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Maritime Terrorism and Border Threats: Enhancing India's Offshore and Shoreline Protections

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Abstract:

India's vast shoreline, offshore assets, economic interests and blue economy must all be protected and this requires credible maritime security. Being an important entity for international trade, the Indian Ocean is becoming more and more exposed to security risks like smuggling, terrorism, and piracy. Due to these threats to India's offshore oil and gas infrastructure, key shipping routes, and Exclusive Economic Zone (EEZ), improved maritime and coastal security is crucial for maintaining regional and national stability. In this article, the dangers of maritime terrorism and other border security issues are discussed in relation to the evolving threats to India's maritime borders. It analyses India's plans to improve shoreline and offshore security through enforcing maritime law, interdisciplinary coordination and improved maritime capabilities. India's involvement in regional cooperation initiatives, international security frameworks, and strategic partnerships aimed at mitigating these risks are also looked at in the article. In combating maritime threats, particular attention is paid to the function of the Indian Coast Guard, Indian Navy, and specialist anti-terrorism troops. The article analyses India's efforts to mitigate these risks through case studies of regional maritime terrorist occurrences. The primary question for which this article attempts answers is**:** How can India enhance its maritime security measures to effectively address the evolving threats of maritime terrorism, piracy, and other border security challenges to its offshore assets, shipping routes, and Exclusive Economic Zone (EEZ)?

Keywords: Maritime Terrorism, Border Threats, Offshore, Shoreline, EEZ, India

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INTRODUCTION:

India is extremely exposed to border threats and maritime terrorism because of its vast as per the latest data released by the Survey of India (SoI), the new length of India's coastline is 11,098.81 km, including 3,228.30 km of island territories and 7,870.51 km of mainland coastline. From increasingly sophisticated types of terrorism and state-sponsored incursions to more conventional threats like piracy and smuggling, the country's maritime security environment is complicated. A clear reminder of the tragic consequences of maritime vulnerabilities was provided by the 2008 Mumbai terror attacks, which had their origins from the sea. The need for a strong and comprehensive marine security system was highlighted by this tragedy. India proximity to geo-politically unstable areas, such as the Arabian Sea, which has developed into a hub for illegal activity and piracy, further complicates its maritime domain. The potential impact of any successful attack is increased by the existence of vital maritime infrastructure, including ports, oil platforms, and naval stations. Furthermore, there is a recurring problem because of the porous nature of India's maritime boundaries, as well as the participation of the transnational criminal networks and non-state actors. The threat scenario picture is further complicated by the spread of cutting-edge technologies, such as sophisticated communication systems and autonomous underwater vehicles. India has made considerable efforts to strengthen its shoreline and offshore defenses against these threats. Strengthening the powers of the Indian Coast Guard, Indian Navy, and other maritime security organizations is one of these initiatives. Priorities have also been given to the construction of police stations along the shore and the installation of cutting-edge surveillance equipment. Addressing transnational marine risks requires international cooperation, especially with maritime powers and bordering nations. In order to proactively detect and eliminate such threats, India's maritime security strategy also highlights the significance of intelligence collection and information exchange (Zakir Hussain, 2022). Effective maritime domain awareness requires the integration of technology, including satellite imaging, radar systems, and data analytics. India understands the necessity to address the socioeconomic aspects that contribute to marine insecurity in addition to implementing physical security measures (Chatterjee, 2014). This entails tackling problems like unemployment and poverty as well as encouraging sustainable development in coastal areas. Preserving the country's maritime interests and ensuring its security in the face of changing threats requires a proactive, multi-layered strategy in addition to the continuous modernization of India's marine security infrastructure. In addition to funding criminal

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and possibly terrorist activities, illegal trade the flood of drugs feeds domestic drug addiction. Similar to this, smuggling of illicit arms and risks domestic security by giving terrorist organizations and insurgents access to weapons.

Despite being less common in Indian waters than in the Gulf of Aden, piracy is still a possibility, particularly in regions with lax maritime regulations. In addition to disrupting maritime trade and raising insurance premiums, piracy can result in hostage situations that require substantial resources to resolve. Resources and coastal also security are strained by illegal migration, which is fueled by political unrest and economic distress in nearby nations. Additionally, undocumented migrants may act as conduits for terrorist and criminal elements, making border control operations more difficult. Strengthening India's shoreline and offshore defensive calls for a multifaceted strategy. As stated earlier, this involves enhancing maritime domain awareness using cutting-edge surveillance tools like satellite imaging, long-range identification and tracking (LRIT) systems, and coastal radar systems (Farah Robleh Hamza, 2018).

For smooth information exchange and well-coordinated responses, the Indian Navy, Coast Guard, maritime police, and other security agencies must effectively collaborate among agencies. Investing in modern maritime assets, including patrol vessels, aircraft, and unmanned systems, boosts the ability to detect and intercept threats. Strong security measures must be put in place to guard against assaults and unauthorized access to coastal infrastructure, such as ports and harbors. Programs for community involvement and awareness are essential to improving coastal security, Information can be obtained from local fishing communities, who have a deep understanding of coastal waterways. Building capacity to handle transnational marine threats, conducting joint patrols, and exchanging intelligence all depend on international cooperation with maritime powers and surrounding nations (Khurana, 2019). A coordinated and efficient response to changing threats is ensured by creating and putting into implementation comprehensive maritime security policies and regulatory frameworks.

Identifying Border Threats and Maritime Terrorism:

Maritime terrorism represents a complex and evolving security challenge for India, demanding a comprehensive understanding of its definition, scope, and the lessons learned from past incidents.

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Defined broadly, maritime terrorism encompasses the use of the sea as a domain to conduct acts of violence or sabotage aimed at achieving political, ideological, or religious objectives. This includes a wide array of activities, from direct attacks on vessels and offshore installations to the smuggling of weapons, explosives, and personnel. The scope of this threat extends beyond traditional naval warfare, encompassing asymmetric tactics designed to exploit the vulnerabilities of maritime infrastructure and trade routes. The awful impacts of maritime terrorism can be seen by the tragic and striking 26/11 Mumbai assaults. This case illustrates the inherent challenge of protecting large and porous coastlines, since terrorists breached India's coastal fortifications via sea (ACHARYA, 2006).

India's shoreline & offshore monitoring and reaction capabilities underwent a major revamp as a result of this incident, which revealed serious weaknesses in the country's marine security apparatus. The use of marine routes for the trafficking of illegal items, such as arms and drugs, which can aid, abate and terrorist activities and undermine regional security, is another aspect of the threat picture in addition to direct attacks. The threat's complexity is further heightened by the possibility of assaults on vital offshore infrastructure, such as oil and gas platforms. India is especially at risk of maritime terrorism because of its geographic location, which has a vast coastline, several islands, and important marine trade routes. An important route for international trade, the Indian Ocean is increasingly becoming the focus of geopolitical rivalry and unconventional security risks (Lartey, 2024). A multifaceted strategy that includes improved maritime domain awareness, strong surveillance tools, and efficient interagency collaboration is needed to address these issues. A comprehensive approach must also include enhancing intelligence sharing, developing regional collaboration, and fortifying coastal security forces. India's capacity to monitor and secure its maritime borders can be greatly improved by integrating cutting-edge technologies like unmanned aerial vehicles, radar systems, and satellite photography and obtaining community support. Ultimately, maintaining Indias shoreline and offshore protections, and enhancing its maritime security will need a concerted effort from a variety of domestic and foreign players.

A vital route for international trade, the Indian Ocean is becoming more and more susceptible to abuse by transnational criminal groups, pirates, and human traffickers (Dua, 2019). These illegal

operators use sea lanes to carry out illicit activities, including as transporting guns and drugs and aiding in illegal migration, upsetting regional peace and directly endangering coastal populations in India.

Beyond criminal activity, marine security is made more complex by geopolitical conflicts in the Indian Ocean region. Increased security concerns are facilitated by regional rivalries and strategic competition between big powers facilitated by regional rivalries and strategic competition between big powers. Another level of complication is introduced by the existence of non-state players, some of whom are sponsored by states, who use asymmetric warfare strategies like maritime terrorism to cause terror and cause economic harm.

There is also a significant risk of attacks on commerce ships and naval assets, which calls for aggressive defenses and ongoing attention to detail. Improving shoreline and offshore defenses necessitates a multifaceted strategy multifaceted measure, which have been deliberated earlier. Programs for community involvement and awareness can improve coastal security even more by enabling locals to serve as watchful eyes and ears. The creation of a thorough and robust maritime security system requires the integration of technical solutions with conventional enforcement techniques.

India's Marine Security Vulnerabilities:

An array of geographical size, technological limitations, and administrative inefficiencies present a threat to India's marine security. As per the latest data released by the Survey of India (SoI), the new length of India’s coastline is 11,098.81 km, including 3,228.30 km of island territories and 7,870.51 km of mainland coastline, making it challenging to keep vigilant tabs on its maritime borders. Given its scope, it is susceptible to infiltration by smugglers, terrorists, and other non-state actors.

The shortcomings of the surveillance infrastructure are one of the main weaknesses. Despite the use of satellite systems, UAVs, and long-range radars, many offshore and coastal areas are still not adequately monitored. Complex terrains, such as islands, estuaries, and creeks, make effective oversight even more difficult and provide natural cover for illegal activity. In these kinds of

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settings, traditional monitoring techniques frequently prove inadequate, calling for innovative and comprehensive surveillance solutions (Pandey, 2023). The lack of effective collaboration among agencies is a further major problem. The Indian Navy, Coast Guard, Marine Police, Customs, and intelligence services are among the various entities that operate with limited interoperability and overlapping responsibilities. Duplication of effort, delayed answers, and intellectual gaps are the outcomes of this disjointed structure. For smooth data sharing and coordinated action, a unified marine command or improvements to **the National marine Domain Awareness** (NMDA) structure are essential.

Despite recent advancements, there are still deficiencies in infrastructure and technology. Existing patrol fleets are antiquated and insufficient to cover the whole Exclusive Economic Zone (EEZ), and many coastal radar sites are not fully integrated. Also, India has underwater detection equipment, which makes it challenging to spot new dangers like underwater drones and semi-submersibles. Inadequate port inspection and container scanning capabilities expose entrance points to infiltration and smuggling. These risks are made worse by India's loose land boundaries. Inadequately guarded areas allow terrorists and illegal goods to travel, while coastal routes are used for last-stage infiltration. As the threat to coastal areas is increased by land-based logistics and staging assistance, there is an increasing connection between marine threats and land-based insurgency networks. (Bateman, 2015). Security measures in coastal communities are made more complicated by socioeconomic factors. These groups are vulnerable to being taken advantage of by criminal or extremist networks because of their poverty, unemployment, and lack of understanding. Due to ignorance or financial reliance, some populations may unwittingly aid adversaries.

A further dimension of complication is introduced by the increasing involvement of multinational criminal organizations. These organizations take advantage of gaps in marine security to traffic people, weapons, and drugs activities that can be used to finance or cover terrorist actions. An organized national and regional response is needed to combat this menace.

A holistic strategy is necessary to address these issues:

- To ensure real-time maritime domain awareness, improve surveillance capabilities with the use of UAVs, satellite monitoring, and integrated coastal radar.

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- Strengthen port and cargo security with AI-based inspection tools, biometric access controls, and sophisticated scanning systems.
- Strengthen marine law enforcement through capacity building, which includes hiring more people, updating equipment, and providing the Coast Guard, Navy, and Marine Police with specialized training.
- Implement formal procedures for information exchange and cooperative operations amongst all pertinent agencies to foster interagency synergy.
- To mitigate local risks, involve coastal communities in awareness campaigns, surveillance training, and economic growth.
- Encourage regional intelligence sharing, coordinated anti-crime frameworks with neighboring governments, and cooperative marine exercise to strengthen international collaboration (Das, 2021).

Infrastructure modernization, security personnel training, and operational readiness all require sustained policy attention and budgetary investment. Maritime security is a strategic objective for maintaining regional peace and national sovereignty in addition to being a Defence necessity.

India's Existing Framework for Maritime Security:

India requires a strong security framework because of its extensive shoreline and desirable maritime location, which make it susceptible to border threats and maritime terrorism. A multi-layered strategy is used in the country's present marine security architecture, with various important institutions playing crucial roles. As the main maritime force, the Indian Navy is in charge of defending India's maritime interests, which includes projecting strength in the Indian Ocean Region and repelling naval threats. Coastal surveillance, marine law enforcement, search and rescue, and environmental protection are the primary goals of the Indian Coast Guard. Patrolling coastal areas and upholding local laws are the responsibilities of the Marine Police, which are under the jurisdiction of the different state governments. Important intelligence inputs on possible threats and weaknesses are provided by intelligence organizations including the Research and Analysis Wing and the Intelligence Bureau. A complex

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Protecting national interests and maintaining regional stability require strengthening coastline and offshore protections. The existing marine security structure in interaction between national and international marine laws forms the legal foundation for India's maritime security. The Coast Guard Act of 1978, the Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act of 1976, and the Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Act of 1981 are important domestic laws (Sharma, 2009).

These laws establish India's marine borders and give different agencies a legal foundation on which to operate. The United Nations Convention on the Law of the Sea (UNCLOS), which creates the legal foundation for all activity in the oceans and seas, is one of the important international maritime security treaties that India has ratified. Important parts of India's marine security framework are also the conventions of the International marine Organization (IMO), such as the International Ship and Port Facility Security (ISPS) Code and the International Convention for the Safety of Life at Sea (SOLAS). In order to stop illegal activities against marine security, these international accords require port facilities and ships to have security measures in place. (Pandey S. K., 2023). It sustaining a safe and resilient marine realm requires strengthening the legal framework to handle new threats including cyber-attacks on maritime infrastructure and the illegal use of autonomous underwater vehicles (AUVs).India is vulnerable to a variety of security risks, most notably maritime terrorism and border invasions, due to its vast shoreline and advantageous maritime location.

India is complex and uses a mix of international collaboration, interagency coordination, and technical surveillance. The strong coastal security infrastructure, which consists of a network of coastal RADAR systems, Automatic Identification Systems (AIS), and complex maritime tracking systems, is an essential element. Via the real-time situational awareness these technologies offer, authorities can keep an eye on transpiring movements and identify possible risks. Comprehensive surveillance is severely constrained by the size of the coastline and the enormous amount of maritime traffic.

The Indian Coast Guard is essential to maintaining maritime security, as are the Indian Navy and coastal police. For effective deterrence, regular patrols, cooperative drills, and information-sharing systems are essential. Interagency cooperation is facilitated by the **National Committee for Strengthening Maritime and Coastal Security** (NCSMCS), which guarantees smooth

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communication and operational synergy among diverse parties. Given the complexity of maritime threats which frequently involve non-state actors and multinational criminal networks this is crucial. The "**Security and Growth for All in the Region**" (SAGAR) project from India emphasizes the value of regional collaborations in tackling issues related to maritime security. SAGAR encourages information sharing, capacity building, and cooperative security arrangements with surrounding nations. This strategy acknowledges that combating transnational threats requires regional cooperation and that maritime security is a shared responsibility. Regional navies gain trust and improve interoperability through joint marine exercises, including those involving ASEAN countries.

Beyond terrorism, major border risks are human trafficking, smuggling, and illegal fishing. These actions have the potential to jeopardize national security and destabilize coastal communities. Addressing these issues requires bolstering coastal infrastructure, raising awareness of the maritime realm, and encouraging sustainable fishing methods. To protect India's strategic interests, a strong marine posture is required because to the growing militarization of the Indian Ocean region. Maintaining maritime dominance and discouraging possible enemies requires strategic alliances, improved maritime surveillance, and investments in naval capabilities. Several suggestions might be made to improve India's coastline and offshore defenses even more. So as to enhance predictive analytics and maritime domain awareness, there is a need for increased technological integration, including artificial intelligence and machine learning. Enabling threat assessment and response to be effective, interagency cooperation and information sharing must be strengthened.

Strengthening Shoreline and Offshore Security measures:

India's national security has significant challenges from maritime terrorism and border threats, which calls for an all-encompassing and strong strategy for coastal and offshore defense. Enhancing safeguards would necessitate increased interagency collaboration, improved information collection, and cutting-edge technology. It is crucial to remember that only technological surveillance is not sufficient on its own. Enhancing human intelligence (HUMINT) is essential for obtaining information about possible threats from the ground. This entails creating strong networks of agents and informants in the maritime sector and coastal communities. In

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addition, a special focus on cyber intelligence is required due to the growing dependence on digital technologies. A thorough intelligence approach must include both monitoring internet activity linked to maritime terrorism and safeguarding vital marine infrastructure from cyber-attacks. (Innovations in technology are essential to enhancing India's marine security. The efficiency of surveillance activities can be greatly increased by implementing threat detection systems driven by AI. Systems have the ability to examine enormous volumes of data from multiple sources, finding trends and irregularities that can point to possible dangers. By integrating blockchain technology with secure shipping records, marine trade can become more transparent and traceable, which lowers the danger of illegal operations like smuggling and the transfer of explosives or weapons. Technology can offer an unchangeable record of ownership and shipment movements, making it harder for criminals to hide their actions (Usha Natesan, 2015). Furthermore, prompt information exchange and coordinated responses can be facilitated by the establishment of secure communication channels and data-sharing platforms between ports and associated agencies. For shoreline protection to be effective, swift response teams and marine police stations must be expanded. By providing patrol and surveillance capabilities along the coastline, coastal police stations act as the first line of defense against maritime threats. Coverage and reaction times can be improved by strategically placing more coastal police stations (Tetreault, 2005)

Awareness and Involvement in the Community:

It is impossible to overstate the importance of coastal communities and fishermen in obtaining intelligence. Due to their close ties to the water through their livelihoods, these people have an unmatched awareness of regional maritime trends, odd vessel movements, and possible abnormalities. As the first line of defense against possible threats, their everyday routines put them in a unique position to notice and report unusual activity. Structured information-sharing channels are essential to realizing this potential. It is essential to build confidence and safe routes of communication between these communities and law enforcement organizations. Frequent meetings, training, and feedback sessions can foster open communication and trust.

In order to turn fishermen and coastal dwellers into active participants in maritime security, training programs that meet their needs are essential. These programs ought to concentrate on teaching children about possible dangers, such as how to spot strange ships, spot smuggling, and know how important it is to report odd encounters. Giving these groups the tools they need, such

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as GPS units, radios, and binoculars, improves their capacity to participate successfully. Partnerships between the public and commercial sectors are essential for enhancing maritime security capabilities and infrastructure. Cooperation between governmental organizations, businesses, and coastal communities makes it easier to share resources, knowledge, and technology.

Future Outlook and Recommendations:

In regard to changing threats like maritime terrorism and border intrusions, India's maritime security depends on proactive adaptation and strategic foresight. A strong view for the future and practical suggestions are essential for improving coastline and offshore protections. The incorporation of cutting-edge technology, particularly blockchain, artificial intelligence (AI), and autonomous systems, is essential to this ambition. By evaluating enormous datasets from radar, sonar, and satellite photos to identify irregularities and anticipate possible dangers, artificial intelligence (AI) has the potential to completely transform maritime surveillance. Early warning signals and quick action are made possible by machine learning algorithms that can identify trends that point to unlawful activity or suspect vessel behavior. Blockchain technology provides a transparent and safe platform for improving port security, managing marine trade routes, and confirming the legality of goods. This can lessen the chance of illegal trafficking, smuggling, and the introduction of risky substances. Unmanned devices, especially drones and autonomous underwater vehicles (AUVs), can patrol large marine areas, perform remote inspections, and increase surveillance capabilities while lowering human risk and dependency on manned platforms. Significant investments in infrastructure, R&D, and training staff to properly operate and maintain these systems are required for the deployment of these technologies. A further essential aspect of future maritime security is bolstering cyber security for port and maritime operations (Yazdan Reza Zadeh, 2023).As essential hubs for international trade, ports are becoming more and more susceptible to cyber-attacks that could interfere with business operations, harm vital facilities, and encourage illegal activity.

A thorough cyber security plan is necessary to defend control systems, communication networks, and port information systems against online attacks. This entails carrying out frequent vulnerability assessments and penetration tests along with putting in place strong firewalls, intrusion detection systems, and data encryption procedures. Additionally, reducing the likelihood of social

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engineering attacks and limiting human mistakes require raising cyber security knowledge among port staff and maritime stakeholders. Since maritime activities are interconnected, international collaboration in cyber security is essential. This cooperation includes exchanging best practices, holding joint exercises, and developing shared standards. To tackle the complex issues of marine security, technical developments, improved interagency coordination, and global cooperation are essential. It is crucial to create a national maritime security architecture that outlines the functions and duties of different organizations, including the Coast Guard, Indian Navy, marine police, and intelligence services. Coordinated threat responses, cooperative operations, and smooth information exchange should all be made possible by this architecture. Equally crucial is international cooperation, especially when dealing with transnational dangers like drug trafficking, piracy, and maritime terrorism. Enhancing regional maritime security and fostering trust between parties can be achieved through combined patrols, intelligence sharing with partner countries, and participation in international projects. Tackling the underlying causes of instability and conflict in the marine state is necessary for a proactive approach to maritime security. This entails tackling socioeconomic disparities, encouraging regional collaboration on maritime matters, and supporting sustainable development in coastal areas. In coastal locations, making investments in infrastructure, healthcare, and education can increase community resilience and lessen the incentives for people to commit crimes (Kala Baskar, 2025). Building international confidence and preventing conflicts can be achieved by encouraging communication and collaboration on issues such as resource management, environmental preservation, and maritime border disputes. Strengthening India's offshore and shoreline defenses and defending its maritime interests in the twenty-first century require a comprehensive and innovative strategy that incorporates technical innovation, cyber security, interagency coordination, and international cooperation. Addressing transnational marine risks requires promoting international cooperation. No one country can adequately handle these risks on its own due to the maritime domain's interconnectedness. It is essential to cement alliances with nearby nations and other maritime powers by means of cooperative exercises, intelligence exchanges, and capacity-building programs. Promoting marine security and collaboration also requires participation in regional and global organizations, such as the United Nations Convention on the Law of the Sea (UNCLOS) and the Indian Ocean Rim Association (IORA) (Navy, 2018)

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Conclusion:

India needs a strong and extensive security strategy because of its extensive shoreline and its maritime location, which make it susceptible to border threats and maritime terrorism. The difficulties are numerous and include the smuggling of weapons, drugs, and other illegal goods as well as the possibility of terrorists infiltrating via maritime routes. A constant level of alertness is required due to the size of the maritime domain and the changing strategies of non-state actors. The dynamic combination of improved federal collaboration, technology developments, and—most importantly the active participation of coastal communities are the main answers that have been considered. For monitoring the enormous ocean extent, technological innovations such as satellite surveillance, advanced radar systems, and unmanned aerial and underwater vehicles are essential. Real-time situational awareness made possible by these technologies allows for quick reactions to new threats. Technology is not enough on its own. Since many departments, including the Indian Navy, Coast Guard, marine police, and intelligence services, are involved, effective interagency coordination is essential.

A proactive, multi-layered security strategy is necessary. This includes both proactive tactics for preventing threats as well as reactive ones to confront them. This calls for a thorough comprehension of the socioeconomic elements that may be involved in maritime insecurity. Programs for sustainable development that boost infrastructure, increase education and healthcare, and open up economic opportunities can greatly lessen the motivation for engaging in illegal activity. These initiatives would improve community involvement in maritime security and increase resilience to external threats by promoting a sense of socioeconomic stability.

It is imperative that maritime security receive consistent funding and policy attention. This entails developing strong maritime domain knowledge, increasing security personnel's capacity, and continuously improving surveillance technologies. Frameworks for policies must be flexible and quick to adjust in order to address the changing nature of marine risks. It is crucial to regularly review security procedures, assess new technology, and modify training courses. Even though the goal of the article is to give a thorough overview of India's maritime security issues and tactics, some recent international developments require more attention in order to determine their potential long-term effects. These include the following: China's assertive expansion in the Indian Ocean Region, particularly through port development and naval deployments; the ongoing tensions

between India and Pakistan that pose risks of maritime confrontation the volatile character of U.S. trade policies and tariff regimes, which may have an indirect impact on maritime trade and naval logistics; and the growing strategic contestation in the larger Indo-Pacific. In order to create strong policy responses, each of these elements adds new aspects to maritime security that need to be regularly observed and analyzed extensively.

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