on piracy and armed robbery incidents, which helps build the capacity of littoral states' maritime law enforcement agencies[33].

The ISC's analysis of piracy focal points promotes cooperation between states and the shipping industry. ReCAAP's cooperative framework extends its scope to various international and intelligence institutions, such as IMO, INTERPOL, and or Baltic and International Maritime Council (BIMCO) International Maritime Organization (IMO) (2018). The ISC's maritime risk analysis measures on piracy focal points are based on several threat assessment categories. ReCAAP and ISC, therefore, represent a regional mechanism with a cooperative element specifically designed for piracy suppression in both international and national waters, ReCAAP ISC (2024). The innovative information-sharing system introduced by ReCAAP has assisted littoral states, including both underdeveloped and developed states in Southeast Asia (Kax and Ball 2012).

4.5 Djibouti Code of Conduct Concerning the Repression of Piracy

The Djibouti Code of Conduct is a multilateral agreement to prevent and suppress piracy in Africa. It has many signatories and came into force in 2009. The code is based on UN Security Council resolutions on counter-piracy.[34] The signatories agree to cooperate in enforcing maritime piracy laws, including joint prosecutions, investigations, interdictions, seizures, and rescue operations.

The Djibouti Code of Conduct implements its cooperative commitments through communication, cooperation, coordination, and transnational communication methods. This code has facilitated the development of the Djibouti Regional Training Centre (DRTC), which provides active support and training for African seafarers and law enforcement agents to respond effectively to piracy incidents. The code also creates a framework for cooperating with external Western, European, and East African intelligence services, such as NATO, EU NAVFOR, East African Standby Force (EASF), Saudi Arabia's Mohammed Bin Nayef Academy of Science and Security Studies, U.S. AFRICOM, and Turkey's Maritime Security Centre of Excellence.

These intelligence services support member states' legislative efforts, training, operations, and strategic frameworks for piracy repression. With the cooperation of external security institutions, signatories to the Djibouti Code has the potential to effectively tackle piracy and armed robbery incidents off the coast of Africa, particularly the Horn of Africa. According to the code, the signatories share maritime risk assessments and best practices and implement piracy countermeasures, including compliance checks for maritime port facilities[35] .

5. Naval Policies and Strategies to Combat Maritime Piracy and Armed Robbery against Ships

Naval powers of influential countries have contributed significantly toward combating sea piracy. The remarkable contribution of U.S., European Union (EU), and Indian Navies through joint operations since 2008 has drastically reduced encounters with Somali pirates and strengthened maritime security and safety of navigation in the Horn of Africa and the Gulf of Aden[36].

The operational military response to piracy includes the creation of a multinational fleet, the Combined Task Force (CTF). Naval policies and strategies aimed at piracy suppression for this thesis can be summarized as follows: (a) U.S.-led operations to combat piracy (b) European Naval operations to combat piracy, and (c) contributions of the Indian Navy toward piracy suppression in the Gulf of Aden.

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[30] Available online: https://www.lr.org/en/services/statutory-compliance/isps-code/ (accessed on 15 September 2024)

[31] Available online: https://blog.pazago.com/post/isps-charges (accessed on 15 September 2024)

[32] Available online: https://www.recaap.org/resources/ck/files/ReCAAP%20Agreement/ReCAAP%20Agreement.pdf (accessed on 15 September 2024)

[33] Available online: https://www.recaap.org/resources/ck/files/news/2013/Press%20Statement%20FPSOM%205-13.pdf (accessed on 15 September 2024)

[34] Available online: https://www.imo.org/en/About/Events/Pages/Council.aspx (accessed on 15 September 2024)

[35] Available online: https://dcoc.org/about-us/secretariat/ (accessed on 15 September 2024)

[36] Available online: https://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/S_2020_1072_Piracy_Somalia.pdf (accessed on 15 September 2024)

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5.2 U.S.-Led Joint Operation to Combat Piracy (Combined Task Force CTF)

The U.S. Navy led the formation of the Combined Maritime Forces (CMF) to counter piracy in the Gulf of Aden and other vulnerable areas. The CMF also escorts commercial vessels. Active patrolling by the CMF has significantly reduced maritime piracy in the Gulf of Aden[37].

The CMF includes naval forces from NATO, the EU, and the U.S. Navy. The primary task forces operating under the CMF are CTF 150 and 151[38]. These forces conduct joint patrols regularly in vulnerable, piracy-prone zones, covering approximately 2.5 million square kilometers of ocean space.

5.3 CTF Operational Measures

The CTF maintains 24-hour lookouts, conducts hot pursuits, and dispatches SEAL teams and naval commandos to hijacked vessels. They also use deck lighting, razor wire, netting, fire hoses, electrical fences, surveillance equipment, evasive maneuvers, high-speed transit, and regular aerial patrols to combat piracy[39].

5.3.1 Case Study: Hijacking of Maersk Alabama (2009)

In 2009, the U.S.-registered bulk freighter Maersk Alabama, operated by Maersk Shipping and Logistics Company, was en route to Mombasa, Kenya, carrying World Food Organization relief cargo. The vessel, captained by U.S. citizen Richard Phillips, began its voyage on April 1, 2009. When the vessel reached the Somali Basin near the Gulf of Aden, a Somali pirate trawler located the vulnerable ship, which was cruising at 10-14 knots to conserve fuel. The pirates, seeing an opportunity, dispatched a speedboat with several pirates armed with AK-47 rifles. The pirate speedboat successfully boarded the Alabama and took control of the ship's bridge.

Captain Phillips moved the crew to a safe area below deck and activated the ship's silent alarm, sending a distress signal to a nearby CTF-controlled warship. After an intense 6-7 hours, the pirates, frustrated by their inability to control the crew, left the ship, taking Captain Phillips as a hostage in a lifeboat. The CTF team immediately surrounded the lifeboat and began hostage negotiations. During the standoff, CTF scout snipers strategically killed two of the pirates and rescued Captain Phillips. The third pirate was captured and handed over to local authorities for prosecution[40].

5.4 EU Counter-Piracy Operation

The European Union's counter-piracy operation off the coast of Somalia, known as Operation Atalanta, was launched in 2008 to provide security for Africa-bound relief vessels, (UK Parliament, 2010). Although, EU NAVFOR forces are not as large as the U.S.-led CTF, they conduct joint operations with the CTF to enhance the effectiveness of counter-piracy efforts. EU NAVFOR also works closely with the Somali Transitional Federal Government (TFG) to reduce local piracy activities.

5.5 Indian Navy Anti-Piracy Measures off the Coast of Somalia

The Indian Navy operates several destroyers and warships in the Gulf of Aden to protect and escort Indian-flagged and foreign vessels. The Indian Navy regularly ensures the safe passage of merchant vessels through the Internationally Recommended Transit Corridor (IRTC) off the Gulf of Aden[41]. The Indian Navy has an impressive track record in suppressing piracy off the coast of Somalia and works closely with the TFG to bolster Somalia's efforts to combat piracy.

6. Role of Private Maritime Security Companies (PMSC) towards Piracy Prevention

The rise in piracy attacks compelled European flagged shipping companies to adopt best practices to combat piracy. One such method was the sanctioning of Vessel Protection Detachments (VPDs), where the flag state's naval forces would escort commercial vessels, providing them with a secure navigational route, despite its effectiveness, the availability of VPDs proved limited due to the vastness of the maritime industry and the heavy traffic in piracy-prone High-Risk Areas (HRAs), particularly large straits (Ilja 2014).

Due to the unavailability of VPDs and the urgent need for real-time vessel protection, stakeholders and shipping company owners turned to privatized onboard protection methods. Private Maritime Security Companies (PMSC) emerged as a solution, offering contractual security services to shipowners (Marin et al. 2017).

When a shipping company contracts with a PMSC, the PMSC undertakes complex legal and regulatory formalities before dispatching armed guards to the vessel. These guards remain onboard until the contract expires, providing real-time protection against pirate and robbery attacks. PMSCs are now operational in most HRAs, including the Gulf of Guinea and the Gulf of Aden, offering vital services to the commercial shipping industry (Zuhdi 2018).

PMSCs provide hired armed guard or mercenary protection to vessels against pirates. Several small groups of highly trained armed personnel remain onboard, conducting patrolling and surveillance. In addition, PMSCs offer risk assessments, anti-piracy breach exercises, armed escorts, tactical military security training, and armed protection. Other noteworthy PMSC services include instant

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[37] Available online: https://unipath-magazine.com/the-value-of-combined-maritime-forces/ (accessed on 15 September 2024)

[38] Available online: https://combinedmaritimeforces.com/ctf-150-maritime-security/ (accessed on 15 September 2024)

[39] Available online: https://www.ismor.com/ismor_archives/32ismor_archive/papers/pdf/32ismor_macleod_wardrop_paper.pdf (accessed on 15 September 2024)

[40] Available online: https://www.britannica.com/event/Maersk-Alabama-hijacking (accessed on 15 September 2024)

[41] Available online: https://www.spsnavalforces.com/story/?id=381 (accessed on 15 September 2024)

emergency response, hostage negotiations, vessel protection, and oil platform protection, and operational support for anti-piracy operations[42] .

6.1 Netherlands' Practice towards Privatized Vessel Protection

Dutch-registered vessels faced increased piracy threats between 2008 and 2011. In response, the Netherlands passed the 2019 Merchant Shipping Protection Act, allowing private armed guards onboard vessels, (Cusumano and Stefano Ruzza 2020). Unlike other EU nations, the Netherlands recognized the limitations of relying solely on military protection. The Act allows Dutch shipping companies to use private armed security companies only when military protection is unavailable. These companies typically operate in high-risk areas like the Gulf of Aden, Gulf of Guinea, and Horn of Africa. Security guards can only fire their weapons in international waters. The Dutch government has heavily regulated the PMSC market within the Netherlands. Unlike other private sector businesses, PMSC services require proper government sanctioning (Giles and Janssen 2014).

Dutch PMSC security guards may target the pirates' boats or vessels, aiming at the bow or engines to stop them from matching the cruising speed of the vessels they are protecting. As a last resort, if pirates manage to board the vessel, PMSC security personnel are permitted to fire at non-vital parts of the pirates' bodies (Yarin 2018).

The ship's authority must record audio and video footage of each pirate encounter to ensure that the actions of the security guards can be justified later[43]. Before starting a voyage, the PMSC consults with the shipmaster to assess the accountability for any piracy casualties.

6.2 Malta's Practice to Incorporate Privatized Vessel Protections

Malta, the largest flag state in Europe, operates numerous registered vessels under her flag and has adopted a permissive legal regime authorizing onboard vessel protection[44]. The lack of VPD support has encouraged Maltese shipping companies to adopt PMSC services. Seagull Maritime Security, Malta's largest Maritime Security Company, provides vessel protection not only to Maltese vessels but also to many international vessels operating in East and West Africa.

Other major European shipping nations, such as Norway, Denmark, Germany, Belgium, and the UK, have already legislated and authorized national and multinational PMSCs to operate on their vessels. European vessels under PMSC protection now frequently operate with onboard security.

6.3 Advantages and Disadvantages of PMSC in Maritime Security Enhancements

Among the many advantages of PMSC services, their ability to ensure the safety of the client ship, cargo, and crew from external attacks stands out. The availability of onboard vessel protection has become more accessible to shipping companies. PMSC security personnel provide real-time, strategic in-house protection, actively deterring pirates from attacking vessels. This alleviates the burden on VPDs and naval forces, as navies cannot escort all ships and provide real-time protection against pirates.

PMSCs offer shipping companies peace of mind, enabling them to dispatch more ships, which improves logistics, positively impacts the maritime economy, and strengthens maritime security. Cruise liners, passenger ships, and luxury yachts are now reaping the benefits of onboard vessel protection. PMSC security personnel are trained to combat piracy and armed robbery against ships efficiently, thanks to their excellent risk assessment tactics.

Using PMSC services raises serious concerns[45], PMSCs could interfere with coastal state sovereignty and violate rules of engagement. Some PMSC personnel may engage in unethical, economic, and controversial activities. PMSCs must confirm their service standards and obtain licenses. PMSC security contractors demand significant sums of money and have been accused of indiscriminate killings, tarnishing their reputation. These actions are now penalized, and PMSCs must work to eliminate them.

7. Recommendations

Existing frameworks, including UNCLOS and the SUA Convention, offer foundational protocols for countering piracy. However, limitations exist, such as UNCLOS's narrow definition of piracy, which excludes incidents within territorial waters. The effectiveness of regional agreements, such as ReCAAP and the Djibouti Code of Conduct, depends heavily on cooperation and information-sharing but faces challenges with implementation consistency. Pirates have evolved technologically, outpacing the enforcement mechanisms of many states. The maritime security frameworks struggle to maintain pace with these developments. National and regional enforcement, though robust in some cases (e.g., China, Malaysia), face jurisdictional limitations, fragmented responses, and geopolitical constraints. Countries like China, Malaysia, and Japan emphasize strong law enforcement, international cooperation, and joint patrols to protect crucial trade routes such as the Strait of Malacca. Weaknesses persist, such as China's decentralized maritime law enforcement system and Malaysia's limited ability to pursue pirates across maritime borders.

The involvement of PMSCs has filled operational gaps, providing real-time protection for vessels in high-risk areas like the Gulf of Guinea and Gulf of Aden. Although effective, PMSCs raise concerns over legality, accountability, and the potential for human rights abuses. Regulatory oversight remains essential to prevent unethical practices. Multinational task forces, such as the U.S.-led Combined Task Force (CTF) 151 and EU's Operation Atalanta, have significantly reduced piracy off the coast of Somalia. India and Australia also actively participate in anti-piracy operations through naval presence and law enforcement but face internal challenges like

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[42] Available online: https://www.ocimf.org/publications/information-papers/guidance-for-the-employment-of-private-maritime-security-companies (accessed on 15 September 2024)

[43] Available online: https://wwwcdn.imo.org/localresources/en/OurWork/Security/Documents/global-counter-piracy-guidance-bmp_low_17-07-18.pdf (accessed on 15 September 2024)

[44] Available online: https://irglobal.com/article/advantages-of-the-maltese-flag-and-a-maltese-merchant-shipping-company-2/   (accessed on 15 September 2024)

[45] Available online: https://archive.globalpolicy.org/pmscs/50208-contractor-misconduct-and-abuse.html (accessed on 15 September 2024)

fragmented jurisdiction and complex enforcement frameworks. The implementation of maritime security codes such as ISPS faces obstacles, including cost, delays in cargo logistics, and inconsistent compliance among ports. Countries like Nigeria struggle with piracy in the Gulf of Guinea due to weak governance and economic instability, which hinder sustainable enforcement efforts. Legal frameworks should be harmonized to address the jurisdictional gaps, particularly in relation to piracy within territorial waters. Enhanced cooperation among states, coupled with investments in surveillance technologies and capacity-building, can improve real-time responses to piracy threats. Further integration of PMSCs within global maritime security frameworks, with robust regulatory oversight, can strengthen protection efforts while minimizing risks.

8. Conclusions

Maritime security remains a critical global concern, as piracy and armed robbery threaten the safety of navigation, disrupt international trade, and undermine economic stability. Technological advancements among pirate groups outpace traditional security measures, demanding adaptive responses. Regional strategies, such as those employed by China, Malaysia, and Japan, demonstrate the importance of cooperation, but fragmented enforcement systems and geopolitical complexities still limit their success. The involvement of private maritime security companies (PMSCs) has filled critical operational gaps, offering real-time vessel protection in high-risk areas. However, PMSCs present legal and ethical challenges, underscoring the need for stricter oversight. To ensure sustainable maritime security, it is essential to bridge the existing gaps in enforcement, build capacities through information-sharing platforms, and invest in surveillance technologies. Strengthening regional cooperation, particularly in piracy-prone areas, and refining the role of PMSCs within regulatory frameworks will further enhance maritime security. This study concludes that while progress has been made, continued efforts are necessary to develop comprehensive, adaptive, and standardized strategies that can effectively deter piracy and armed robbery at sea.

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