

NIMA RESEARCH PAPER
NRP 09-23-06
September 2023

**NON-TRADITIONAL MARITIME
SECURITY THREATS IN
21ST CENTURY & ITS IMPACT ON
PAKISTAN**



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ABSTRACT

The concept of non-traditional maritime security has gained prominence in the late 20th and early 21st centuries, reshaping the discourse on global security beyond conventional military concerns. This paradigm shift recognizes that contemporary challenges to the well-being and survival of individuals and nations often emanate from non-military sources. These non-traditional maritime security issues encompass an enormous range of transnational threats, including piracy, trespassing, terrorist threats, illegal maritime trade, resource scarcity, irregular migration, human and drug trafficking.

Furthermore, use of non-state actors and fifth generation warfare is on the rise. Mitigating maritime threats emanating from non-traditional maritime securities challenges are beyond the capacities of individual states, military machines, and political / administrative setups. Therefore, a global response is required to address these challenges.

This paper will seek to address the concept of non-traditional maritime security with the evolution of security discourse in response to contemporary global maritime related challenges. It emphasizes the interconnectedness of issues that extend beyond military dimensions and focuses on maritime security rather than traditional state security. Thus, necessitating a comprehensive and collaborative approach to safeguard the well-being of both individuals and nations in an ever-changing world.

Keywords: Non-traditional security, Maritime Threats, Piracy, Conflicts, Pakistan, Fishing



1. CONCEPT OF SECURITY

a. Security is a multifaceted concept that encompasses measures, protocols, systems, and practices designed to safeguard individuals, organizations, assets, information, and systems from various threats and risks. It involves the protection of confidentiality, integrity, availability, and authenticity of resources and data. Security measures aim to mitigate vulnerabilities and minimize the likelihood of unauthorized access, breaches, disruptions, or damage to assets.

b. Maritime Security is an essential pillar of national maritime interests. It is about maintaining safety in the face of all risks and difficulties encountered in the maritime domain, including from non-state actors and conventional forces. Along with protecting against natural hazards, maritime security also considers fixing flaws that already exist. The idea is not only broad and varied but also multidimensional as it is currently understood (Baldwin, 1997). It covers both traditional maritime security challenges, including state sovereignty concerns and territorial conflicts, as well as non-traditional maritime security issues, like terrorism, piracy, drugs, arms and human trafficking, and it also tackles environmental issues such as pollution and illicit fishing.

c. In traditional and nontraditional security paradigms, maritime security has been extensively studied. The term "traditional" refers to customs that have endured over time and have become ingrained traditions in certain geographic areas, states, countries, or cultural groupings. These traditions and conventions not only help to form the rich tapestry of cultural diversity, but they also served as the grounds for the creation of customary international law. In addition, these practices and traditions served as the foundation for the International Humanitarian Laws (IHL) (Jenkins, 2019).

d. Traditional maritime security focuses primarily on interstate conflicts, the assertion of supremacy over marine territory, and control of crucial rivers and choke points. It covers the crucial duty of defending Sea Lanes of Communication (SLOCs) against outside interference and dangers that can jeopardize stability and global trade.

e. Non-traditional security threats are challenges to the survival of people and countries that are the result of natural disasters like climate change, lack of resources, contagious diseases, natural calamities, migration issues, shortage of food, smuggling, drug trafficking and transnational crimes. The issues of Climate Change occur due to natural processes which are caused by human activities and disturb the balance of nature with dreadful outcome to countries (Gong, 2024).

2. OLD DEFINITIONS OF TRADITIONAL AND NON-TRADITIONAL MARITIME SECURITY

The concepts of traditional and non-traditional maritime security have been defined and discussed by various scholars over the years. Here are some older definitions and perspectives from scholars:

2.1 Traditional Maritime Security

a. **John Mearsheimer (1990):** In his book "The Tragedy of Great Power Politics," Mearsheimer discussed traditional maritime security as a subset of national security, focusing on a state's efforts to protect its maritime interests, sea lines of communication, and access to vital maritime resources. He emphasized the role of naval power and interstate competition in this context.

b. **Admiral Alfred Thayer Mahan:** He is renowned for his influential works on sea power, including "The Influence of Sea Power upon History" (1890), which emphasized the critical importance of maritime dominance for national security and international influence.

c. **Barry Buzan:** A scholar in international relations, Buzan's works on security studies, particularly the concept of "securitization" and the widening security agenda, have relevance to maritime security discussions (STONE, 2009).

d. **Samuel Huntington (1957):** Huntington's work "The Common Defense" highlighted traditional maritime security as the protection of coastline and territorial waters of the state from external military threats (Vanhullebusch & Shen, 2016). He argued that maritime power projection and control of key sea routes were essential components of national security (Snyder, 1962).

2.2 Non-Traditional Maritime Security

a. **David Baldwin (1997):** In his article "The Concept of Security," Baldwin discussed non-traditional security issues, including those in the maritime sector. He emphasized issues like piracy, environmental degradation, and illegal trafficking as non-military challenges to maritime security.

b. **Bernard Cole (2009):** In his book "Great Wall at Sea," he explored non-traditional maritime security issues in East Asia and discussed non-state actors' roles in piracy and terrorism, as well as challenges related to energy security, environmental concerns, and economic competition (Cole, 2001).

c. **Christelle M. Jovenir:** The idea of non-traditional security arose when Barry Buzan redefined security to include more than just

immediate threats. He advocated for a broader, collective approach encompassing various sectors. Non-traditional security threats are typically non-military, transnational, and spread rapidly due to globalization and communication advancements.

3. CHANGING NATURE OF CHALLENGES IN THE 21ST CENTURY

a. The 21st century has seen the emergence of new concerns that go beyond Traditional and non-Traditional maritime security sectors, necessitating the attention of security experts, social scientists, and maritime professionals. Security issues on land and at sea have been exacerbated by non-state actors, hybrid warfare, and geo-economic tactics, asking coordinated state and public responses. The intricacy of media manipulation has increased since no organization can stop the spread of bad narratives. The impact of urbanization on marine life, resource management, coastal development, ocean acidity, pollution effects, unsustainable resource exploitation, increased underwater noise disrupting ecosystems, and hazardous waste dumping are notable examples of maritime challenges. It needs interdisciplinary work and international cooperation.

b. The rise in sea level and temperature due to global warming and the melting of glaciers required an immediate global response (Lim, 2015). During COP28, the UAE government, along with corporate leaders, introduced the Global Decarbonization Charter (OGDC). This initiative targets about 50% (Pakistan, n.d.), reduction of greenhouse gas emissions from 50 significant oil and gas companies, encompassing 29 Nationally Owned Companies (NOCs).

3.1 MARITIME THREATS IN INDIAN OCEAN

a. The Indian Ocean region is severely affected by climate change, which is drastically changing the properties of the oceans and causing extreme events like temperature changes, floods, and epidemics. Recurring heat waves, floods, and sea storms influence Pakistan's economic and maritime interests. Since 1880, sea levels have risen by 8 to 9 inches because of rising temperatures. (Kuta, 2022) The effects of urbanization and the expansion of coastal megacities have severe consequences for marine life. Unnecessary exploration of seabed resources and coastal development are leading to increased seawater acidity, adversely affecting marine organisms. The unsustainable exploitation of marine resources by humans and the rise in underwater noise levels pose additional challenges that interfere with biological and behavioral processes in marine ecosystems.

b. Terrorism, piracy, human trafficking, drugs, smuggling of merchandise and weapons, unattended emissions, loss of ecological systems, hazards to the environment (such as warming temperatures), scarcity of food, the safety of life and property at sea, illegal,

unreported, and unregulated (IUU) fishing, etc. are all covered by non-traditional security threats. Typically, states handle all of these issues. Nonetheless, the significance of proactive involvement by interested parties, especially people, in addressing these obstacles remains unclear.

c. The new concept of a non-traditional maritime security paradigm, redefining the terms of maritime security, is necessary to meet the ever-changing challenges. This model expands maritime security beyond conventional military aspects and recognizes non-traditional threats. For Pakistan, this means protecting against rising sea levels, coastal erosion and extreme weather events caused by climate change, especially in areas such as Karachi and deployment resilient infrastructure. It also includes securing marine resources through measures such as combating illegal fishing and promoting sustainable practices to protect food security and livelihoods. Ensuring human security is vital, addressing issues such as human trafficking and maritime migration, while actively engaging coastal communities. Pakistan can boost its blue economy by diversifying its maritime activities and strengthening cybersecurity to protect ports, shipping, and critical infrastructure from cyber threats, thereby promote economic growth and security in the maritime sector.

4. NON – TRADITIONAL MARITIME SECURITY THREATS IN INDIAN OCEAN

The Indian Ocean Region (IOR) is increasingly seen through the lens of strategic competition and rivalry among major powers. Robert Kaplan suggests that the Indian Ocean serves as a battleground for Sino-Indian rivalry. However, this perspective overlooks crucial non-traditional security (NTS) issues that could foster cooperation instead of competition, leading to socio-economic benefits for IOR nations. Several pressing NTS challenges in the IOR have significant maritime dimensions, such as illegal migration, natural disasters, climate change impacts, and unregulated fishing (IUU). Addressing these transnational challenges necessitates collaborative efforts across the Indian Ocean's borders. ASEAN's active involvement in NTS issues, particularly those impacting its member states within the IOR, could present models and opportunities for broader cooperation.

4.1 Irregular Migration

a. The Indian Ocean region has a history of irregular migration, including human trafficking and smuggling. Around 4.96 million refugees and asylum seekers exist globally as mentioned below in the chart.

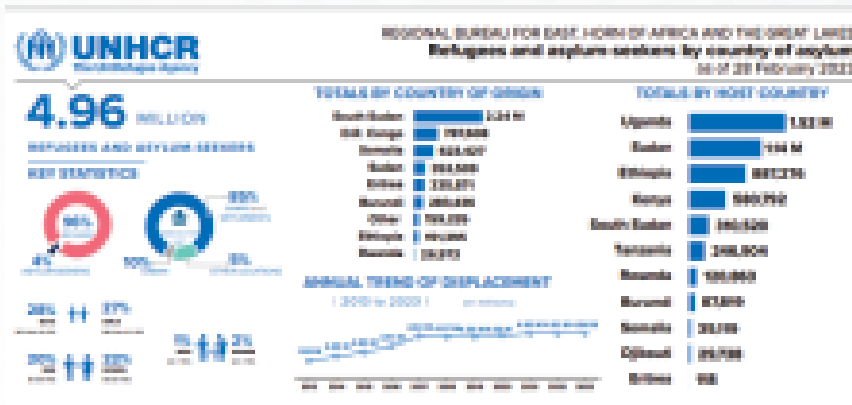


Figure 4.1: REGIONAL BUREAU FOR EAST, HORN OF AFRICA AND THE GREAT LAKES (Region
Regional Bureau for the East and Horn of Africa, and the Great Lakes Region, 2024)

4.2 Arms Smuggling

a. Long going internal issues within the borders of Indian Ocean states have increased the arms rush since the Cold War, that resulted in extensive arms trafficking across various sub-regions. Failure of the state Somalia and getting access to arms easily increased the piracy in Africa and Gulf of Aden. Moreover, conflict of Afghanistan has caused trading of illegal weapons via maritime and land routes. Defeat of LTTE insurgency of Sri Lanka in 2010 have ended a long maritime struggle regarding the weaponry(Hindawan, 2011). However, there are still conflicts going on in southern Thailand and uncertainty in Myanmar that impose risks on the nearby states as well. The high magnitude of inter-regional maritime trade confuses the detection of illegal shipments of weapons. The recent event focuses on the concerns about IOR serving as a trench for weapons of mass destruction.

b. India has exhibited its dedication to increasing maritime security, incorporating through the initiatives of Indian Ocean Rim Association and the Bay of Bengal. Such cooperative responses to maritime crime are essential with 80 per cent of global trade carried by sea, and major shipping routes along the Indian Ocean. During the pandemic,

c. Despite the pandemic, piracy and armed robbery at sea persisted as significant dangers. Seafarers' lives remained in jeopardy, notably in the Gulf of Guinea, where around 90% of kidnapping incidents have taken place. According to a recent study by UNODC, pirate activities in the Gulf of Guinea are evolving to become more sophisticated. Approximately six pirate groups, comprising 30 to 50 members each, have enhanced their capabilities to carry out attacks in deeper waters. They are mostly targeting international vessels to kidnap crew members for ransom (UNSC-Maritime-090821, 2021).

d. The overall combined income resulting from the attacks has been estimated at some four million dollars per year. The economic impact, though, has been estimated to be in the range of 800 million dollars. Between the first halves of 2019 and 2020, there was a 20 % rise in instances of piracy and armed robbery against ships. Maritime Piracy Hotspots Persist during 2020 (Hellenic Shipping News Worldwide, 2021).

e. Security needs, changes in routes, additional fuel, increased insurance, and other costs are estimated in the billions of dollars, with an obvious negative impact on global trade. UNODC has supported Member States to address transnational challenges to maritime security for more than a decade.

f. According to Ghada Waly, Executive Director of the UN Office on Drugs and Crime (UNODC), a program initiated in 2009 to tackle the Somali piracy issue has evolved into the largest initiative within the organization. Its budget has reduced significantly from \$300,000 to surpass \$230 million surpass to fall behind.(Waly, 2021) This assistance is delivered by some 170 personnel based in 26 Member States, who work in crews focusing on the Indian Ocean; the Atlantic & Pacific Oceans; Latin America and the Caribbean; the Gulf of Aden & Red Sea; and the Mediterranean & Black Sea (S/2021/722: UN Documents : Security Council Report, 2021).

g. We need greater concerted international efforts to target challenges and to reduce liabilities to secure the seas. Firstly, we need more effective implementation of the international legal framework and Security Council resolutions promoting maritime security. Among these is Security Council resolution 2551, which entrusts UNODC with a key responsibility in assisting states in obstructing the trafficking of both illegal and legal items into and out of Somalia. Additionally, it aims to hinder the supply of components used for improvised explosive devices by Al Shabaab (Security Council Committee Pursuant to Resolution 2713 (2023) Concerning Al-Shabaab | United Nations Security Council, 2023).

4.3 Drug Trafficking

a. South Africa has been a target for both drug sales and as a transit point for narcotics. It grapples with numerous drug-related issues, compounded by its strategic positioning between the primary illicit opiate-producing regions.

b. In this context, South Asia remains a prime target for traffickers transporting illicit opiates from Afghanistan to Europe and North America using the "alternate" southern route. Moreover, coastal states in the region face susceptibility to maritime trafficking due to their exposure along trafficking routes across the Indian Ocean.

c. European ports experienced a surge in the confiscation of cocaine shipments, as per the UNODC's 2021 World Drug Report. Preliminary figures from 12 nations suggest an 18% increase in the amounts seized at seaports compared to the previous year. As the 2020 Secretary-General's report on "Oceans and the law of the sea" emphasized, oceans also serve as transit areas for some 99 % internet traffic of the world. During the COVID-19 crisis, usage boosted by up to 50 % (UNSC-Maritime-090821, 2021).

d. There's a noticeable shift from trafficking in narcotic drugs to synthetic drugs, including amphetamine-type stimulants, and chemical precursors. The accessibility to drugs has escalated with online sales, where the dark web alone has seen an annual drug trade surpassing \$315 million. The swift technological advancements coupled with the adaptability of traffickers utilizing online platforms pose a threat by increasing the availability of illicit drugs, ensuring anonymity throughout the supply chain right to the consumer's doorstep.

e. Tackling these emerging challenges necessitates a profound comprehension and immediate joint action from governments, especially law enforcement and health agencies. Recognizing these complexities, the UNODC organized a regional expert group meeting aimed at fortifying policy and program responses to the drug predicament in South Asia (Parak, 2022).

4.4 Illegal, Un-reported and Un-regulated Fishing

a. Unregulated fishing in the Indian Ocean poses a severe threat to marine ecosystems, leading to overexploitation of fish stocks and endangerment of marine species. This practice disrupts the delicate balance of the ocean's biodiversity, impacting both local economies and global food security.

b. The Agreement on Port State Measures (PSMA) stands as the inaugural globally binding protocol dedicated to preventing, discouraging, and eradicating Illegal, Unreported, and Unregulated (IUU) fishing by restricting port access for foreign vessels engaged in or supporting such practices. QU Dongyu, FAO Director-General, emphasized the burgeoning consumer demand and evolving agrifood systems in fisheries and aquaculture, propelling global fish production to unprecedented levels, highlighting the urgent need to intensify efforts against IUU fishing (*FAO Director-General Champions Agrifood Systems as the Climate Solution at COP28*, 2023).

c. Around one in every five fish captured worldwide is estimated to be a product of IUU fishing, wreaking havoc on fishery sustainability, jeopardizing livelihoods, and imperiling marine ecosystem conservation (*The Global Fight against Illegal, Unreported and Unregulated Fishing Reaches a New Milestone*, 2022).

d. Combatting IUU fishing is imperative to fortifying national, regional, and global endeavors aimed at achieving sustainable fisheries and advancing the UN's Sustainable Development Goals. With Angola, Eritrea, Morocco, and Nigeria recently joining the agreement, 60 percent of port States globally are now dedicated to combating IUU fishing. This bolstering support for the PSMA aligns with the Sustainable Development Goals, as hailed by a senior FAO official. Manuel Barange, director of FAO's Fisheries and Aquaculture Division, stressed that it is our collective responsibility to prudently manage and utilize aquatic resources sustainability. He emphasized the necessity for concerted efforts in reinforcing port controls and facilitating robust information exchange through PSMA implementation (Sun, 2022).

e. The introduction of the PSMA Global Information Exchange System (GIES) by FAO complements the FAO Global Record of Fishing Vessels, Refrigerated Transport Vessels, and Supply Vessels. These platforms are instrumental in assisting PSMA nations and related instruments in their endeavors to combat IUU fishing. FAO has supported over 50 countries in evaluating their laws, fortifying institutional capabilities, and enhancing monitoring, control, and surveillance systems to effectively enforce the agreement and fulfill their global commitments (UN News, 2022).

5. IMPORTANCE OF PEOPLE CENTRIC APPROACHES PARTICULARLY IN PAKISTAN

a. A people-centered approach to maritime security in Pakistan is important for many reasons, as it puts individuals, communities, INGOs and stakeholders at the center of security. This approach recognizes that maritime security is not just a matter of state law enforcement but also requires the active participation and cooperation of many different actors.

b. Pakistan's maritime approach should be people-centric to achieve socioeconomic development. This approach should be driven by the principles of inclusivity, community engagement, and responsiveness. Pakistan's National Security Policy (NSP) recognizes the importance of improving Pakistan's socioeconomic indicators and becoming an export-led economy, increasing its exports to attract foreign direct investment, reduce unemployment, and support. Pakistan's maritime domain is important for its geopolitical and geo-economic interests, and its maritime strategy aims to maintain and modernize its maritime security (Ansari, 2020).

c. The Maritime Doctrine of Pakistan, Preserving Freedom of Seas, is an effort to disseminate broad knowledge on the national maritime sector and maritime security issues. Pakistan's navy also plays a pivotal role in the maritime domain through maritime diplomacy.

d. Here are some reasons why a people-centered approach to maritime security in Pakistan is important, e.g. Pakistan's coastal communities have invaluable local knowledge about their maritime environment. They can serve as the first line of defense against security threats because they are often more aware of trends and activities taking place in their waters for example, local fishermen can detect and report unusual activities at sea, potentially related to piracy or illegal fishing.

e. A people-centered approach makes coastal communities more resilient in the face of natural disasters and security incidents (Ayeb-Karlsson et al., 2016). During a tornado or tsunami, local communities can lead evacuation efforts, provide immediate assistance, and coordinate relief operations because they understand local dynamics and needs. Non-state actors also raise public awareness of the importance of maritime security and environmental protection. It raises awareness of risks and challenges among individuals and communities, encourages responsible behavior and provides support for safety initiatives. For example, awareness campaigns can inform communities about the consequences of illegal fishing or the importance of reporting security incidents.

6. MARITIME ECONOMY AND NATIONAL SECURITY

a. Pakistan's maritime economy is important for both economic growth and national security. The maritime sector can diversify the economic base and stimulate Pakistan's economic growth. However, decades of neglect have hampered the development of the maritime sector, which in turn has hurt both economic growth and the national security of the country. The domestic shipping and shipbuilding industries are in disarray, and the exploitation of offshore natural resources is restricted to coastal fisheries. Despite its animosity with neighboring India, Pakistan has until recently relied on two collocated ports at Karachi, which would be a vulnerable target in any war. The continental mindset of the policymakers has affected the development of the Pakistan Navy as an effective force (Samad, 2022).

b. The Pakistan Navy dominates key positions in several maritime institutions, including the Karachi Shipyard and Engineering Works, Karachi Port Trust, and the Pakistan National Shipping Corporation. The government tasked the Pakistan Navy with formulating a National Maritime Policy and National Maritime Doctrine in 2011, which are still awaiting cabinet approval. Lack of government interest in maritime issues also incentivized the Navy to advocate for the maritime sector. The new National Security Policy of Pakistan aims to protect Pakistan's EEZ, ensuring freedom of navigation and strengthening Pakistan's sea lines of communication. The policy recognizes the Indian Ocean region as a contested space, as well as its impact on regional security in general and Pakistan's national security in particular (Center for International Maritime Security, n.d.). The policy also focuses on the indigenization of Pakistan's defense production and the development of a blue economy. The Pakistan Navy's chief has stated that the maritime sector holds enormous potential for Pakistan's economy.

c. The maritime domain has risen to the forefront of national interests and security agendas worldwide. It is an established fact that no nation has achieved progress without the development of its maritime sector. This changing landscape of the maritime economy has become a vital element of national security, particularly for nations such as Pakistan, where the maritime domain should be recognized as the cornerstone of the national economy (Briffa et al., n.d.).

d. Pakistan faces a critical dependence on imported energy sources, including oil, LNG, and coal. On average, approximately 3.1 ships arrive daily at Pakistani ports, carrying energy-related cargo, highlighting a significant vulnerability that could impact our national security. Pakistani ports handle over 91% of the nation's total cargo via sea routes, emphasizing the necessity of maintaining safe sea lanes of communication. It's worth noting that Pakistan expends more than 5 billion US dollars annually on foreign carriers for transportation and insurance charges. Additionally, the country's fishery sector contributes substantially to food security, while maritime tourism offers opportunities for foreign exchange earnings, and ship recycling provides a source of affordable raw materials for the cottage industry. Therefore, ensuring the safety and operability of port approaches is crucial for global trade, as is safeguarding Pakistan's sea lanes and waters from external interference, both of which are integral to the nation's economic and national security interests.

7. PAKISTAN'S MARITIME SECURITY LANDSCAPE

a. Pakistan's maritime security landscape holds significant geopolitical importance due to its strategic location along the Arabian Sea. The Karachi port, as the largest and busiest in the country, serves as a critical hub for trade, connecting Pakistan to Central Asia and the Middle East. This location also makes Pakistan a key player in maintaining the security of maritime trade routes.

b. However, Pakistan has encountered issues with marine security, such as incidents of piracy and maritime terrorism. Concerns relating to the safety of ships and trade routes in the Arabian Sea have been raised because of these problems (Nawaz, 2022). Pakistan Navy has aggressively been trying to upgrade its fleet as a result, buying brand-new submarines, ships, and planes. The goal of this modernization project is to increase Pakistan's capacity to secure and protect its maritime borders. Pakistan, which shares maritime borders with India, Iran, and Oman, places a high priority on border security. Smuggling, human trafficking, and other criminal operations must be stopped by effective border administration and monitoring. To accomplish these security goals, cooperation with regional allies and international partners is essential.

c. Pakistan's counterterrorism measures extend to the maritime domain as well. The country has conducted joint naval exercises with regional and global partners to enhance coordination and interoperability. These exercises contribute to strengthening the collective response capabilities to maritime

security threats. A significant development in Pakistan's maritime security landscape is CPEC, which includes the development of Gwadar Port in Baluchistan. Positioned to become a crucial trade hub, Gwadar's security and that of its associated maritime routes are of strategic importance to both China and Pakistan (Francioni, 2023).

d. Environmental concerns also intersect with maritime security, as Pakistan struggles with challenges like oil spills, marine pollution, and overfishing. Addressing these issues is vital to ensuring the sustainability of the marine ecosystem and the long-term security of maritime resources.

e. Pakistan's maritime security landscape is marked by its strategic location, efforts to combat maritime terrorism and piracy, naval modernization initiatives, border security measures, collaborations with regional and international partners, and the convergence of security and environmental challenges. It's important to note that developments may have occurred since September 2021, making it advisable to consult up-to-date sources for the latest information on Pakistan's maritime security landscape (Bueger et al., 2021).

8. IMPACTS OF NON-TRADITIONAL MARITIME SECURITY THREATS ON PAKISTAN

a. Pakistan possesses diverse landscapes, encompassing a lengthy coastline stretching 990 kilometers and the second-highest mountain peak, K2. Strategically, Pakistan's maritime territory holds significant importance in global power politics due to its crucial sea lines of communication.

b. Following the implementation of the CPEC, the Indian Ocean has become a pivotal area of interest. It has garnered attention from both the US and China due to its strategic position linking to the Middle East. In response to China and the CPEC, India aims to establish regional influence through an alliance with the USA. Pakistan contends with internal and external challenges within its maritime realm. A prominent non-traditional threat in this sphere is maritime terrorism, with India's alleged involvement in disrupting the CPEC being a significant concern. Pakistani authorities have detained various hostile operatives, including Indian Navy Commander Kulbushan Jhadav, accused of orchestrating terrorism plans along Pakistan's coastline.

c. Secondly, piracy & armed robbery are also main elements of non-traditional challenges which are significantly coming from Somali pirates. But with the help of the Pakistan Navy, there has been a decline in piracy in the Indian Ocean.

d. In the present era, the sea is utilized for illicit drug trafficking, constituting a significant non-traditional security threat. Moreover, the Indian Ocean faces the challenge of human smuggling, posing a threat to Pakistan's security. Pakistan maintains a zero-tolerance policy towards illicit drug trafficking, with the Pakistan Navy and ANF executing numerous operations

against such activities. Furthermore, the ecosystem in the Indian Ocean is significantly affected by marine pollution and unauthorized fishing, causing profound impacts. The rare fisheries along the Pakistani coastal belt are being depleted due to unregulated and unlicensed fishing practices.

e. Indian fishing boats are frequently involved in poaching within the Pakistani EEZ. The Pakistan Maritime Security Agency (PMSA) consistently apprehends Indian fishermen for trespassing into Pakistani territory. A primary aspect of non-traditional security challenges is Climate change, which represents a critical global concern. Its variability has substantial implications for human societies, economies, and the world's oceans. Climate change is fundamentally reshaping various characteristics of the sea, causing disturbances such as extreme temperatures, glacier melting, floods, storms, and epidemics in the Indian Ocean.

f. Pakistan faces recurring heat waves, floods, and sea storms that have significant impacts on both the economic sector and the maritime domain. Over time, the rising temperatures have caused the sea level to increase by 8.9 inches since 1880, with an annual rise of 0.14 inches in the water level of the Pakistani Sea. Addressing the challenge of rising temperatures along the coastal belt could involve extensive planting efforts. Additionally, the marine environment is being disrupted due to industrial sewage in Karachi, necessitating well-planned measures to address these non-traditional security challenges along the coastal belt of Pakistan.

g. Sea Blindness, a major non-traditional challenge in the Indian Ocean, refers to the lack of recognition of the maritime domain's significance. Pakistan suffers from this due to a significant portion of its population residing away from the coast. Addressing this issue requires dedicated research to counter the non-traditional security challenges of the Sea. The Pakistan Navy operates as a multidimensional force safeguarding the country's maritime domain, defending its interests, deterring sea-based aggression, providing disaster relief, and contributing to coastal community development.

h. Effectively countering both traditional and non-traditional security aspects, the Pakistan Navy influences the region and global maritime dynamics. Despite hybrid warfare tactics employed by India and similar nations, including terrorism and social media manipulation, the PN manages these challenges professionally.

i. Addressing emerging non-traditional security threats from the sea requires tailored strategies rather than a universal solution. Pakistan aims to enhance assessment and operational planning in collaboration between the Ministry of Maritime Affairs and the Pakistan Navy. Acknowledging the Navy's pivotal role in confronting both traditional and non-traditional security challenges, a comprehensive policy integrating its functions is warranted to address these threats in Pakistan's maritime domain (Arsalan, 2022).

9. RESPONDING TO NON-TRADITIONAL MARITIME SECURITY THREATS – CHALLENGES FACED BY PAKISTAN

a. Pakistan has a significant obligation to address a variety of non-traditional security threats in its maritime zones, such as piracy, blue crimes, arms smuggling, theft of marine resources, environment-related issues maritime terrorism, contraband economic activities, cyber threats, transnational organized crimes, etc. to ensure good ocean governance and "ocean security."

b. Pakistan Maritime Security Agency (PMSA), a civil armed force working under the Ministry of Defense, is authorized by an Act of Parliament that was passed in 1994 as the PMSA Act and is further authorized by international instruments for the purpose of dealing with these threats (Khan & Sadiq, 2022). PMSA focuses on ensuring peace and good order at sea through a mechanized, well-equipped, and well-organized force. While at same time with maintaining deterrence at sea by grabbing illegal narcotics and smuggling of goods in and out of Pakistan, human rights and welfare goes hand in hand with law enforcement and PMSA does it all. The organization plays a vital role in times of crisis and provides emergency assistance and rescue missions because of its civic viewpoint and status as the only law enforcing body in Pakistan's marine zones.

c. Moreover, to get over some challenges, Pakistan has taken several measures, including:

- (1) Investing in maritime infrastructure, such as modern ports and terminals.
- (2) Expanding the navy's fleet and capabilities.
- (3) Increasing intelligence gathering and law enforcement efforts.
- (4) Imposing hefty fines on violators and establishing a system for licensing.
- (5) Strengthening cooperation with other agencies, such as the Pakistan Navy, Pakistan Maritime Security Agency, and Pakistan Coast Guards.

d. Despite these efforts, more resources and cooperation are needed to effectively address Pakistan's maritime security challenges. This includes investing in advanced technology, expanding the navy's capabilities, and working closely with regional and international partners to combat maritime threats effectively (Ali Shah, 2023).

10. RECOMMENDATIONS

a. Policy Level:

- (1) Develop a comprehensive maritime strategic plan that addresses the multifaceted nature of non-traditional maritime security threats. This plan should prioritize short-term and long-term goals and integrate naval, civil, and international partnerships.
- (2) Develop a sound policy regarding the fishing sector especially to control IUU fishing practices.
- (3) ABNJ and BBNJ resources may also be exploited through robust policy regimes.
- (4) All maritime related policies should adhere to modern scientific technologies in the 21st century.
- (5) All maritime policies to be developed based on authentic data as well as sound research. Policies without adequate research are doomed to fail.

b. Government Level:

- (1) Deploy advanced surveillance technologies along Pakistan's coastline and ports, leveraging satellite technology, underwater sensors, and drones to detect illicit activities and environmental anomalies.
- (2) Foster collaboration with regional neighbors and international maritime organizations to share intelligence and best practices in monitoring and addressing threats.
- (3) Increase the capacity of the Pakistan Maritime Security Agency (PMSA) through rigorous training and equipping it with modern tools, ensuring that it remains the frontline defense against maritime threats.
- (4) Encourage joint naval patrols with regional countries, especially in piracy-prone areas, to ensure collective security.
- (5) Engage more actively with international forums like the Combined Task Force (CTF) to devise strategies against piracy and terrorism.
- (6) Invest in advanced technology and surveillance systems to monitor maritime activities effectively. Adopt satellite monitoring systems similar to those utilized by Indonesia to track illegal fishing vessels in its waters.

(7) Improve maritime law enforcement capacities and coordination among relevant agencies. Emulate the joint operations conducted by Malaysia and Thailand to combat piracy and smuggling in their shared waters.

(8) Implement measures to prevent illegal, unreported, and unregulated (IUU) fishing practices and promote sustainable fishing methods. Follow the model employed by Seychelles, which employs strict regulations and patrols to protect its marine resources from overfishing and illegal activities.

(9) Undertake initiatives to preserve marine ecosystems and prevent marine pollution. Learn from initiatives in Norway that focus on sustainable waste management and pollution control to safeguard marine environments.

(10) Develop specialized research institutions dedicated to maritime security, resource management, and environmental impact assessment.

11. CONCLUSION

Pakistan, like many other countries, faces an array of non-traditional maritime security threats that demand urgent attention. These threats, including IUU fishing, maritime trespassing, piracy, smuggling, and environmental hazards, pose significant challenges to Pakistan's maritime domain. Addressing these issues requires a multi-faceted approach involving international cooperation, regional collaboration, and effective policy frameworks. Pakistan can benefit from engaging in partnerships with neighboring countries, leveraging regional organizations, and adopting successful models from other regions to develop tailored strategies. By bolstering surveillance capabilities, strengthening maritime law enforcement, implementing sustainable fishing practices, and promoting environmental conservation, Pakistan can mitigate these threats and secure its maritime interests effectively. A concerted effort, inclusive of both domestic initiatives and international partnerships, is essential to safeguard Pakistan's maritime security in the face of evolving non-traditional threats.

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