WHITE BLACK LEGAL LAW JOURNAL ISSN: 2581-8503

Peer – Reviewed & Refereed Journal

The Law Journal strives to provide a platform for discussion of International as well as National Developments in the Field of Law.

<u>DISCLAIMER</u>

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ABOUT US

WHITE BLACK LEGAL is an open access, peer-reviewed and

refereed journal providededicated to express views on topical legal issues, thereby generating a cross current of ideas on emerging matters. This platform shall also ignite the initiative and desire of young law students to contribute in the field of law. The erudite response of legal luminaries shall be solicited to enable readers to explore challenges that lie before law makers, lawyers and the society at large, in the event of the ever changing social, economic and technological scenario.

With this thought, we hereby present to you

MARITIME SECURITY: TECHNOLOGY TO IMPROVE MONITORING

AUTHORED BY - MRS. MANYATHA PRASAD WAGHRAY

Abstract:

Maritime security refers to both national security as well as the defence of the nation's lakes and oceans. There are many offences that need to be rectified near the water these days. These are the most current issues that have an impact on international relations between nations. Strong security measures are required in this location. This region has grown to be one of the global hubs for energy and trade. Numerous historical and contemporary safety and security issues, including drug trafficking, terrorism, robberies, illicit wildlife trade, illegal arms trade, fishing, climate change, and more, plague the region surrounding the Indian Ocean.

Introduction:

Maintaining the security of the maritime realm requires the use of current technologies. These techniques, which range from enhanced monitoring to more intelligent data analysis, aid in understanding maritime activities and provide protection against emerging threats.

1)   Awareness of the Maritime Domain (MDA)

Marine Domain Awareness (MDA) ensures a thorough grasp of marine operations and potential threats through the use of cutting-edge technologies. This idea first appeared in the late 20th century, and in the early 21st century it attracted a lot of interest and development. MDA improves real-time monitoring of marine environments by utilising data analytics and sophisticated maritime surveillance equipment. By utilising radar, satellite images, and additional sensor technologies, MDA offers priceless insights on maritime activities, environmental circumstances, and suspicious activities.

Sinay is an excellent illustration of real-time maritime environment monitoring (passive acoustics monitoring, water quality, metoceanic conditions, air quality, etc.) with its Solutions.

2)   Using artificial intelligence's potential

Across the globe, the incorporation of cutting-edge technologies like artificial intelligence (AI) is completely changing maritime security strategies. marine organisations can improve their

capacity to keep an eye on large marine regions and react swiftly to new dangers by employing AI-driven technologies. These cutting-edge programs make it possible to analyse marine data in real-time, giving authorities the ability to spot suspicious activity, recognise possible security threats, and plan prompt interventions. Sinay helps the maritime sector address challenges by utilising data and digital solutions. To help each organisation find solutions, Sinay's experts, for instance, provide advice and workshops that are specifically customised to their needs. They also direct maritime businesses.

They also offer guidance to maritime companies on how to use digital technologies to enhance their operations. Predictive analytics and proactive marine security measures are made possible by AI systems' ability to continuously learn from and react to changing threats through the use of machine learning algorithms. Stakeholders may increase overall maritime operating efficiency, improve decision-making procedures, and optimise resource allocation with AI technology.

3)   Patrols in surveillance systems: Their function

Because they provide prompt reactions to possible threats and improve situational awareness, tracking devices are essential to maintaining maritime security. Patrol and surveillance technologies offer extensive coverage of domains, allowing authorities to track vessel movements, identify possibly illegal activity, and enforce compliance with marine regulations. Examples of these technology include radar, satellite photography, and drones. International stakeholders can devise efficacious ways to optimise resource allocation, prioritise response efforts, and minimise maritime security concerns in heterogeneous contexts by investigating the capabilities and limitations of surveillance technologies.

CONFLICTS OVER MARITIME BOUNDARIES

The legal route

Different interpretations of maritime boundary line drawing have been developed by states (Forbes, 1995). The shape of the geographical characteristics of the land from which the maritime boundary is derived (i.e., the direction of the coastal front and the weight given to islands and submarine features) and which portion of the coast is relevant to delimitation are the factors that determine these differences (Bailey 1997; Bateman 2007; Nemeth et al., 2014). These differences also depend on which map projection is used when drawing the boundary. Maritime boundary disputes were widened when states extended their exclusive economic

zones (EEZs) to 200 nautical miles in the post-war era (with some states doing so as late as the 1980s and 1990s).

Where state borders overlapped or blended, new conflicts emerged. Additionally, boundary disputes between the maritime zones of "opposing" or "adjacent" coastal governments occurred or grew in importance. The idea of "equidistance" gained prominence as the demand for their delimitation grew. Another driving theme that came up was "equity." Understanding how states resolve their maritime boundary disputes (and the principles that underlie such processes) depends on an understanding of the (legal) conflict that has developed over the previous 50 years between these two concepts. A boundary that is equivalent to the median line at every point along each state's shoreline is said to be equidistance.

According to certain academics, this was formalised in Article 6(2) of the Geneva Convention of 1958 on the Geneva Convention on the Continental Shelf, which requires governments to resolve conflicting claims by using the equidistance principle.

States' perceptions of "relevant" or "special" circumstances differed, nevertheless, because courts focused on them while deciding boundary disputes. A few international rulings have occasionally given weight to security interests and the location of natural resources in addition to coastal length and other geographical factors. This is known as "equity," which is a different concept from "equidistance." However, in decisions over the past few decades, the International Court of Justice (ICJ) has favoured a stringent interpretation of the circumstances that qualify as relevant, emphasising geographical elements in a three-phase process for defining maritime borders, as demonstrated in the 2009 Black Sea Case involving Romania and Ukraine. In relation to the continental shelf and the EEZ, the regulations that resolve the two Although there were initially differences in the types of boundaries, in recent decades they have mostly converged with judicial decisions.

The distinction between the sea and the land

The distinction between land and maritime space is crucial to comprehending the legal procedures described here. In addition to the obvious reality that people cannot easily live in maritime space, there are other significant legal distinctions that affect maritime boundaries. The idea of occupation, which is essential to proving ownership of land, is not as applicable in the sea sphere. In opposition to sovereignty over land-based territory, occupation of the

continental shelf itself cannot result in shelf acquisition. With UNCLOS, a clear division between land and sea became evident because rights to the latter are derived from rights to the former.[1]

Because the characteristics of the ocean are so dissimilar from those of A rights-based system that benefits marine governments has been applied to land and maritime space. This growing significance of the ocean in world politics has been made possible by the disentanglement of states' maritime rights from geophysical characteristics. The importance of natural prolongation and the notion that states should take the seabed's characteristics into account when drawing boundaries for maritime space were first highlighted by the North Sea cases of 1969. After UNCLOS was concluded in the early 1980s, governments could now claim rights to the resources within their 200 nautical mile zones without having to demonstrate that the seabed belonged to them.

Furthermore, sovereign rights to resources in the water column or on the seabed—rather than exclusive rights to the entire marine "territory" in question—are what we are talking about when it comes to states and maritime space (aside from the territorial sea). States can only implement environmental rules in their maritime zones and refuse actors access to marine resources, but they cannot deny passage across their EEZs. Thus, we are talking about two distinct types of "rights" granted by states: "Maritime boundaries (apart from those of the territorial sea) separate only sovereign rights with a functional, and thus limited, character, in contrast to land boundaries which separate sovereignties in their entirety."

If both governments have legitimate legal claims to a particular area, then delimitation in the marine domain becomes a matter of "reasonable sacrifice such as would make possible a division of the area of overlap." As in the case of a cooperative fisheries zone or oil and gas resources, joint sharing is also feasible. Remembering the important distinction between complete sovereignty, as described by, for instance, Krasner's (1999) accounts, and sovereign rights (EEZ, continental shelf) is vital.

Today's maritime boundary disputes

The procedures by which states resolve disputes over maritime boundaries are very different

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[1] Martin N. Murphy, Small boats, weak states, dirty money: piracy and maritime terrorism in the modern world C Hurst & Co Publishers Ltd. (2010)

from the ideas that direct the design of such limits. States have a number of options for resolving disputes: they can reach an amicable agreement through bilateral talks; they can take the matter to the International Court of Justice (ICJ) or another international tribunal, like the International Tribunal for the Law of the Sea (ITLOS); or they can use third-party arbitration, like the Permanent Court of Arbitration (PCA).

If at all possible, settlement routes involving international arbitration are the least desirable of these choices. States are not motivated to file lawsuits before courts and tribunals when there is uncertainty over the result of international adjudication and arbitration. States can choose a creative solution unrestricted by the international laws enforced by courts and tribunals when a dispute is resolved bilaterally. States find it costly to pursue delimitation in this way since litigation is expensive and the maritime domain process frequently necessitates a large amount of scientific evidence.

States are allowed to use any method they choose when defining maritime space, as a result of which about 95% of maritime boundaries that have been agreed upon between 1950 and 2020 were reached through negotiations outside the purview of arbitration or adjudication. Studies reveal, however, that even when governments choose for bilateral talks rather than the constraints of international arbitration and adjudication, they still rely on and generally follow the legal principles as outlined by decisions from foreign courts.

NON-TRADITONAL THREATS

Even if stability is still essential to the growth of IOR, the socioeconomic diversity of the area has led to varying perceptions of threat and a lack of shared knowledge. Given that maritime trade security requires both internal and global interests have converged in the marine realm amongst the five fundamental components of the shipping industry: cargo, ports, sailors, ships, and ISLs.[2] Security concerns that arise from land-based socioeconomic causes can extend to the maritime sphere. These violations, combined with the uniform nature of the water, which absolves the high seas of all authority, have enabled the non-traditional security dangers to proliferate widely throughout the Indian water. Natural disasters, terrorism, piracy, drug and people trafficking, and the illicit transportation of weaponry, including WMDs, are a few of these.

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[2] Editorial Essay, 'Research agendas for the Indian Ocean Region',.

Non-traditional security concentrates on non-military threats that share the following traits:

- From their point of genesis to their consequences, the threats are international in character.

- Rather than being explained as the outcome of power struggles or shifts in the distribution of power among nations, they are commonly discussed in political and economic terms.

- Security is threatened by non-traditional security issues include irregular migration and resource scarcity because they lead to social unrest and political instability.

- The delicate natural balance is frequently disturbed by human activity, leading to other dangers like climate change, which have severe repercussions for both states and communities and are frequently hard to undo or repair.

- Since national responses to these challenges are typically inadequate, local, and worldwide collaboration is necessary. Security is no longer only defined by the state (on concerns pertaining to territorial integrity or state sovereignty), but also the people (their survival, welfare, and dignity) on a personal basis and social level.

1.   Theft and Armed Robberies

The Indian Ocean's vastness dense trade and lax maritime law enforcement have encouraged piracy, which has expanded dramatically during the last five years in the Malacca Strait, Somali Basin, and Red Sea. Even though the source of this maritime lawlessness is on land, numerous countries have stationed their warships near the coast of Somalia in an attempt to safeguard commercial cargo. As a result, there have been fewer pirate assaults in the previous three years; in 2013, only 15 ships reported assaults off Somalia's coast, down from 237 in 2011. Similarly, there were two instances of hijacking in 2013 compared to 14 in 2012 and 28 in 2011.[3] But during that same time frame, there was a steady rise in pirate incidents in Indonesian waters.

Three specialised The SNMG 1 and 2 of NATO the EU NAVFOR, along with CTF 15 are the counter-piracy coalition forces that have been in operation since 2008 in an effort to stop pirate away from Somalia's coast. In addition, merchantmen are being separately escorted by warships from South Korea, Japan, China, Russia, and India. Force-providing governments and coalitions employ the mechanism referred to as Shared Awareness and De-confliction

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[3] Website icc-ccs.org, 'ICC International Maritime Bureau: Piracy and Armed Robbery Against Ships Report 2013'.

(SHADE), which was launched in 2009, to share intelligence and coordinate the deployment of warships in the Globally Acknowledged Transit Corridor (GTC) situated in the Gulf of Aden. 2012 saw the decision by South Korea, Japan, China, and India will coordinate their escort activities in order to maximise the deployment of warships as a result of the SHADE agreement.[4]

Despite the threat, only significant both local and distant players are contributing to counter-piracy operations. The main reasons a pan-region system hasn't emerged are an inadequate capacity for the region and lack of a foundation for regional security. Indian policymakers have rejected multinational engagements when engaging in anti-piracy efforts despite the Indian Navy's (IN) insistence on them because of domestic political concerns. Following considerable pressure and an annual cost of 80 crores for separate escort operations, the authorities eventually consented to India lagging behind South Korea, Japan, and China in coordination.

2.   Trafficking in Drugs and Unauthorised Migration

Small arms proliferation, narcoterrorism, and drug trafficking are closely related. Immigration without authorization and covert drug trafficking in and there are signs of political unrest and poor governance all throughout the Indian Ocean. This issue has been exacerbated by uncontrolled vessel movement, containerised maritime commerce, and Flags of Convenience (FoC) shipping.[5] The Golden Triangle (Myanmar, Thailand, and Laos) and the Golden Crescent (Pakistan, Iran, and Afghanistan) are crossed by drug trafficking, which results in money laundering and the funding of gunrunning, insurgency, and terrorism. A further international security risk that exacerbates socio-political instability is human trafficking.[6] Small arms proliferation since the end of the Cold War, has increased, which puts domestic security in many nations at serious risk. It foreshadows a grave danger to security between and within states by redistributing authority between the state and non-state actors (terrorists, drug dealers, and insurgents). Given the significant scope of these issues in the IOR, collaboration across the regional community is imperative in addressing these formidable challenges to state sovereignty.

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[4] Website oceansbeyondpiracy.org, 'Guide to International Efforts to Address Piracy Off the Coast of Activity'.
[5] Anil Kumar Singh, 'India's Security Concerns in the Indian Ocean Region',).
[6] GS Khurana, 'Maritime Security in the Indian Ocean: Convergence Plus Cooperation Equals Resonance',.

3.   Globalisation

Populations have more access to the economy thanks to globalisation, which depends solely on the unrestricted flow of international seaborne trade. But terrorists and rogues also take advantage of these openings, employing maritime commerce to smuggle WMD materials into unlawful territories. Even though the main tool in the fight against proliferation may be diplomacy, containment will always be the solution. In IOR, the Initiative for Proliferation Security (PSI), which aims to encourage the intercepting of illicit WMD cargo, has not been subscribed to. In addition to the UN's lack of support, PSI faces two main legal obstacles. First of all, the Law of the Sea restricts the ability to stop, board, and search ships without authorization. Second, because the transportation of materials for illicit WMD purposes is not a crime that is punished internationally, it is difficult to seize them or prosecute the traffickers.[7] Without intelligence cooperation, There is too much to explore in the Indian Ocean nation to contain any unlawful migration. Although technology has the potential to use to obtain precise Maritime Domain Awareness (MDA), willing nations working together to exchange intelligence and present a single front is more crucial.[8]

4.   Natural Disasters

Because of the dense population along the coastal regions, this region experiences severe results from over 60% of natural disasters worldwide. In such cases, relief efforts are platform intense, requiring group involvement and effort.[9]

AN OVERVIEW OF NON-TRADITIONAL SECURITY ISSUES

South Asia

Natural catastrophes have resulted in a series of problems for the South Asian region. For example, in 2004 the Indian Ocean was ravaged by a massive tsunami and earthquakes littoral regions. Cyclone Sidr devastated Bangladesh, Afghanistan, Pakistan, India, and Sri Lanka after making landfall in 2007 was a couple years later. Cyclone Amphan in 2020 caused around 5 million people to be uprooted from their residences in Bhutan, Bangladesh, India, and Myanmar; this was one of the largest natural disaster-related displacements ever recorded.

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[7] Thomas Bowditch, 'Maritime Threats, Risks and Priorities in the IOR: An American Perspective', in 'Security Challenges along the Indian Ocean Littoral: Indian and US Perspectives', (Matrix Publishers, New Delhi, 2011), p 47.

[8] Emma Belcher, 'A Tighter Net: Strengthening the Proliferation Security Initiative', available at URLhttp://lowyinstitute.org/files/pubfiles/Belcher percent2C_A_tighter_net.pdf

[9] PK Ghosh, 'Indian Ocean Naval Symposium: Uniting the Maritime Indian Ocean Region', (Strategic Analysis, Vol. 36, No 3, May-Jun 2012), p 353.

These catastrophes cause significant death tolls as well as financial damages. Insufficient inadequate post-disaster recovery efforts and early warning systems actions frequently exacerbate the effects.

Additionally, lately countries in the area have been addressing an increase of NTS hazards because of the changing climate. Increasing ocean levels, as per the Intergovernmental Panel on Climate Change (IPCC), would have disastrous consequences for the region's low-lying communities. River systems may be seriously threatened by the glacial recession that is currently occurring in the Himalayas, for instance.

Furthermore, Migration due to climate change is becoming more frequent. According to a 2018 World Bank assessment, the effects of climate change will force over 140 million people to leave their home nations by the year 2050. Climate change-related migration affects access to necessities like healthcare and education as well as escalating tensions and inequality. For instance, Bangladesh is now a centre for this issue. Adding to Bangladesh's difficulties is the influx of Myanmar's Rohingya refugees. Out of a million, 860,000 are Rohingyas who have been internally displaced and who are seeking asylum Bangladesh alone is home to refugees from numerous neighbouring countries, as per the United Nations High Commission for Refugees (UNHCR).[10]

Southeast Asia

The illicit drug gang that controls the Golden Triangle, which is thought to rank as the second-biggest drug-producing region in the world and the primary producer of opium, still has its headquarters in Southeast Asia.

According to UN estimates, poppy production has expanded to 60,703 hectares, or 150,000 acres, of land in Myanmar, having tripled since 2006. Even though Myanmar's economy has grown somewhat, development initiatives have not reached the country's periphery, which has allowed industries like poppy growing to flourish. Although the UN has tried to intervene by implementing crop substitution in Laos and Myanmar, the problem of drug trafficking has only become worse quickly, creating difficulties for other countries as well.

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[10] https://sinay.ai/en/key-concept-of-maritime-security

For example, Vietnam, which has some of the strictest drug prohibitions in the world, is a centre for the transportation of methamphetamine and heroin. The usage of stimulants similar to amphetamines (ATS), which are trafficked and smuggled from the Golden Triangle's borders, is shifting away from heroin in nations like China, Korea, Japan, and the ASEAN countries.[11]

Southeast Asian nations, particularly Vietnam, Thailand, Indonesia, Myanmar, and the Philippines are facing numerous climate-related hazards, much like their South Asian counterparts. According to UN estimates, Southeast Asia's risk of floods and droughts, for instance, would only rise over the next ten years, resulting in financial losses equivalent to 3% of GDP for Laos, above 1.5% for the Philippines, and 2% for over 1.5 percentage in favour of Cambodia.[12]

Other threats are equally dire: due to overexploitation of palm oil, Indonesia's forest cover has decreased from 65.4% in 1990 to 50.2% in 2013; plastic garbage from China and a few other SEA nations, makes up a significant portion of all the plastic trash in the waters worldwide; additionally, considering their placement inside the Pacific Ring of Fire, nations like Indonesia and the Philippines are constantly at risk of earthquake-related disasters.

Small Island Nations

Small islands continue to have low greenhouse gas (GHG) emissions, but the risks of global warming—particularly sea level rise—to these islands cannot be understated. Natural disasters, unlawful and unsustainable resource extraction, and international crime are among problems faced by these states. Frequently, they lack the means to address the challenges, and as a result, multilateral collaborations would be required.

WORKING TOGETHER ON CONTEMPORARY PLATFORMS FOR NON-TRADITIONAL SECURITY ISSUES

Collaborations aimed at bolstering traditional security are abundant. It is essential to grow completely new structures for cooperation as well as to broaden the purview of current procedures to encompass the mitigation of NTS dangers.

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[11] Brian Eyler, "Solving Southeast Asia's Drug Problem."
[12] "Vietnam and the Mekong's Synthetic Drug Epidemic."

Institutional Framework

a.   ASEAN

The regional security system of ASEAN has been continually tested over time by NTS problems. The 1997 Asian financial crisis, the 2002–2003 SARS outbreak, the 2007 avian flu pandemic, and, most recently, the 2020–starting Covid-19 pandemic are a few examples.[13]

To address the diverse issues, ASEAN has established several mechanisms. The ASEAN-wide Agreement on Emergency Response and Disaster Management, for instance, provides the member states with a strong policy foundation to support their combined efforts in lowering the risk of disasters as well as reacting to them. In the meantime, members of the ASEAN Regional Forum (ARF) collaborate to improve peace as well as regional safety through the evolution of suitable policy. The states can now pursue political alignment and security cooperation thanks to the efforts of the ASEAN Political-Security Community (APSC).

The ASEAN Plan of Action to Combat Human Trafficking, Particularly of Women and Children has detailed action plans that must adhere to both pertinent international responsibilities and the national legislation and regulations of ASEAN members nations. The objective is to tackle shared regional issues among all participating nations. In response to the Covid-19 epidemic, the member states of ASEAN initiated information-sharing and issued a Movement Restriction Order (MRO) at the beginning of 2020.[14]

Additionally, ASEAN collaborates with other nations on various fronts. As an illustration, it established the ASEAN Plus Three (APT) project with South Korea, Japan, and China. The bloc participates in the Disaster Relief Exercise of the ASEAN Regional Forum alongside India.[15] India does, in fact, hope to establish close connections with the Coordinating Centre for ASEAN for Disaster Management Aid to the Humanitarian. India has additionally shown a desire to collaborate alongside ASEAN in the creation of generic pharmaceuticals and medical technology during the Covid-19 outbreak.

b.   Blue Dot Network

In 2019, the United States and its supporters launched the Blue Dot Network (BDN) to

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[13] Dominik Heller, "The Relevance of the ASEAN Regional Forum (ARF) for Regional Security in the Asia-Pacific"

[14] ASEAN Political-Security Community Blueprint, *ASEAN*, June 2009

[15] *"Forging a strategic 'Gateway': The Bay of Bengal and Andaman Sea"*

encourage the growth of infrastructure. Cooperating with nations such as Australia, Japan, and India, the BDN places a strong emphasis on infrastructure projects' sustainability. An infrastructure project that has earned a BDN accreditation is trying to be sustainable. The Blue Dot Marketplace can assist nations in building sustainable infrastructure by highlighting possible effects on disaster preparedness, food security, and wellness. A significant BDN agreement addresses an initiative pertaining to "smart cities" among the ASEAN countries.

c.   Association for the Indian Ocean Rim (IORA)

With 23 member states and 10 conversation partners, the Indian Ocean Rim Association (IORA) seeks to promote sustainable development and regional cooperation in the area. The group seeks to address the various conventional and unconventional security and safety issues that the nations in the area face, such as terrorism, human trafficking, illegal immigration, piracy, armed robbery at sea, and the trafficking of drugs and weaponry, and wildlife. Crimes related to the fisheries industry include illegal fishing, damaging ocean health, and misusing marine resources. These problems are made worse by the problems caused by global warming. A schedule for the establishment of the Working Group on Disaster Risk Management (WGDRM) within IORA was established at the inaugural Disaster Risk Expert Group Management of IORA in January 2021. The IORA Guidelines for HADR operations in the Indian Ocean were also finalised by member states. By implementing the suggestion in the IORA Action Plan to establish an ongoing Working Group on Maritime Safety and Security, the IORA should increase collaboration in the fight against non-traditional security issues surrounding the Indian Ocean.

d. BIMSTEC

The BIMSTEC countries—Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand-have determined that combating international crime and terrorism is a critical requirement for both sustainable development and regional peace. 2009 saw the group adopt the "BIMSTEC Convention on Cooperation in Fighting Transnational Organised Crime, Illicit Drug Trafficking, and International Terrorism." With fifteen articles, the custom serves as a guarantee-boosting tool for participating nations to work together to fight transnational organised criminality, worldwide terrorism, and the illicit trade in narcotics and psychoactive substances, including their precursor chemicals, while adhering to national laws and regulations.

However, unauthorised migration and human trafficking are not included in the pact. The BIMSTEC member states' national security advisers (NSAs) have been meeting annually, but the ratification of the mechanism for cooperation is still pending.[16] After that, the NSAs will devise plans for coordination and collaboration in the areas of security, intelligence, as well as law enforcement. This could facilitate the strengthening of the security system and make real-time information sharing possible. When it comes to disaster management, BIMSTEC can help with strengthening capacity through the sharing of information and technical expertise, standard operating procedure draughting, disaster reaction force creation, and funding allocation.

Forums About Miniatures

a. The Quad

The US, India, Japan, and Australia are the partners in the Quadrilateral Security discussion (often known as the "Quad"), a strategic security discussion aimed at leveraging partner complementarities to promote prosperity in the Indo-Pacific region. Selected ASEAN nations can participate in issue-based cooperation within a larger Quad agenda that addresses collaboration in non-military areas such as infrastructure, quantum computing, artificial intelligence (AI), Covid response, climate change, key technologies and materials, reliable supply chains, and cyber concerns. The Quad is also while constructing a robust framework for disaster relief and Indo-Pacific capacity building. In this network, vaccine diplomacy is important, but there is still more that can be done to address other NTS issues.

b. Trilateral India-Japan-Australia

India, Japan, and Australia may find that the Indo-Pacific region's geostrategic area is ideal for fostering regional cooperation and a rules-based system. The three nations have pledged to supply HADR to one another as well as to their adjacent states. Additionally, India and Japan have collaborated on exercises that centre on HADR operations.[17] Through the exchange of medical supplies in addition to HADR activities for the general growth the Covid-19 epidemic has given the countries of the trilateral a chance to focus on scientific advancement and research capabilities.

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[16] Sreeparna Banerjee, "The Rohingya Crisis and its Impact on Bangladesh-Myanmar Relations", Observer Research Foundation, August 26, 2020.

[17] https://sinay.ai/en/key-concept-of-maritime-security

Another issue is IUU fishing, which has only gotten worse because of consumer demand and threatens to make these few resources even more scarce. There's also the risk of marine crimes like irregular marine arrivals; forced work; and piracy, trafficking, and smuggling. India, Japan, and Australia, who are all home to sizable fishing communities, ought to cooperate via the IORA and other focused venues like the Indian Ocean Tuna Commission (IOTC) in order to broaden their influence.

METHODS FOR CREATING COOPERATIVE SECURITY BARRIERS TO COOPERATIVE MECHANISMS

The post-war period's developments have increased knowledge of the requirement to reinterpret what constitutes international security. When combined, the plethora regarding security that is not conventional issues in IOR are far more than any one body could possibly handle. The maritime doctrine of India highlights the transition from traditional fighting to incorporate unconventional dangers in recognition of the difficulties that surround Indian coasts. This underlines IN's benign and constable duties in the Indian Ocean. Even if extra-regional fleets help protect ships from piracy, such extensive deployments could not be financially viable in the future. Therefore, in the short- to medium-term, strong and ongoing coordination amongst important regional entities is required to evolve the IOR's marine security. In order to maintain policy consistency, cooperation would be required.

BLOCKERS OF COLLABORATIVE MECHANISMS

A common agreement to address activities threatening Indian Ocean trade routes is necessary given the reliance on marine trade for long-term economic growth. But before approving a regional cooperative plan, it is necessary to examine some of this particular region's special qualities.

The Indian Ocean is commonly separated into four smaller areas, namely East Africa, the Middle East, South Asia, and Australasia, rather than seeing it as a single regional region.[18] Second, various forms regional power dynamics, sectarianism, internal political turmoil, and governance plague this centre of third-world nations, which are all significant barriers to regional collaboration. Thirdly, pan-region security efforts have been eclipsed by a climate of suspicion and mistrust brought about by standard interstate security concerns. Lastly, non-

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[18] Manoj Gupta, 'Prospects for Regional Cooperation in the Indian Ocean Region'.

conventional marine challenges lead to issues involving both players in politics, both state and non-state, the economy, and humanitarianism. It is difficult to conceptualise remedies for the problems of human security and non-traditional transnational security, in contrast to traditional security. These obstruct regional solidarity, as does the heterogeneity of IOR at every turn.

BRINGING COOPERATIVE SECURITY BACK

Cooperation in the economy has brought together governments and citizens for the sake of mutual economic progress, with the advantages manifesting in diverse economic divisions. Political and security issues are then frequently better understood as a result of economic security. Despite globalisation, economic interests, and regional diversity have dominated the discussion of geostrategic issues, uniting sub-regional organisations. Economic commonalities and interdependencies at the sub-regional level have been effectively translated into sub-regional organisations such as ARF, ASEAN, GCC, SAARC, EAC, and ADC. Nonetheless, the majority of these have limited seafaring security charters and are oriented geographically or culturally. The Indian Ocean Rim Association (IORA) and the Indian Ocean Naval Symposium (IONS), two pan-IOR institutions, are notable outliers, though, as their member states are geographically dispersed throughout the region and are also members of one or more subregional associations for commerce. There are six discussion partners, two observers, and twenty member states in the IORA. IONS was an IN project launched in 2008 with the goal of strengthening information exchange between regional navies to confront maritime security threats to the IOR. As of right now, 35 countries are members of this construct. IORA brought together developed, developing, and rising countries for trade, investments, technology, and education across Australia, Africa, and Asia. The group is reviving by adopting a marine regionalism-based collective Indian Ocean security paradigm, following ten years of hibernation. The organisation reiterated its shared a desire for the prosperity, safety, and peace of the entire IOR countries in the Perth Communiqué in November 2013, acknowledging the significance of IONS complementarity.

REDEFINING INDIAN OCEAN GEOPOLITICS

From India's vantage point, the IOR's geopolitics are being redefined by three developments. First, marine security that isn't traditional. The IOR's larger framework is increasingly being used to depict the difficulties in Asian waters. Second, the US's position as the IOR's primary security supplier is comparatively waning as it directs its attention towards the Asia-Pacific

region. Thirdly, in order to solve maritime concerns, India must form relationships with states that share its interests as its modernization takes shape. IORA has confirmed the initial breakthrough by acknowledging that its participants have an interest in regional security as well. As a result, in order to support IONS, it is lining up with maritime security, safety, and disaster management. Paradoxically, despite its governmental level organisation up to this point, There was no agenda on maritime security adopted by the IORA. However, despite bringing regional navies together to talk about marine security, IONS has not received support from the government. This has continuously prevented IONS from converting operational procedures for marine security agendas. The new background facilitates the establishment of an implementable pan region mechanism and enhances the synergy between IONS and IORA. According to the 2012 Strategic Guidance for the US DoD, India would provide stability and act as an economic anchor for the area.[19] But India hasn't shown any indication of this intention. India's lack of dedication stems from its anti-multilateralist foreign policy, which is based on sovereignty, non-alignment, and strategic autonomy. Indian officials particularly avoid international military operations even after twenty years of economic multilateralism. In order to become a unified force that unites neighbouring states to mitigate marine threats, India would have to reevaluate its strategy. Preventing any polarisation of the IOR remains India's primary concern, notwithstanding its aspirations to become a central player in regional dynamics. India has restricted its actions to bilateral interactions with significant extra-regional powers. Even so, this helps to highlight India's good intentions, as seen by the country's indications that it is reevaluating its approach to military engagement.

The decision to establish trilateral marine cooperation between India, the Maldives, and Sri Lanka and to take part in the multilateral exercise "RIMPAC 2014" in July 2013 provide as evidence of this policy change. India is also moving from moralism to pragmatism by abandoning its long-standing reserve against military operations outside of the UN system.

Given the current force posture of the IN, it is neither practical nor cost-effective to maintain a constant security cover based on numerous bilateral engagements in the IOR, where unconventional threats have spread unchecked. Due to India's vigorous bilateral diplomacy, the navy now only operates in certain time and space zones and maintains a limited presence. When sprinting This programme runs the risk of operating beyond its intended scope due to the IN's

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[19] 'Sustaining US Global Leadership: Priorities for the 21st Century Defence'.

current capacity and competence.

CONCLUSION

Maritime security is now popular. It is meaningless in the extreme. Its significance is realised through the performers' attempts to fill it with various topics, relate it to others, and act in its name. Therefore, it is pointless to try to come up with a definition of maritime security that everyone can agree upon. The goal of this article is to provide strategies for handling the concept's multiple voices. In order to disentangle political interests and worldviews and to understand the meaning of maritime security, three methodologies have been developed. These tactics offer a fruitful starting point for researching maritime security and examining the various viewpoints of participants in various contexts.

Therefore, posing the question "What is Maritime Security?" results in a potential study plan that maps out the definition of the term. Such research directly affects national and international policy. They promote understanding amongst actors by making clear when and how they agree and disagree. They make it possible to deal with issues of coordination and to interpret maritime disputes differently, beginning with an examination of the meaning that various actors attribute to the marine as a security domain rather than with the presumed interests of the parties involved. Lastly, these investigations will also help define the boundaries of the developing subfield of Maritime Security Studies and stress the cross-disciplinary connections to studies of global governance, economics, development, and the environment.

Maritime security presents a world where threats foster resilience and difficulties welcome creativity. Surveillance and reaction capacities are improved by embracing contemporary technology like MDA and AI, as well as by comprehending regulatory frameworks like UNCLOS and organisations like the IMO. States and stakeholders can maintain protection and reduce dangers for both the present and the future generations by consistently improving monitoring systems and placing a high priority on international collaboration. A comprehensive marine security system includes coastline monitoring in addition to ship and port security, guaranteeing a coordinated effort to protect the maritime area. Safeguarding the marine domain entails more than just keeping people safe; it also requires juggling complexity and directing the planet's essential rivers in an ethical manner.