

# ENHANCING MARITIME COOPERATION AMONG THE LITTORAL STATES IN THE BAY OF BENGAL REGION (BBR)

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## Introduction

The Bay of Bengal Region (BBR), in a colloquial and holistic sense, subsumes the Andaman Sea also, though the area limits of both the Bay of Bengal and the Andaman Sea are clearly defined in the International Hydrographic Organisation document ‘Limits of Oceans and Sea’ (IHO, 2017). The littoral states in the BBR include India, Bangladesh, Sri Lanka, Myanmar, Thailand, Malaysia and Indonesia. The principal trade routes for large tankers en route from the Persian Gulf to the Strait of Malacca pass south of the Bay of Bengal, and it thus lies at the crossroads of maritime routes traversing the Indian Ocean.

**Figure 1:** The Bay of Bengal Region - Geographical Map



Sources: World Atlas, 2017

The oceans and the seas have vast resources and more importantly, are a vital means of transport for economic development and prosperity. The current maritime issues affect all the littoral states in the BBR, therefore, the research explored all the avenues for enhancing maritime cooperation among the littoral states. The vulnerabilities, challenges and threats in the maritime security and safety domain in the BBR include, but not limited to, the safety and security of Sea Lanes of Communication (SLOCs), oil rigs and offshore assets, piracy, armed robbery at sea, maritime terrorism, drug and arms smuggling, human smuggling and trafficking, illegal migrations, Illegal Unreported and Unregulated (IUU) fishing, search and rescue (SAR), disaster mitigation and Humanitarian Assistance and Disaster Relief (HADR), marine pollution, etc., many of which have acquired trans-national dimensions.

However, in order to accord due justice to the research, issues like human smuggling and trafficking, illegal migrations, IUU fishing, marine pollution, etc., which mostly occur within the territorial waters of the littoral states and fall within the responsibility purview of the Coast Guard, Marine Police and Customs Authorities have been kept out of the scope. The perceived infringement of sovereignty will thus be mostly avoided.

About 80 percent of world trade is carried out using the marine routes and there is total dependence of the contemporary trade and commerce on the sea-lanes of the BBR. Issues like piracy, drug and arms trafficking, global climate change and natural disasters like floods require collaborative approach (Alam, 2004).

Vast dissimilarities exist in terms of size, extent, geography and a host of other parameters among the littoral states. The degree of preparedness and the ability to handle the issues also vary. There is, therefore, a need for efficient and effective bilateral and multilateral linkages among the littoral states of the BBR to strategise and ensure maritime cooperative engagement to handle the vulnerabilities, challenges and threats in the maritime safety and security domain (the terminology 'naval cooperative engagement' has been consciously avoided as it would ascribe an offensive tone to the engagement, which otherwise is proposed to be a cooperative engagement).

The issues, which effect maritime safety and security, include various vulnerabilities (like safety and security of SLOCs, shipping, oilrigs and offshore assets), the challenges (like surveillance capabilities, problems of identification at sea, SAR, disaster mitigation and HADR) and the threats with trans-national dimensions

(like piracy, armed robbery at sea, maritime terrorism, drug and arms smuggling etc.). They are closely linked with regional as well as sub-regional concerns.

The concept of maritime security has been changing over time, which initially had a strong 'national' focus in the law of the sea and primarily concentrated upon the protection and integrity of the nation-state and upon taking on the hostile states. Over a period, the idea has developed into a global concept with much wider dimensions. The security concerns have widened from pure security to include economic and environmental issues. Regional level is the apt level for a solution to myriad issues in the maritime domain.

### **Mutual Relations among the Littoral States in the BBR**

The mutual relations between India and Bangladesh have improved considerably over the years. The settlement of the maritime boundary issue in 2014 has considerably contributed towards this aspect. There are regular ship visits, training interactions and bilateral exercises. Bangladesh has also participated in IFR-2016 in India (MOD, India, 2017).

The maritime boundary issue has been resolved in 2012 between Bangladesh and Myanmar. Rohingya refugee crisis remains an area of serious concern between the two states. The current critical humanitarian issue of over one million Rohingya refugees in Bangladesh severely impinges on the relations between Bangladesh and Myanmar. In view of the hectic diplomatic efforts of Bangladesh, all the world bodies and major nations have veered around to render support to resolve the issue. Further, both nations have also opened the doors for mutual discussions and visits of each other's high officials. It is, therefore, appreciated that the strong international focus, reaction and support would ensure that the issue would be resolved in a cordial manner in a reasonable period.

Given the scope of the security challenges, Malaysia, Indonesia and Philippines have several anti-piracy, counter-terrorism and coordinated patrols agreements to defend the tri-border area's trade. They have also expanded their naval and coast guard forces and held maritime exercises. Singapore, Malaysia, Indonesia and Thailand have managed to coordinate aerial and naval patrols, intelligence sharing and incident management to safeguard the vital trade choke point, the Strait of Malacca. Malaysia and Indonesia, however, share concerns about infringements on their sovereignty by partner states during potential security operations (Stratfor Worldview, 2017).

India and Indonesia continue to have shared interests in the Indo-Pacific region. The emergence of the Indo-Pacific as a key geo-strategic construct has given Indonesia increased importance for its strategic location and rising profile. This calls for India to make Indonesia an important factor in her Act East Policy. There is a steady improvement in relations between India and Indonesia, and both countries agree that there is a scope and a need to further enhance the maritime cooperation. There are regular naval interactions including participation of Indonesia in MILAN, Coordinated Patrol or CORPAT (refers to bilateral patrols along International Maritime Border Line [IMBL] carried out by India twice a year with Indonesia, Thailand and Myanmar), IFR-2016 in India etc. It is time for both the countries to translate their strategic interests into greater maritime cooperation (Saha, 2016).

India otherwise has good foreign relations with Thailand, Sri Lanka and Malaysia. There are regular ship visits to and from all the three countries besides interactions in the field of training and technological exchanges. All three countries have participated in MILAN, bilateral CORPAT/ IMBL patrols, IFR-2016 in India (MOD, India, 2017).

Overall, it is appreciated that the Littoral states of the BBR do not have any conflicts or confrontations and should be amenable for maritime cooperative engagement for safety and security in the BBR.

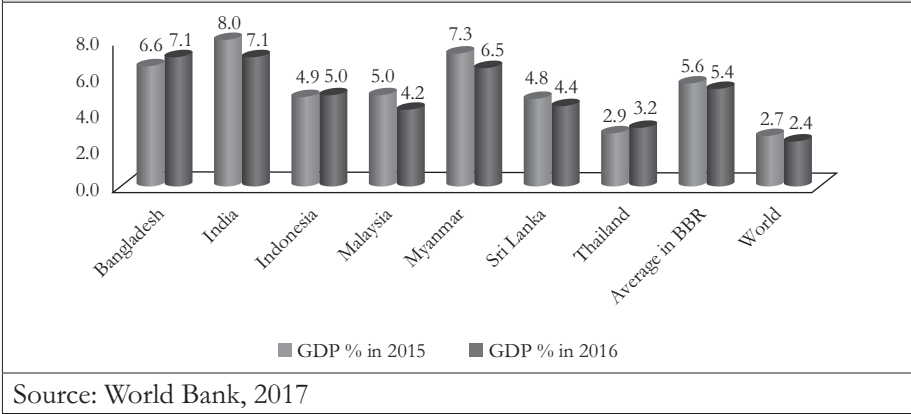
### **Identification and Analysis of Vulnerabilities to Maritime Safety and Security**

There is enhanced awareness and interest of the nations in the affairs maritime nowadays. Worldwide there is a growing urgency to accept the necessity and eagerness to cooperate to tackle diverse safety and security issues to protect vital national interests. The security concerns have widened from pure security to include economic and environmental issues. Economic security involves not only the protection of critical sea lanes of communication but also the protection of offshore assets and other marine resources etc. (Alam, 2004).

The GDP Growth Rate (in %) of the littoral states in the BBR and the world average in the previous two years i.e. 2015 and 2016 are illustrated in the following chart (World Bank, 2017). It is inferred from the data that all the littorals states in the BBR have positive GDP growth economies with even the least growing economy in the BBR i.e. Thailand having a GDP growth rate of 3.2%, which

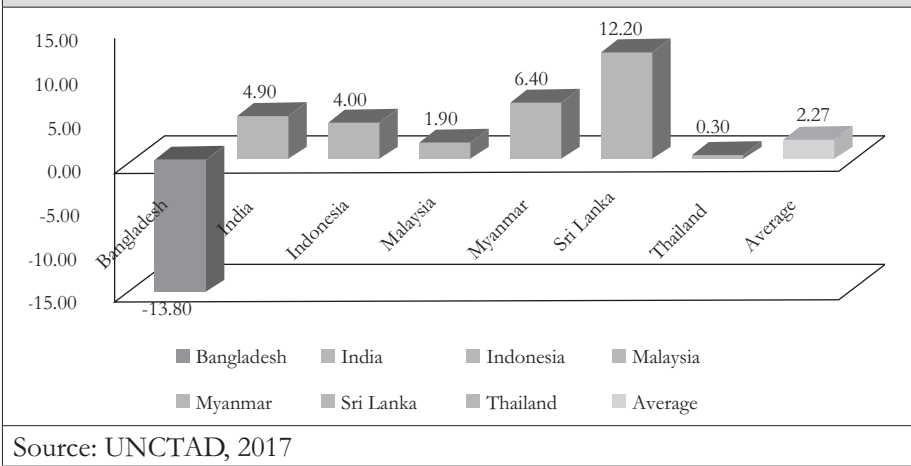
is higher than the world GDP growth rate of 2.4% in 2016. The average GDP growth rate of 5.4% in the BBR is significantly higher than the world average.

**Figure 2: GDP Growth Rate in % of the Littoral States in the BBR and the World (2015 and 2016)**



World seaborne trade volumes are estimated to have accounted for over 80 per cent of total world merchandise trade in 2015 as per the Review of Maritime Transport 2016 by the United Nations Conference on Trade and Development (UNCTAD). The marine fleet growth rates (in %) of the littoral states in the BBR for 2016 have been gleaned from the maritime profiles and the data is presented in the chart below (UNCTAD, 2017).

**Figure 3: Marine Fleet Growth Rate in % of the Littoral States in the BBR in 2016**



The analysis reveals that the cumulative average marine fleet growth rate in the BBR has shown a growth rate of about 2.27%. This correlated with the booming and positive high GDP growth rates of the littoral states of the BBR reinforces that SLOCs are of vital significance.

**Safety and Security of SLOCs:** It is thus essential that safety and security mechanisms are firmly in place to protect the SLOCs from piracy, armed robbery at sea and maritime terrorism. Inter-dependence for cooperative security between the littoral states for smooth movement of maritime trade is, therefore, a necessity.

**Safety and Security of Oil Rigs and Offshore Assets:** The discovery of offshore oil and gas blocks, and mega investment in those fields to spur socio-economic development and enhance energy security also mandates that they need to be provided with the adequate security. Further, the offshore oil and gas industry has become an increasingly vital component of the global maritime sector and a major factor in the global economy. Furthermore, day-to-day technological advances make offshore extraction technically feasible and economically viable. The offshore oil and gas industry, with its vast investment in large fixed and floating platforms and vessels, in locations extending to the edge of continental shelves and beyond, presents a disparate range of unique issues for international and national security regulation and enforcement.

## **Identification and Analysis of Challenges to Maritime Safety and Security**

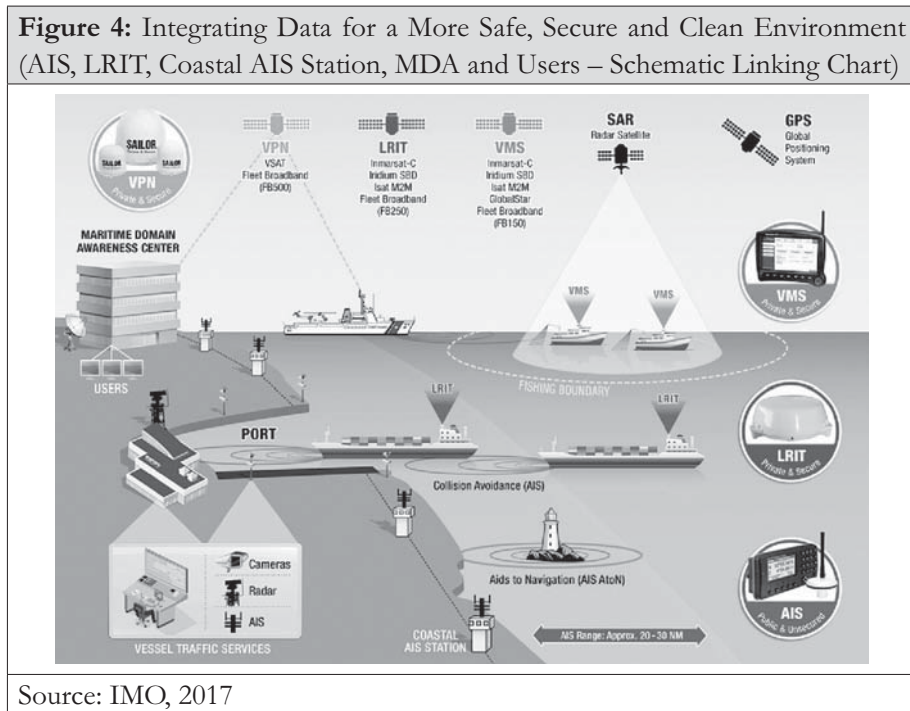
**Surveillance Capabilities:** The ever burgeoning traffic at sea means that there should a systematic observation of the concerned sea area by all available and practicable means primarily for the purpose of locating, identifying and determining the movements of ships and other vessels at sea and classify them as friendly and enemy to evaluate the response. In order to compile the surveillance data in the first instance, the littoral states need to have adequate surveillance capabilities like coastal radar chains, intelligence network etc.

**Problem of Identification:** Identification is a big challenge at sea. The maritime traffic is increasing by the day. Numerous type and size vessels operate in the seas. Being aware of the identity of these vessels is imperative for preventing any potential threat from the sea from impinging on the SLOCs, coastal and offshore security assets of the country. 26/11 Mumbai terrorist attack is a case in point. The problem of identification can be resolved if the vessels carry marine equipment

like Automatic Identification System (AIS) and Long-Range Identification and Tracking (LRIT) systems as per IMO Regulations.

AIS is designed to be capable of providing information about the ship to other ships and to coastal authorities automatically. LRIT system provides for the global identification and tracking of ships. LRIT information is provided, upon request, through a system of National, Regional and Cooperative LRIT Data Centres using the International LRIT Data Exchange (IMO, 2017).

**Figure 4:** Integrating Data for a More Safe, Secure and Clean Environment (AIS, LRIT, Coastal AIS Station, MDA and Users – Schematic Linking Chart)



**Search and Rescue (SAR):** The IMO Regulations exist regarding SAR, however, there are differing responses to fulfil the obligations of the ships at sea (IMO, 2017).

**Disaster Mitigation and HADR:** The BBR is highly prone to tropical cyclones and natural disasters like Tsunami in 2004, and the consequent disaster effects are innumerable. Effects of climate change meant that HADR operations have attracted the attention in recent years. There is a need for building capabilities, interoperability and a conceptual framework for cooperative participation in order to address the associated challenges for disaster mitigation and HADR (Chatterjee, 2016).

The assistance sought and provided on request or on a voluntary basis like it was experienced during the severe floods in Sri Lanka or when cyclones hit Bangladesh and Myanmar in 2017 (Indian Navy, 2017).

## Identification and Analysis of Threats to Maritime Safety and Security

**Piracy, Armed Robbery against Ships and Maritime Terrorism:** IMB Annual Report for 2016 declares that Bangladesh, India and Indonesia as piracy prone areas and advises mariners to be extra cautious whilst transiting in these areas (IMB Annual Report, 2016). The Global Piracy Incidents data for the period 1993-2015 also corroborates this reality (The Global Initiative, 2017).

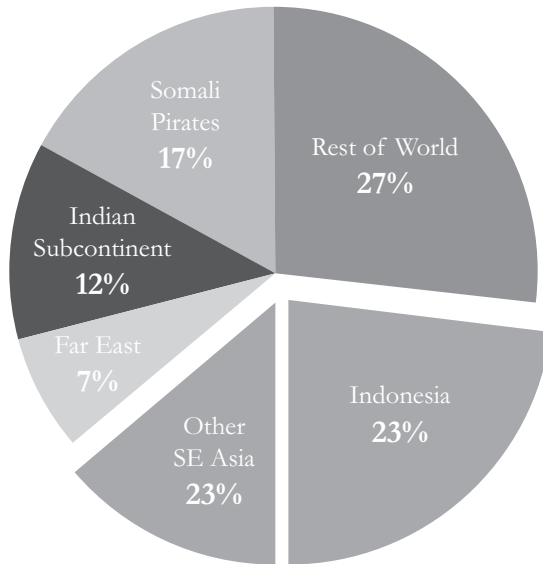
**Figure 5: Piracy Chart 2016**



Source: IMB Piracy Annual Report 2016



**Figure 6: Global Piracy Incidents, 1993-2015**



Source: The Global Initiative, 2017

The fact that seaborne trade volumes account for over 80 per cent of merchandise trade and the booming economic growth mandates that the littoral states in the BBR need to guard against the threats like piracy, armed robbery against the ships and maritime terrorism. They can be tackled effectively only through collaborative security mechanism as the experiences in the Gulf of Aden have amply demonstrated.

**Drug and Arms Smuggling:** The South and South-East Asian regions are vulnerable to the scourge of drugs and small arms trafficking. Asia has two of the largest opium-producing countries in the world viz; Myanmar and Afghanistan, and narcotics trafficking and its collateral violence depend extensively on the availability of small arms. The ‘Golden Triangle’ of Myanmar, Thailand and Laos as a major source of illegal drugs for Eastern Europe and the ‘silk route’ lies in the BBR. Drug and arms smuggling are issues, which need to be tackled effectively only through cooperative security mechanisms.

## **Current State of Preparedness of the Littoral States in the BBR**

### **Issue of Identification and Fitment of AIS and LRIT**

The problem of identification is a complex and live issue at sea; however, full compliance is yet to be achieved regarding the fitment of AIS and LRIT as per IMO regulations. Further, the fitment of AIS (Cat 'B') on fishing and auxiliary vessels less than 300 tons tonnage have not yet been implemented fully would resolve the problem significantly and will aid in security screening purposes. In most countries, there are no structured outfits in place ashore to receive that data, analyse, glean credible surveillance data, and make intelligence assessment.

White shipping information refers to the exchange of relevant advance information on the identity and the planned itinerary etc. of commercial or non-military merchant vessels. It will be extremely helpful towards collating an effective Maritime Domain Awareness (MDA) and solving the critical identification problem. India has signed agreements to exchange White shipping information with United States, Singapore, France and Israel. India is also seeking similar agreements with more countries (Sabherwal, 2016).

Two other concepts in which reasonable progress is yet to be achieved to further resolve identification issues are the issue of Identity (ID) cards to all the mariners as well as the registration of the all coastal vessels, their colour coding and equipping them with suitable equipment for identification.

### **Surveillance Capabilities**

Surveillance is a vital element to ensure safety and security. Coastal Chain of Sensors fulfils that task. However, only Malaysia (in the Malacca Straits) and India (to a certain extent) currently have that setup.

India is setting up Coastal Chain of Sensors with high-end surveillance gadgets (radars and cameras) on lighthouses and masts at various vantage locations. It would provide electronic surveillance and aid in preventing undetected intrusion along the coastline at least up to 24 nautical miles. India has further supplemented coastal surveillance with modern technical measures like a chain of AIS receivers for gapless cover, which is complementary and overlaps with the Coastal Chain of Sensors. This data would also enhance the efficacy of SAR operations (Indian Navy, 2017).

## **Maritime Domain Awareness (MDA)**

The data generated through surveillance efforts above, AIS chain and white shipping information needs to be shared with other maritime agencies via the National Command Communication Control and Intelligence (NC3I) network to generate a comprehensive MDA. India's Information Management and Analysis Centre (IMAC) at Gurgaon (commissioned in 2014) functions as the vital centre and provides the envisaged impetus to the overall coastal security apparatus (Indian Navy, 2017).

## **Sharing of MDA and Intelligence Data**

At present, there is no structured mechanism among the littoral states to exchange filtered MDA, white shipping information and intelligence data to build a comprehensive MDA for the BBR.

## **Coordinated Patrols**

The littoral states in the BBR do have certain mechanisms for coordinated patrols like CORPAT (by India twice a year with Indonesia, Thailand and Myanmar), IMBL patrols (by India with Sri Lanka) or bilateral exercises with all others (MOD, India, 2017). The existing level and frequency of such patrols are not sufficient to mitigate or act as the deterrent for the emerging threats at sea.

## **Search and Rescue (SAR)**

There is an obligation of the ships to provide assistance to the vessels in distress as enshrined both in tradition and in international treaties. However, at present common understanding or protocols are not in vogue in the BBR.

## **Disaster Mitigation and HADR Operations**

The BBR region is prone to severe cyclones. Collaborative mechanisms among the littoral states are not in place to share meteorological data and cyclone warning data as well as for providing relief. However, the littoral states do react proactively to render assistance. Indian Navy HADR assistance during severe floods in Sri Lanka and post-cyclone relief operations in both Bangladesh and Myanmar during 2017 (Indian Navy, 2017).

## **Existing Regional Linkages among the Littoral States in the BBR for Cooperation**

### **South Asian Association for Regional Corporation (SAARC)**

SAARC, in existence for over 32 years, has not yet achieved credible success and integration despite the huge potential. Most agree that at the heart of the failure is India-Pakistan hostility; and their inability to put aside political differences and cooperate for the overall development of the region. Maritime cooperation through SAARC at this stage would be an impractical endeavour or an unrealistic offer.

### **The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)**

BIMSTEC has been in existence for 20 years to enhance sectoral cooperation of the economic and technological community. It is ill equipped to handle maritime challenges related to safety and security (Sakhuja, 2014).

Cooperation in maritime security is being explored for the first time at the suggestion of PM of Bangladesh. India had taken the initiative to hold the first meeting of the National Security Advisers (NSAs) in New Delhi on 21 March 2017. The meeting underscored the importance of the Bay of Bengal and the maritime security for the well-being, prosperity, security and socio-economic development (MEA, India, 2017).

Though the move is a welcome step in the right direction, BIMSTEC has certain limitations since firstly; two stakeholders in the BBR viz; Malaysia and Indonesia are not part of the BIMSTEC and secondly; maritime cooperation is a novel area and neither BIMSTEC's charter nor the composition caters for effectively addressing the intricate issues associated with maritime cooperation and security.

### **Indian Ocean Naval Symposium (IONS)**

IONS is a voluntary initiative that seeks to increase maritime cooperation among the navies of the littoral states of the Indian Ocean Region by providing an open and inclusive forum for discussion of regionally relevant maritime issues like security, SAR and HADR (IONS, India 2017). It does not have any practical linkages for maritime cooperation at sea.

Bangladesh, the current Chairman, has taken the initiative to organise IMMSAREX-2017 in Cox's Bazar during 26-30 November 2017 to enhance interoperability (IONS, Bangladesh, 2017). It is a very welcome step as it ventures into a new avenue to make IONS a more relevant association.

### **Case Study of Trilateral Maritime Security Cooperation Initiative between India, Sri Lanka and Maldives**

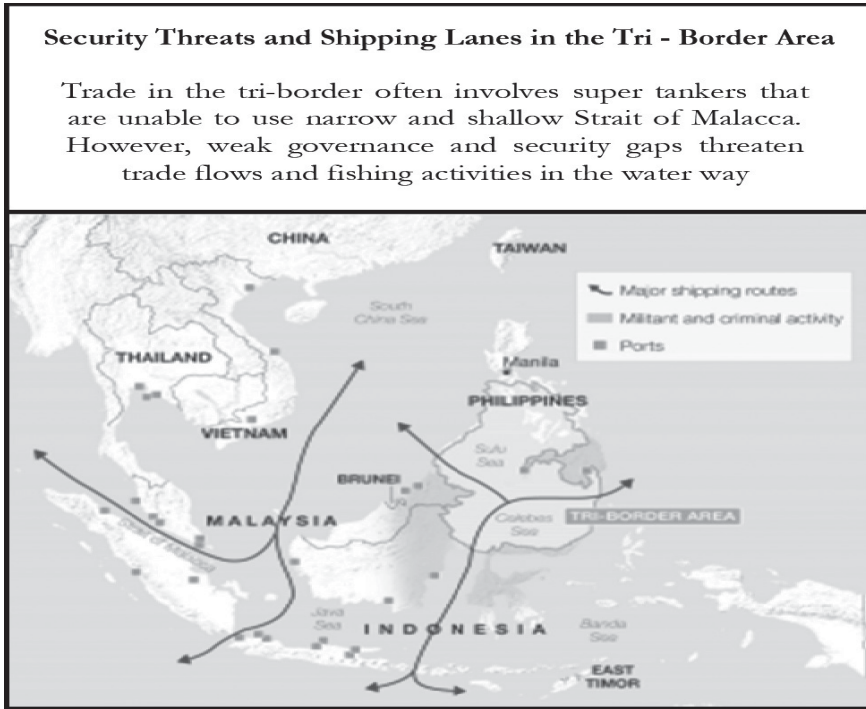
The Trilateral Maritime Security Co-operation Initiative was launched by India, Sri Lanka and Maldives at Male in October 2011 to enhance maritime security in the neighbourhood. A fresh impetus has been given during the visit of PM of India to Mauritius and Seychelles in March 2015 to revitalise and expand this construct given the growing maritime security challenges. Initiatives to enhance MDA, training and capacity building initiatives in areas of MDA, SAR etc. and joint activities including trilateral exercises are being progressed (Saberwal, 2016).

The lessons to be gleaned are that India is keen for Maritime Security Cooperative Ventures in the region and it has the backing of the PM of India himself. It can thus be inferred that any Maritime Cooperative Agreement in the BBR would have the full support of India.

### **Case Study of Trilateral Coordination Patrol between Indonesia, Malaysia and Philippines**

As per the Maritime Cooperation Agreement, Indonesia, Malaysia and Philippines are to endeavour for cooperation on security in the Celebes and Sulu seas, prevent intervention by outside nations, and forge trilateral maritime security agreement. In the Strait of Malacca, Singapore, Malaysia, Indonesia and Thailand have managed to coordinate aerial and naval patrols, intelligence sharing and incident management to safeguard the trade choke point (Stratfor Worldview, 2017).

**Figure 7: Trilateral Coordination Patrol between Malaysia-Indonesia-Philippines**



Source: Stratfor Worldview, 2017

The three nations have also launched trilateral air patrol operations recently on 12 October 2017 in a bid to fight Islamic State militants in the region. It complements the trilateral maritime patrols already in force since April 2016 (Global Nation, 2017).

The takeaway lessons from this case study are that Malaysia and Indonesia recognise that maritime cooperation is a necessity and should be amenable to a similar arrangement in the BBR. The fact that the three nations have upgraded their maritime cooperation within a year and supplemented their coordinated ship patrols with coordinated air patrols illustrates the necessity and the mutual benefits of maritime cooperation. It also gives an idea about how to utilise personnel as well as air, surface or shore assets for effective maritime cooperation and coordination in various areas of mutual interest like anti-piracy, counter-terrorism and coordinated patrols.

## **Case Study of the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP)**

The Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) is the first regional government-to-government agreement established 04 September 2006 to promote and enhance cooperation against piracy and armed robbery in Asia. Till date, 20 States have become Contracting Parties to ReCAAP including all the littoral states in the BBR with notable exceptions of Malaysia and Indonesia. The ReCAAP Information Sharing Centre (ReCAAP ISC) serves as the centre via a secure web-based Information Network System (INF) to facilitate communications and information exchange on a 24/7 basis and as the facilitator to improve incident response, capacity-building efforts, information sharing, capacity-building programme etc. (ReCAAP, 2017).

The resources of the ReCAAP member states are limited. Further, the credibility of RECAAP is pretentious as the two littoral states most affected by piracy and armed robbery i.e. Malaysia and Indonesia are not members of ReCAAP. It thus gives an inference that the involvement of all the stakeholders is necessary for effective maritime cooperation. The positive lesson to be gathered is the modus operandi of its Information Sharing Centre.

## **Existing Joint Declaration or Memorandum of Understanding for Maritime Cooperation**

Australia and Indonesia have long running understanding and agreement for maritime cooperation. The cooperation has blossomed since 2005 and it culminated as a Joint Declaration on Maritime Cooperation, which was signed 26 February 2017. It aspires for a peaceful, secure and stable maritime domain in which people, commerce and the environment can flourish (DFAD, 2017).

India and Bangladesh have also signed a Memorandum of Understanding (MoU) in the field of Blue Economy and Maritime Cooperation in the Bay of Bengal and the Indian Ocean Region on 06 June 2015 (MEA India, 2017). The MoU, however, does not cover aspects relating to safety and security in the maritime domain in the BBR.

The above two documents provide ample guidance and they can be suitably utilised and customised whilst drafting any collaborative agreement for enhancing maritime cooperation among the littoral states in the BBR.

## **Recommendations for Maritime Cooperative Agreement in the BBR**

Regional cooperation is an integral part of the ocean governance system. Regional level is the apt level. Effective maritime safety and security responses require the littoral states to emphasise on the harmonisation of law and efforts at different levels.

## **Recommendations for Cooperative Engagement at the Strategic Level**

India (the common maritime neighbour and with the maximum maritime area in the BBR) is to take the lead role initially and establish, through mutual consultations and consensus, an in-principle agreement on the need for Maritime Cooperative Agreement among the littoral states in the BBR (henceforth referred as the BBR-MCA). The process can then be taken forward to draft and ratify the BBR-MCA suitably incorporating all the aspects and recommendations elaborated in the subsequent paragraphs.

The BBR-MCA is to embed provisions unambiguously to permit the littoral states to undertake hot pursuit of pirates or terrorists into each other's territorial waters to the minimum extent required (in time as well as space domain) to alleviate the threat of piracy or maritime terrorism incidents. The apprehensions of perceived infringement of sovereignty are to be suitably addressed in the BBR-MCA.

All the littoral states are to set up Coastal Chain of Sensors with high-end surveillance gadgets (radars and cameras) on lighthouses and masts at various vantage locations along the entire coastline to provide electronic surveillance at least up to 24 nautical miles from the Coast to aid in preventing undetected intrusion and enhance the efficacy of SAR operations. This project, with high cost and time implications in view of the long coastlines (especially India, Indonesia and Malaysia), may be implemented in a prioritised and time-bound phased manner.

All the littoral states are to ensure that all the vessels (including fishing and auxiliary vessels) carry AIS (Cat 'A' or 'B') to resolve the problem of identification at sea and for security screening purposes. A structured mechanism is to be implemented with a chain of AIS receivers for gapless surveillance cover along the entire coast along with modern technical measures ashore to receive the AIS data, analyse and glean credible surveillance data and make intelligence assessment. This is to be complementary and overlap with the Coastal Chain of Sensors recommended above.



The above measures are to be further supplemented with the fitment of LRIT system for the global identification and tracking of ships, ocean-going vessels and auxiliaries. MCA should include the provision to receive that information through the system of National, Regional and Cooperative LRIT Data Centres using the International LRIT Data Exchange.

All the littoral states are to issue of ID cards (with a suitable combination of tamper-proof features like 3D hologram, barcode, biometric features etc.) to all the mariners with a single centralised database. Registration, colour coding and equipping of the vessels with AIS and/ or LRIT are to be ensured.

Fishermen are to be sensitised to be the 'eyes and ears' at sea through regular security awareness campaigns. A common coastal security toll-free number is to be promulgated for the all network service providers to enable quick means of reporting security or safety transgressions at sea.

NC3I network (like the project IMAC of India) is to be established for collation and generation of a comprehensive MDA with suitable interface linkages with all concerned at the national level and the littoral states.

Protocol Agreements should be established among the littoral states to share white shipping information (India's agreements may be utilised as templates).

### **Recommendations for Cooperative Engagement at the Operational Level**

All the littoral states are to exchange filtered MDA, white shipping information and intelligence data with each other to build a comprehensive MDA. The future IMAC project should have a separate module exclusively to display the filtered and shared MDA data of the BBR.

Regular structured bilateral CORPATs along IMBL (like India does with Indonesia, Thailand and Myanmar) are to be executed for maritime safety and security by consolidation of understanding and interoperability as well as institution of measures to jointly prosecute vessels engaged in unlawful activities and for conducting Search and Rescue. These patrols thus act as deterrents against potential sources of threats.

Common interoperability protocols and conceptual framework, sharing of meteorological data, advance and timely warnings (from all the sources including SAARC satellite), well-established organisation and standard operating procedures

among the littoral states are to be worked out for prompt, well-timed and efficient coordinated SAR, disaster mitigation and HADR efforts.

### **Recommendations for Cooperative Engagement at the Tactical Level**

All available opportunities of unscheduled rendezvous at sea are to be utilised by the littoral states to carry out suitable joint patrols and interrogation of suspected vessels (especially near IMBLs). It will publicise the message of active surveillance, coordination, synergy among the littoral states for cooperative security and send deterrence signals to the inimical elements.

### **Conclusion**

The world seaborne trade volumes account for over 80 percent of the total world merchandise trade and thus the mutual vulnerabilities as well as the challenges and the threats, which affect the maritime safety and security domains, will have direct or indirect consequential effects on the seaborne trade and activities in the maritime realm of the littoral states in the BBR.

The littoral states in the BBR have numerous divergences be it the size of the country, its extent, geography, and as regards the existing state of preparation and ability to handle the trans-national nature of the vulnerabilities of the SLOCs, oil rigs and offshore assets, mitigating the challenges like surveillance capabilities, maritime domain awareness, intelligence sharing and issues of identification at sea, SAR, disaster mitigation and HADR as well as the threats like piracy, armed robbery at sea, maritime terrorism, drugs and arms smuggling.

The charter, principles or objectives of the existing regional or multilateral associations or forums like SAARC, BIMSTEC and IONS do not have on ground mechanisms to address the safety and security aspects in the maritime domain in a practical manner. They have also not yet expanded or ventured to become effective in the maritime realm.

Effective maritime safety and security are ultimately dependent upon the willingness, the capacity, the capability and the preparedness of the littoral states in the BBR. They must display an urgency to have a model of common and comprehensive cooperative safety and security linkages that would help reduce their mutual vulnerabilities as well as overcome the challenges and the threats.

The BBR-MCA, therefore, recommends the adoption of a pragmatic approach for a robust and effective regional maritime cooperative mechanism at strategic, operational as well as tactical levels. It is also advocated that the BBR-MCA should concurrently and carefully accord due respect for each other's sovereignty taking due consideration to minimise, as far as possible, the transgression into the neighbouring state's territorial waters, which may cause unease and the perception of infringement of sovereignty. Regional collaborative linkage in the form of BBR-MCA must necessarily take the centre stage in the emerging regional maritime realm to protect the national interests through collective and cooperative safety and security mechanisms.

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Commodore Mahadevu Goverdhan Raju was commissioned in the Indian Navy on 01 July 1989. He has 28 years of distinguished service with a fine blend of command, operational, staff and training assignments in different capacities. He is an alumnus of Sainik School, Korukonda, National Defence Academy, Khadakvasla, Defence Services Staff College (DSSC), Wellington and Army War College (AWC), Mhow.

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He has a very distinguished afloat career and commanded four ships IN TRV A-71 (Torpedo Recovery Vessel), IN Ships Ratnagiri (Ocean Going Minesweeper), Suvarna (Dhanush OPV) and Ranvijay (Destroyer). He served as the Fleet Operations Officer of the Eastern Fleet.

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He was awarded Nao Sena Medal (Devotion to Duty) by the President of India on 26 January 2014 and Commendation by the Chief of Naval Staff on 15 August 2007. He is an avid sports lover and plays Golf, Badminton and Football.