



Non-Traditional Maritime Threats in the Indian Ocean Region: A Rising Challenge for Pakistan's National Security

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Abstract:

The evolving security architecture of the Indian Ocean Region (IOR) is increasingly shaped by non-traditional maritime threats that transcend conventional military paradigms. This paper examines the expanding scope of non-traditional maritime threats in the Indian Ocean Region (IOR) and their implications for Pakistan's national security. Beyond conventional naval conflicts, threats such as piracy, maritime terrorism, smuggling (of narcotics, arms, and goods), illegal, unreported, and unregulated (IUU) fishing, cyber-attacks on shipping and ports, and environmental risks (climate change, pollution, waste dumping) now dominate the maritime security agenda. These threats intersect with Pakistan's strategic interests: protecting the China-Pakistan Economic Corridor (CPEC) port at Gwadar, securing vital oil and trade sea-lanes (through the Arabian Sea, Gulf of Aden, and Strait of Hormuz), and safeguarding the livelihoods of its coastal populations. We reviewed academic and policy literature on Indian Ocean security, and outlined a theoretical framework of non-traditional security, as well as analyzed the regional strategic context (energy and trade flows, great-power competition, and key chokepoints). Detailed sections assess each major threat category with recent data and cases (e.g., Somali piracy's resurgence, Houthi attacks in the Red Sea, illicit drug dhows in the Arabian Sea, Chinese IUU fishing off Pakistan, recent cyber intrusions at Karachi port). Case studies of Gwadar Port security (CPEC target of militant attack), Somali piracy (Pakistan Navy's active role in CTF-151), and Red Sea disruptions (global rerouting of ships, coalition task forces) illustrate these dynamics. The analysis finds significant policy gaps from an outdated 2002 National Maritime Policy to coordination deficits among Pakistan's agencies and recommends strategic remedies. These include crafting a comprehensive maritime strategy integrating security and blue-economy goals, enhancing surveillance and law enforcement (coast guard, satellite/AIS tracking), deepening regional cooperation (IORA, IONS, CMF), and building resilience to climate and pollution risks. Our findings underscore that non-traditional threats in the IOR are intensifying and spill into Pakistan's economy, security, and governance. Only a holistic, well-resourced response can safeguard Pakistan's maritime domain in the coming decade.

Introduction:

The nature of security in the Indian Ocean has evolved, transcending the traditional focus on naval power and interstate conflict. Contemporary understandings acknowledge that security extends far beyond military dimensions (Chauhan, 2023). Pakistan, strategically positioned with a coastline spanning approximately 1,000–1,120 km from Sindh to Balochistan, is acutely aware of this shift. The nation's coastal areas border critical sea-lanes, including those facilitating oil flows through the Strait of Hormuz into the Arabian Sea, and trade routes traversing the Gulf of Aden towards the Red Sea and the Suez Canal. These routes are of paramount importance, carrying roughly 80% of the world's maritime oil trade and witnessing the passage of some 20,000 vessels annually through the Gulf of Aden (Rodrigue, Notteboom, & Pallis, 2022). The Indian Ocean's significance as a strategic nexus for commerce and energy has amplified the interest of major global players, including China, India, the U.S., and the EU. Within this intricate environment, Pakistan faces a spectrum of non-traditional security challenges at sea. These encompass irregular threats such as piracy, armed robbery, maritime terrorism, drug and arms smuggling, and illegal fishing, as well as environmental threats, including pollution, sea-level rise, and, more recently, cyber-attacks on ships and ports (Akram, 2023). This paper analyzes the impact of these non-traditional maritime threats (NTMTs) on Pakistan's national security. It discusses the characteristics of these threats, their regional drivers, and their consequences for Pakistan's economy, naval forces, and governance. The paper also examines case studies the Gwadar Port incident, Somali piracy, and Red Sea attacks to provide context, identify policy gaps, and propose strategic responses. The structure of this paper is as follows. We begin by reviewing the existing literature on maritime security in the IOR, emphasizing the concepts of "maritime security" and non-traditional threats. We then outline our theoretical framework, drawing on comprehensive security and regional security complex ideas. Following this, we describe our qualitative methodology, which includes the analysis of open-source literature, policy documents, and case evidence. We then detail the strategic context of the IOR, focusing on geopolitics, trade routes, and pivotal chokepoints. The core of the paper comprises a detailed threat analysis, covering each NTMT category with current data: piracy (Somalia and Arabian Sea), maritime terrorism (e.g., the 2008 Mumbai attack, attacks on energy infrastructure), smuggling (drugs from Afghanistan, fuel/sugar across the Makran coast, arms trafficking), IUU fishing (infringement by foreign trawlers), maritime cyber risks (hacks on AIS, port systems), and environmental threats (climate change impacts, coastal pollution). We then assess the implications of these threats for Pakistan's economy (trade routes, fisheries revenue), security forces (naval/civil coastguard burdens), and governance (legal frameworks, inter-agency roles). Case studies illustrate on-the-ground issues: an armed attack on Gwadar Port (highlighting terrorism risk to CPEC), the impact of Somali piracy and Pakistan Navy's countermeasures, and disruptions from Houthi missile/boat attacks in the Red Sea. Finally, we identify policy gaps e.g., an outdated 2002 maritime policy lacking security provisions, coordination failures and offer strategic recommendations, including an integrated maritime strategy, institutional reform, capacity building, and regional cooperation. In conclusion, we underscore that non-traditional maritime threats in the IOR present escalating challenges that necessitate a holistic, well-coordinated response to safeguard Pakistan's national interests at sea.

Literature Review:

Maritime security in the Indian Ocean has been the subject of increasing scholarly attention. Early works emphasized state navies and strategic competition, but more recent literature highlights non-traditional threats (NTS), including terrorism, piracy, crime, resource exploitation, and

environmental issues (Michel & Sticklor, 2012). Buzan and others have expanded security studies to include these NTS challenges, sometimes referred to as the “human security” approach. Regional analysts have observed that non-traditional security challenges in the maritime domain encompass a range of issues, from terrorism and piracy to illicit trafficking and IUU fishing (Chauhan, 2023). For instance, the Indian National Maritime Foundation (NMF) defines maritime security as “freedom from threats arising ‘in,’ ‘from’ or ‘through’ the sea,” encompassing both traditional (naval) and non-traditional threats such as crime, natural disasters, pollution, and climate impacts. Indian researchers have emphasized that the IOR faces threats such as terrorism, narcotics trafficking, smuggling, piracy, and environmental risks, all of which have the potential to destabilize the region (Ghosh, 2020). China’s growing presence, including its Belt and Road maritime initiatives, has also drawn attention to security concerns that extend beyond naval considerations, partly due to China’s own interests in areas such as sea lane protection, which redefine the regional security context. Within the Pakistani context, academic and policy-related literature is quite young but increasing. Pakistani analysts have noted that post-1971 maritime policy was previously neglected, but factors such as CPEC have underscored the increasing importance of the maritime domain. Works such as Zafar et al. (2024) have observed that Pakistan’s earlier focus on traditional naval threats has shifted to address piracy, smuggling, illegal fishing, and environmental degradation as primary concerns. Other scholars have pointed out that Pakistan’s participation in Indian Ocean cooperative bodies like IORA and IONS reflects its acknowledgment of the need for multilateral approaches to maritime security. However, studies have also cautioned about “sea-blindness” and inadequate coordination. For example, a Pakistani security analyst has lamented the ill-defined inter-agency roles in maritime policy (Mohsin, 2024). Overall, the literature suggests a consensus on the necessity of a holistic approach that integrates economic and security dimensions, and it calls for updated strategies and enhanced capacity. This review indicates a robust foundation in global NTS theory and regional context, but it also reveals notable gaps in research on Pakistan’s response. While many sources emphasize the array of threats, detailed analysis of their specific impact on Pakistan and the corresponding responses is limited. This paper aims to address this gap by synthesizing academic insights with recent data and case evidence.

Theoretical Framework:

Our analysis is informed by non-traditional security (NTS) theory and the concept of comprehensive security. NTS theory, inspired by the works of scholars like Buzan et al. (1998), broadens the concept of security beyond interstate conflict to include threats from non-state actors and human and environmental vulnerabilities. In the maritime context, this perspective has been applied to issues such as piracy, terrorism at sea, trafficking, and ecological hazards, recognizing their potential to be as destabilizing as conventional threats. We also draw on the Regional Security Complex perspective, which views the IOR as a distinct security region where various threats, such as piracy corridors and monsoon-driven disasters, create interconnectedness among countries. Within this framework, states like Pakistan and regional organizations such as IORA and ASEAN maritime security networks engage in cooperative measures, even in the absence of formal alliances. A securitization lens is employed to analyze how Pakistan and other states frame these issues as security concerns, thereby prompting extraordinary responses. Furthermore, the human security paradigm is pertinent, as many maritime threats, including smuggling, IUU fishing, and environmental damage, have direct implications for human populations and development. In Pakistan, a threat to coastal livelihoods such as IUU fishing can undermine food security, illicit

drug routes can finance insurgencies, and climate-driven sea-level rise threatens urban centers. Consequently, our framework integrates both state-centric and human-centric perspectives. We assume that states prioritize threats that are perceived to endanger national stability or economic well-being. Empirically, we examine how Pakistani policymakers and institutions have addressed each threat, whether they have “securitized” it through the deployment of naval forces or the enactment of specific laws, or whether they have treated it as a lower priority. We also consider theories of inter-agency and international cooperation. For example, institutionalism suggests that Pakistan’s engagement in multilateral maritime initiatives is contingent on its perception of mutual benefit.

Research Methodology:

This study employs a predominantly qualitative methodology, combining a literature review, policy analysis, and case studies. Data were collected from academic journals, official statements, think-tank reports (e.g., IISS, SIPRI, RAND), government documents, news media, and publications on maritime law. . The case study approach is used to provide illustrative examples, focusing on the Gwadar Port incident (March 2024), Somali piracy incidents (2010s and recent), and the 2023–24 Red Sea crisis. These cases were selected based on their relevance to Pakistan’s security concerns. The analysis is descriptive-analytical rather than statistical, aiming to synthesize and interpret the complex interplay of multiple threat vectors. Where appropriate, charts and maps are included to clarify patterns. The research is based on published sources available up to 2025. This methodology combines secondary qualitative analysis with systematic referencing to ensure rigor and currency.

Strategic Context of the Indian Ocean Region:

The Indian Ocean Region (IOR) is of paramount strategic importance for Pakistan. This region facilitates approximately 80% of global seaborne oil trade and about half of the world’s container shipping. Key chokepoints such as the Strait of Hormuz, the Gulf of Aden (Bab el-Mandeb), and the Strait of Malacca concentrate this traffic (Rodrigue, Notteboom, & Pallis, 2022). As these authors note, “Trans-Indian Ocean traffic is predominantly intermediary between Pacific Asia and Europe,” flowing through Malacca and Bab el-Mandeb (Rodrigue, Notteboom, & Pallis, 2022). Consequently, disruptions anywhere from the South China Sea to the Middle East can significantly affect Pakistan’s trade, including oil imports from the Persian Gulf and Chinese exports through Port Qasim or Gwadar. Politically, the IOR is increasingly regarded as the southern extension of the Indo-Pacific. Extra-regional powers, including the U.S., China, Japan, and the EU, have expanded their naval presence through exercises, bases, and patrols. China’s “Maritime Silk Road” initiative has led to substantial investments in regional ports, notably Gwadar in Pakistan and Hambantota in Sri Lanka, which are perceived by India and others as strategic maneuvers (Ghosh, 2020). A notable consequence of this geopolitical competition is the increased emphasis on the security of sea lanes. Pakistan actively participates in multilateral patrols, such as those conducted by Combined Task Force 150/151 under the Combined Maritime Forces (CMF), to enhance security in the Arabian Sea. The CMF, comprising 46 nations, operates “to promote security, stability, and prosperity across ~3.2 million sq miles” of the Arabian Sea and the Indian Ocean (United States Naval Institute, n.d.). These frameworks underscore the global significance of the IOR.

Regionally, South Asia is a dominant force within the IOR. India’s growing naval capabilities, including its “SAGAR” policy, and Pakistan’s maritime aspirations are interconnected. Both

nations have territorial disputes, such as those in the Arabian Sea and the Bay of Bengal, and shared security interests, including counterterrorism and the safeguarding of ports. Smaller regional powers, including Bangladesh, Sri Lanka, and the Maldives, rely on India's cooperation to patrol their territorial waters. The balance of power in the region is changing with China as an extra-regional actor, the presence of its naval base in Djibouti and exercises with Pakistan. The situation is also aggravated with the growing influence of climate change and environmental stress. The IOR is heating up quicker than other oceans, which endangers nearby people, and the quick industrialization is leading to a high burden on the marine life by polluting the ocean with waste, including sewage discharge and plastic waste. Summarily, the IOR is a strategic environment, which is defined by thick economic interdependencies and geo-strategic rivalries. All the non-traditional threats that interfere with navigation, trade, or maritime resources such as piracy, terrorism, or environmental catastrophes can produce significant ripple effects, which could have a significant effect on the security and economy of Pakistan. The 1,000km coastline of Pakistan along such strategic waters makes the country a central stakeholder as well as a probable victim of maritime instability.

Detailed Analysis of Non-Traditional Maritime Threats:

Piracy and Armed Robbery:

- **Somali Piracy Resurgence:** Somali-based piracy, which peaked between 2005 and 2012, represented the most severe maritime crime in the IOR, with hundreds of attacks on cargo and tanker vessels. In 2011, Somali pirates launched 237 attacks and held numerous hostages, resulting in global economic losses of approximately \$7 billion (including ransom payments) (Reuters, 2024). This crisis prompted intervention by NATO, the EU, and multinational task forces such as CTF-151 and EUNAVFOR Atalanta, which conducted patrols in the Gulf of Aden and the Arabian Sea. These efforts largely suppressed Somali piracy by the mid-2010s. However, recent years have seen a resurgence of these activities. In late 2023 and early 2024, pirates exploited a temporary reduction in vigilance due to the global focus on the Ukraine war and unrest in the Red Sea, leading to more than 20 attempted hijackings in late 2023 (Reuters, 2024). In one instance, the India-flagged vessel Ruen, registered in Malta, was held off Puntland for several weeks before being freed. Regional navies have remained vigilant. For example, on April 5, 2025, the Pakistan Navy, with its ship PNS Aslat, assumed command of CTF-151 in the Gulf of Aden and conducted counter-piracy patrols off Somalia. The Pakistani statement emphasized a “firm resolve to combat piracy and armed robbery” to ensure the “free flow of maritime trade.” Piracy poses a multifaceted threat to Pakistan. Although Pakistani ports have not been directly targeted, Pakistani fishing vessels operating off the coast of Somalia have faced dangers in the past. More significantly, the resurgence of piracy elevates shipping costs and insurance premiums for cargoes destined for or originating from Pakistan. As a key player in suppressing this resurgence as the leader of CTF-151, Pakistan has a direct stake in these counter-piracy efforts.
- **Regional Sea Robbery:** Closer to Pakistan's territorial waters, the Pakistan Maritime Security Agency (PMSA) frequently encounters and counters small-scale armed robberies. These opportunistic attacks, targeting fishing boats and small tankers, typically occur during the monsoon season and at night. The literature indicates that this form of piracy is a significant problem for Pakistan, with pirates rapidly approaching the country's coastline

and causing considerable difficulties for local fishermen. As of 2024, such incidents continue to be a concern, particularly given Pakistan's extensive and sparsely patrolled coastline.

Maritime Terrorism:

- **Sea- vs. Land-Based Terrorism:** Maritime routes have long been identified as potential targets for jihadist terrorism. The 2002 attack on the MV Limburg, in which Al-Qaeda bombed a French oil tanker in the Gulf of Aden, demonstrated the capacity of terrorists to disrupt maritime commerce (The Maritime Executive, 2014). In South Asia, the 2008 Mumbai terror attacks starkly illustrated the vulnerability of maritime borders when Lashkar-e-Taiba gunmen hijacked a Pakistani fishing boat, the Kuber, and an Indian trawler to infiltrate Mumbai (D'Souza, 2025). This attack underscored the ease with which porous maritime borders can be exploited to strike critical infrastructure. Pakistan remains acutely aware of this threat. For example, in 2024, the Pakistani navy successfully repelled a major armed assault on the Gwadar Port complex, eliminating all eight assailants after an intense two-hour gunfight. This incident highlights the reality of the maritime terror threat for Pakistan, particularly concerning strategic assets like Gwadar, a central component of CPEC and a potential target for anti-state militants.
- **Oil Platforms and Coastal Targets:** Pakistan's exclusive economic zone (EEZ) contains vital offshore oil platforms and undersea pipelines that supply Iranian oil through Karachi. These installations are vulnerable to attacks by terrorists or saboteurs. Although there have been no major sea-borne terrorist attacks in Pakistani waters, security analysts have warned of potential scenarios, such as militants using speedboats or small submarines to plant explosives. This risk is further compounded by insecurity in the Iran-Pakistan border that enables movement of smugglers and terrorists along the Makran coast. The literature highlights the necessity of new legal frameworks that will specifically deal with maritime terrorism and counter-terrorist actions in the maritime environment since the current laws in Pakistan mainly deal with the safety of the naval forces.

Smuggling and Illicit Trafficking:

- **Narcotics Trafficking:** The Arabian Sea is a major conduit for the trafficking of Afghan opiates to global markets. Pakistan's Makran coast has long been used by "dhows" carrying substantial quantities of heroin from Afghanistan and Iran, destined for East Africa and other regions. Intelligence reports indicate that heroin shipments originating from Taliban-controlled Afghanistan transit through Pakistani waters, providing a significant source of funding for insurgents. Investigations by Combined Maritime Forces have revealed that large heroin caches, identified through isotopic analysis, often originate in Afghanistan. The United Nations Office on Drugs and Crime (UNODC) has documented the smuggling of heroin, hashish, and other drugs on small Pakistani boats. This trafficking has dual detrimental effects: it undermines law enforcement efforts in Pakistan and provides financial support to regional militancy. The extensive coastline of Pakistan and its limited patrol capabilities are exploited by high-volume drug smugglers.
- **Fuel and Commodity Smuggling:** A significant non-traditional threat to Pakistan's economy is the smuggling of subsidized goods. For decades, substantial quantities of Iranian diesel, petrol, and sugar have been illegally transported into Pakistan through coastal towns. Despite ongoing crackdowns, reports from 2025 indicate a resurgence in the illegal trade of Iranian fuel, resulting in significant losses to the national treasury (The

Express Tribune, 2025). Similarly, the smuggling of wheat, sugar, cigarettes, and other commodities via small boats remains prevalent. The government has responded by forming a “seafront task force” and implementing border barriers and digital tracking systems to curb this activity. However, the persistence of smuggling operations can be attributed to the substantial price differentials and the challenges faced by customs officials in effectively patrolling the extensive 1,000-km coastline. Analysts have warned that smugglers exploit the Arabian Sea to traffic a wide range of illicit goods, including heroin, hashish, methamphetamine, arms, ammunition, and high-value commercial goods. Pakistan Customs, which leads the anti-smuggling efforts, faces significant limitations and relies heavily on the support of the Pakistan Navy, PMSA, and Pakistan Coast Guards (Dawn, 2024). These constraints create significant vulnerabilities that enable the continued flow of illicit trade.

- **Arms and People Trafficking:** The illicit trafficking of arms by sea is another critical concern. Small boats, including dhows, are used to transport weapons from Iran to militants in Pakistan’s Balochistan province and to insurgents in other regions. Although less frequently documented, this network is closely linked to drug smuggling routes. Human trafficking and the transport of migrants, such as Rohingya or African migrants seeking to reach Europe, also occur in the IOR. Pakistan has also said it has intercepted boats loaded with smuggled migrants and arrested people participating in human trafficking. Although such activities cannot be compared with the economic effects of narcotics smuggling, they pose serious security and humanitarian issues, and also burden the maritime law enforcement capacity of Pakistan.
- **Illegal, Unreported, and Unregulated (IUU) Fishing:** IUU fishing by foreign boats is a great threat to the Pakistani resources and the national security. Fish stocks are abundant in the Pakistani waters, but the national fishing fleets do not usually compete favorably with bigger trawlers outside the country. It has been reported that the territories of neighboring countries, especially India and Iran, often invade the exclusive economic zone (EEZ) of Pakistan (ICSF, 2024). The International Collective in Support of Fishworkers (ICSF) has made it a point to note that the intrusion of Indian ships into Pakistani waters is costing the latter a huge amount of money as a result of it. Besides these economic losses, which cost billions of lost revenue, IUU fishing impairs marine life and endangers the livelihoods of the Pakistani fishing community. Illegal fishing is usually destructive and does not follow the rules of conservation. They can as well increase maritime tension with other nations.

Pakistan does not have much capability to control its maritime resources. Periodic patrols are carried out by the Pakistan Maritime Security Agency (PMSA) and the Navy, which are, however, not well equipped to police the entire 240,000-square-kilometer EEZ. Technological limitations are significant, with few coastal radars, a lack of comprehensive vessel tracking systems, and limited capacity to inspect distant fishing grounds. As noted by ICSF (2024), even basic regulatory functions such as licensing and boat registration are poorly implemented. This governance deficit allows IUU fishing to proceed largely unchecked.

Maritime Cyber Threats:

Modern shipping and port infrastructure rely heavily on digital systems, making them susceptible to cyber intrusions. Critical systems, including AIS navigation transponders, shipboard networks, and port terminals, are vulnerable to hacking and spoofing. Trend Micro and other cybersecurity

firms have identified several categories of maritime cyber threats, including AIS spoofing, hijacking, and disruptions to system availability (Akram, 2023). In spoofing attacks, false location data can be used to misdirect autonomous ships or conceal illicit activities. Hijacking attacks can enable the illicit control of cargo routes or the demanding of ransom. Denial-of-service attacks on port control centers can disrupt port operations.

Pakistan has already experienced cyber-attacks on its maritime infrastructure. In 2018, a major cyber-attack on the state-owned MSTC shipping agency resulted in data loss and operational disruptions. The Pakistan National Shipping Corporation (PNSC) was forced to close its operations in 2020 as well following a cyber intrusion. At the beginning of 2021, there was also a hacker attack on the systems of the Karachi Port Trust, as a result of which confidential documents were leaked. Such attacks point to the susceptibility of Pakistan maritime trade to cyber-attacks. The impacts of the same may include delays in handling of cargo, safety risks due to failed navigational aids, and extreme violation of confidentiality in port security. Cyber-attacks on maritime systems have the potential to lead to severe disruption in the flow of people and goods as one observer has pointed out. With the growing complexity of the cyber threat world over, there is a need to ensure that the navy and the port authorities in Pakistan improve their cybersecurity mechanisms, as per the international standards, including guidelines on maritime cyber security published by the IMO.

Environmental and Climate Risks

In the maritime environment, environmental change is a serious long-term strategic threat. According to meteorological experts, climate change has been described as the biggest threat in the Indian Ocean. The area is gaining heat at a higher pace than any other ocean and this has resulted in more vigorous cyclones, changes in ocean flows, and increased sea levels. The coastal regions of Pakistan such as the Karachi and the Indus Delta are especially susceptible to the impact of the sea-level rise. Local sea-level increases of just 2–3 mm per year, combined with subsidence, threaten major ports and urban areas. Extreme weather events, such as cyclones in Sindh and Balochistan, have the potential to cause severe damage to port facilities and disrupt shipping operations. Pollution is another growing concern. Industrial and sewage effluents, amounting to trillions of liters annually, are discharged into the Arabian Sea, resulting in the formation of marine dead zones. Coastal mangroves and wetlands, which provide natural protection against storms, are being destroyed for the development of shrimp farms and real estate. Plastic and chemical contamination also pose significant risks to fisheries and human health. Marine pollution is increasingly being recognized as a security issue by states in the IOR. The UNODC has reported that pollution crimes including illegal dumping are a new risk to coastal communities in the region. In the case of Pakistan, the threats revolve around oil spillage by tankers and ships, and some possible sabotage of the pipelines which are all considerably dangerous to the environment. The net impact of these environmental hazards can blow up the hopes of Pakistan to establish a strong blue economy. The extinction of fish resources, coastal erosion, and the growing number of extreme weather disasters may result in the displacement of millions of people and unemployment. Climate change is also a multiplier of threats and increases the vulnerabilities. To give an example, environmental stress can increase smuggling by driving coastal populations to alternative livelihoods or establish new smuggling channels when strong currents change the deposition of sediments and shoreline patterns. Analysts claim that the maritime approach of Pakistan needs to clearly consider climate adaptation solutions, including the creation of robust ports and the regeneration of mangroves, and deploy pollution prevention plans to alleviate these high-impact risks.

Implications for Pakistan: Economy, Security, and Governance:

The intersection of these non-traditional threats brings complex issues to Pakistan, and they have far-reaching consequences on the economy, security, and governance of the country. **Economic Impacts:** Economic impacts of a disruption at sea are direct. The Red Sea crisis, which is marked by Houthi assaults on business vessels, is used to demonstrate how quickly the worldwide trade can be influenced. The shipping insurance companies have stated that there will be a loss in global seaborne trade by 1.3 percent by the end of 2023 because ships have to follow longer routes. Many container lines, including Maersk and CMA-CGM, have rerouted their vessels around Africa and imposed additional surcharges, driving up costs for Pakistan's imports, such as oil and manufactured goods, and exports, including textiles and food products. Each diverted voyage around the Cape of Good Hope adds approximately two weeks to the journey and increases fuel costs by millions of dollars. Should such disruptions persist or escalate, as in the event of a prolonged closure of the Bab el-Mandeb strait, Pakistan's trade-dependent economy would face substantial strain. IUU fishing further compounds economic losses, depriving Pakistan of significant revenue from its \$200 million seafood export industry. Experts warn that the country could lose billions in potential foreign exchange earnings. The smuggling of fuel, sugar, cigarettes, and other commodities also deprives the state of essential customs revenue, contributing to the growth of a parallel "black economy." Additionally, the recurring smuggling of narcotics places a burden on public health and social spending, despite generating illicit income for organized crime networks. To conclude, lawlessness at sea undermines the economic potential of the maritime sector of Pakistan (fisheries, port services, and shipbuilding). It is therefore important that Pakistan has open and safe sea lanes in order to boost its GDP.

Security Burden: Dealing with these threats impose a huge burden on the resources of the Pakistan Navy and other agencies. The Navy must patrol the Arabian Sea to respond to piracy, as has been observed in the case of PNS Aslat being deployed under CTF-151, and yet be ready to respond to contingencies with India and Afghanistan. This is because the paramilitary forces such as the PMSA and Coast Guards share the responsibility of patrolling but are limited in manpower. Intelligence collection and interdiction activities are required to counter smuggling and these activities are way beyond the territorial waters of Pakistan. In addition, the rising level of cyber threats requires additional skills and resources in the Navy and the shipping community in general. The military has reacted to these threats by stepping up patrols along the coast and ordering more patrol boats. However, force planners express concern that piracy-related incidents are rapidly approaching Pakistan's coast. The overextension of resources poses a significant risk, as it is not feasible for Pakistan to effectively defend its entire 1,000-km coastline at all times. Terrorist attacks, such as the one at Gwadar Port, highlight the need for continuous security measures, even around high-value projects. The maintenance of adequate situational awareness through the use of drones and satellite-based AIS monitoring is also a costly undertaking. Consequently, an increasing proportion of Pakistan's defense budget may need to be allocated to addressing non-traditional security threats, potentially diverting resources from other critical defense needs.

Governance and Institutional Challenges: Pakistan's existing legal and institutional framework is not adequately equipped to manage the complexities of these non-traditional threats. For example, the country lacks an independent coast guard, with the Pakistan Coast Guards primarily operating onshore, and maritime responsibilities are divided between the Navy and the PMSA.

The National Maritime Policy of 2002, which is still in effect, does not fully address contemporary threats. Analyses indicate that it lacks consideration for current maritime security concerns. Moreover, Pakistani bureaucracy has been described as sea-blind and has a tendency to focus on inland or landward issues and has failed to invest in its maritime infrastructure and defence. There is a lack of a national authority in maritime security, i.e. a special Ministry of the Sea, which leads to gaps in coordination. Due to overlapping roles between the agencies like Customs, the Federal Board of Revenue (FBR), PMSA, the Navy and provincial authorities, the result is a fragmented and ad hoc response to operations.

Legally, although Pakistan has passed the legislation to oppose terrorism and organized crime, the application of the same at the sea level is hampered by the jurisdictional uncertainties. There is also no clear division of labor when it comes to the maritime border control. According to the reports of Dawn (2024), it is stressed that Customs is highly limited and mainly depends on the Navy and Coast Guards. There are poor coordination between different agencies such as Customs, FBR, PMSA, the Navy, and the provincial governments which is typical of a sea blindness issue. In addition, little has been said publicly about maritime threats and environmental regulations, especially pollution and fisheries, are not well enforced in the high seas. Pakistan has not also ratified or integrated various international maritime agreements such as the Port State Measures Agreement as well as some conventions of the International Maritime Organization (IMO), which may help in the fight against IUU fishing and marine pollution.

In short, the consequences to Pakistan are tremendous. The threats can escalate trade expenses and disrupt coastal businesses, overstretch the military capabilities, and reveal policy and coordination shortcomings. To deal with these complex pressures, it is critical that maritime security is raised to a national priority, and a whole-of-government approach is required.

Case Studies:

- **Gwadar Port (Pakistan):** The vulnerability of strategic projects to non-traditional threat is evident through the deepwater port at Gwadar, which is a centrepiece of the \$62 billion China-Pakistan Economic Corridor. On March 2024, the Gwadar Port Authority complex was attacked with guns by eight militants. The attack was repelled by the Pakistani security forces but a few soldiers were injured. This event highlights how the security in Gwadar is part of the frontline and militants, such as Baloch separatists and jihadi groups, may also attack CPEC infrastructure. This risk has been recognized by both the Chinese and Pakistani planners and hence the deployment of large military and police forces around Gwadar on a permanent basis. Along with direct attacks, there are other threats to Gwadar, including the destruction of the harbor environment due to IUU fishing activity, a rise in pollution around the harbor as a result of tanker traffic, and the threat of cyber-attacks on port infrastructure. The difficulties that have been experienced at Gwadar can be used to show that the non-traditional threats are not hypothetical but have come to reality and a swift and strong action is required.
- **Somali Piracy (International):** Somali piracy is mostly under control and its revival is a reminder of the still existing weaknesses in maritime security and its possible effects on Pakistan. At one point, between 2008-2012 when Somali piracy was at its peak, pirates had taken the world trading hostage with ships of many IOR countries falling victim. Early 2024, pirates seized or attempted to seize a number of ships, including the Malta-flagged Ruen, which was released by the Indian Navy off Somalia in May 2024. The vessel of the

Ruen was not Pakistani, but thousands of Pakistani merchant vessels pass through these waters every year. These incidents have highlighted the importance of naval preparedness to the Pakistani nation and it is due to this reason that it has taken the lead in the CTF-151 on several occasions and is also actively involved in intelligence exchange with other nations. The resurgence of piracy poses immediate threats, potentially necessitating the rerouting of Pakistan-bound ships or additional escort protection, both of which would increase freight costs. More broadly, it highlights the fact that Pakistan's defense strategy cannot rely solely on its geographic location. International waters, such as those near the Horn of Africa, can become hotspots for crime, requiring active and sustained patrolling.

- **Red Sea and Bab el-Mandeb (Global):** The Red Sea, while geographically separate from the Indian Ocean, is connected to it and significantly influences Pakistan's trade routes, particularly those involving the Suez Canal. In late 2023, Houthi militia in Yemen began attacking commercial vessels in the Red Sea and the Gulf of Aden in response to conflicts in the Middle East. These attacks have prompted a major international response. Pakistan's primary concerns are the potential disruption of its oil imports from the Gulf, which pass through the Suez Canal, and the shipment of CPEC goods, which largely transit through the Red Sea chokepoint at Bab el-Mandeb. These disruptions have been substantial, with at least 55 large vessels rerouting around the Cape of Good Hope, adding approximately two weeks to each journey. The volume of global trade through the Suez Canal decreased noticeably, falling by 1.3% by December 2023. Pakistan has not deployed forces to the Red Sea but has expressed support for collective security initiatives. The Pakistani foreign office welcomed the US-led "Operation Prosperity Guardian," which includes naval forces from Western and some Arab states to protect shipping in the Red Sea (Guardian, 2023). The Red Sea crisis illustrates how instability in distant regions can have far-reaching implications for Pakistan's interests, underscoring the necessity for a maritime strategy that accounts for the impact of conflicts beyond the immediate region.

These case studies illustrate the tangible effects of non-traditional maritime threats on Pakistan's economy and security. They highlight the interconnectedness of the IOR, where threats originating in distant locations such as Somalia or Yemen can undermine Pakistan's growth and stability.

Policy Gaps:

Although Pakistan recognizes its economic potential in the maritime sector, such as fisheries, offshore energy, and shipping, its policy framework has serious gaps. According to the analyses of the National Maritime Policy (NMP) of 2002, it was not taken into consideration in regard to the contemporary maritime security (Mohsin, 2024). The NMP mainly concentrated on the economic goals of a peacetime nature in connection to ports and fisheries and it was not clear on how different ministries, including the Navy and the Ministry of Commerce, carried out their roles and responsibilities. Pakistani bureaucracy is also noted to have a problem of sea-blindness which is an inability to focus on maritime infrastructure and sea defense and instead concentrate on land-based problems. Lack of a central national authority over maritime security, e.g. a designated Ministry of the Sea, results in the division of responsibilities and coordination breakdowns. As an example, the Customs, FBR, PMSA, the Navy, and provincial governments are agencies with overlapping responsibilities, which makes the response to their operations ad hoc and disjointed. The legal system of Pakistan must also be revised to be in line with the international maritime provisions. Offenses like piracy and maritime terrorism are not entirely in line with the UN

conventions and local legislation in their definitions. Professionals have called out on the necessity of contextual laws to fight maritime crimes, such as explicit legislation against piracy and terrorism on the seas. There is also a lack of institutional capacity. There is a shortage of surveillance resources such as patrol vessels, radars and satellite monitoring systems. There is little training, and not many officers are given specialized training in maritime law enforcement or cyber-defense. Pakistan is selective in multilateral anti-crime regimes. As an illustration, it has not yet entirely put into application the initiatives of the Indian Ocean Rim Association (IORA) on illegal fishing, and the amount of cooperation with India on IUU fishing is tiny because of political mistrust. Last but not least, environmental and blue-economy planning in Pakistan is still novice. The nation has no overall plan on creating marine protected areas, carrying out climate adaptation actions on its shores and managing pollution. Sindh and northern Balochistan are very prone to climate-related disasters in the Indus Delta. To conclude, the Pakistani policy environment is characterized by the lack of legal frameworks, institutional frameworks and political priorities that impede the capacity of this country to respond to the threats outlined above.

Strategic Recommendations:

To solve these problems, Pakistan ought to implement a complex strategy of actions:

- **Come Up with a Coordinated Maritime Security Plan:** Based on studies like that of the MARSEC Centre (Mohsin, 2024), Pakistan should have a cohesive national plan that links its military, police, economic, and environmental goals. Such a whole-of-government approach must clearly outline the different roles and responsibilities of different agencies, including the creation of a separate Coast Guard under civilian administration to carry out day-to-day law enforcement activities with more serious defense operations being left to the Navy. Strategy must also be in line with the international frameworks such as the United Nations Convention on the Law of the Sea (UNCLOS) and IMO conventions. It is to be made with consultation of all the concerned ministries that include Ministries of Defence, Interior, Maritime Affairs, and Environment.
- **Develop Institutional Capacity:** Pakistan is supposed to increase and modernize the maritime agencies. This will involve the creation of a special Pakistan Coast Guard, a civil armed force, controlled by civilians, to complement the Navy and PMSA. Surveillance infrastructure is essential, such as coastal chains of radar, ship-borne and UAV drones and satellite-based AIS. The establishment of a real-time Maritime Domain Awareness center would significantly enhance operational effectiveness. Additionally, there is a need for enhanced training programs in maritime law enforcement, cyber-security, and disaster response. For example, addressing specialized crimes such as piracy and drug smuggling requires customs offices equipped with marine patrol craft and forensic laboratories for narcotics analysis.
- **Enhance Interagency Coordination:** Formalizing protocols for joint operations is essential. This can be achieved through the establishment of joint maritime operations centers or task forces with representatives from Customs, FBR, the Navy, Coast Guard, and intelligence agencies. These mechanisms would facilitate rapid and unified responses to incidents such as smuggling or terrorism. Pakistan can draw on models such as Kenya's maritime command center or the U.S. Coast Guard's integrated operational structure. Improved data-sharing, including the exchange of passenger and crew manifests and container data at ports, is also necessary to identify and address suspicious activities.

- **Engage in Regional and International Cooperation:** Pakistan should actively participate in forums such as the Indian Ocean Naval Symposium (IONS), IORA, and UN bodies to enhance coordination on maritime security. Proposals for joint patrols with neighboring countries, such as the cooperative arrangements between Iran and Oman in the Gulf of Oman, and the sharing of best practices on countering piracy and IUU fishing, should be pursued. Multinational exercises, such as Pakistan's hosting of the Sea Guardians series, can help build trust and interoperability. Regarding Red Sea security, Pakistan could send naval observers to the new international coalition or express explicit support for its objectives (Guardian, 2023). Participation in regional information-sharing centers, such as the Regional Maritime Information Fusion Center for the IOR, would also be beneficial.
- **Legal and Regulatory Reforms:** Pakistan needs to update its maritime laws to criminalize piracy, terrorism, and trafficking at sea in accordance with UNCLOS and UN resolutions. The ratification and implementation of the Port State Measures Agreement (PSMA) and the FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA) are crucial steps in combating IUU fishing. Stricter penalties for fuel smuggling, targeting criminal syndicates rather than just imposing fines on individual smugglers, are also necessary. Also, the creation of marine conservation areas to protect fisheries and implementation of environmental impact assessments of port development projects should be emphasized.
- **Blue Economy and Environmental Resilience:** Given that economic growth can be used as a barrier to insecurity, Pakistan ought to invest in the development of ports, shipyards and tourism to develop local jobs that make people less incentivized to turn to smuggling. The growth of legal marine exports, which is backed by strong supply chains, can reduce the attractiveness of the black market operations. Concurrently, coastal protection, including the redevelopment of mangroves in the Indus Delta, and the building of sea walls around key port infrastructure, and enhancing wastewater treatment in Karachi, is necessary to alleviate the effects of an increase in sea levels. These are important measures in order to increase resilience to the climate and pollution threats mentioned above.
- **Enhance Cybersecurity:** Pakistan should develop an elaborate maritime cyber strategy with the civilian port authorities and shipping companies. As part of this strategy, it would be required to develop cyber-security plans of all the ships and ports, according to the IMO guidelines. Audits and drills should also be done periodically to keep them ready and in compliance. As an example, the Karachi Port Trust can apply intrusion detection systems to its networks and train the staff to identify and act on phishing attempts. The Navy must also create specialized cyber-defense teams that will assist critical civilian infrastructure.
- **Public Awareness and Industry Engagement:** The government should actively involve the private sector, including shipping lines, insurers, and fishermen's associations, in efforts to mitigate maritime threats. This includes launching awareness campaigns on issues such as AIS spoofing and phishing within the maritime sector. Collaboration with insurance companies to share data on high-risk areas and the involvement of local fishermen in IUU monitoring through community-based surveillance programs, similar to those in some Pacific states, can enhance monitoring and enforcement capabilities.

In prioritizing these recommendations, Pakistan should begin with initiatives that offer immediate returns, such as improving inter-agency coordination and implementing legal reforms, while also planning for longer-term projects, including the establishment of a dedicated coast guard and the

implementation of major technological upgrades. Given the substantial Chinese investment in CPEC, collaboration with China on related security matters, such as the establishment of a joint maritime task force for Gwadar, may also prove productive.

Conclusion:

Non-traditional maritime threats in the Indian Ocean – from pirates to polluters pose a rising challenge to Pakistan’s national security. Our deep-dive analysis shows that these threats are not hypothetical. Incidents like the Gwadar attack, renewed Somali hijackings, and Red Sea trade diversions have concretely affected Pakistan’s strategic environment. Economically, disruptions raise trade costs and deprive coastal communities of resources. Security-wise, Pakistan’s navy and agencies must now counter a broad spectrum of non-state dangers on the high seas. Institutionally, gaps in policy and coordination leave vulnerabilities.

The literature and cases underscore a simple truth: freedom and security of the seas are integral to Pakistan’s prosperity and stability. Pakistani leaders have begun to acknowledge this (e.g., initiating patrols in 2018 and drafting a maritime doctrine), but the analysis here suggests much more is needed. Fully securitizing the maritime domain treating it with the same priority as land and air domains will require sustained political will. We have outlined strategic steps for strengthening law enforcement, legal regimes, and international cooperation. By acting decisively, Pakistan can transform these challenges into opportunities: developing a resilient blue economy, protecting its coastal people, and contributing to regional maritime security.

In a region where the oceans define wealth and power, failure to address non-traditional threats could isolate Pakistan and imperil its trade and energy lifelines. Conversely, success in maritime security would bolster Pakistan’s global standing and economic growth. The IOR is changing rapidly piracy is shifting, technology is advancing, climate is warming – and Pakistan must adapt. In the end, the safes.

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